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Environment, Food and Rural Affairs Committee

Tree health and plant biosecurity

Tenth Report of Session 2013–14

Volume II: Written evidence

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Environment, Food and Rural Affairs Committee

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The current staff of the Committee are David Weir (Clerk), Anna Dickson (Second Clerk), Sara Priestley (Committee Specialist—Environment), Boaz Nathanson (Committee Specialist—Agriculture), Clare Genis (Senior Committee Assistant), Sayeda Begum (Committee Support Assistant) and Hannah Pearce (Media Officer).

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List of written evidence

(published in Volume II on the Committee's website www.parliament.uk/efracom)

Written evidence

Written evidence submitted by Confor

Introduction

Confor: Promoting forestry and wood is a members' organisation, funded by and accountable to businesses in the forest-based industries. Our aim is to promote the market for wood, forest products and forest services, and to help improve the industry's competitiveness.

Confor's remit covers all parts of the UK industry supply chain, from nurseries through to wood-users. In this way it is unique as a Trade Association.

Plant health is fundamental to the industry's viability, and Confor welcomes the opportunity to submit oral evidence to the Committee.

The UK's forests support an industry that contributes over £7 billion to the economy, employs over 170,000 people, often in economically disadvantaged areas and which, due to growth since the 1980s, is substituting imports to the value of over £1 billion a year. Forestry and wood processing is the only established industry that has a positive carbon balance—planting trees sequesters carbon and wood products lock that carbon up as well as requiring a fraction of the energy to manufacture compared to other building materials.

In its Business Plan, Confor has identified pests and diseases as one of the top three priority subjects for the industry alongside securing future supplies of wood and building the market for sustainably produced wood products.

Industry Concerns Over Pests and Disease

Following consultation with members, Confor produced its own Tree Health Action Plan; it's gratifying to see that some of the recommendations have been picked up by Government, not least in its recently published report from the Expert Taskforce. However, we continue to see evidence of significant spread of Phytophthora ramorum on larch while Dothistroma Needle Blight continues to affect significant areas of pine forest. In response to this Confor has also produced a report that gives an overview of these two devastating tree diseases and importantly sets out actions that could usefully be taken together with their related costs and benefits. The aim is to protect the commercial and broader benefits that pine and ash provide.

The scale of these outbreaks is creating huge challenges for the private sector to absorb additional timber coming on to the market place and to have the resources in place to harvest the trees. Following outbreaks it is normal practice to issue a Statutory Plant Health Notice which requires the owner to fell the trees. However, there is no requirement to replant and financial support to do so is not available as standard. This creates a real threat of significant deforestation as well as financial hardship to the owner. Confor has argued, on a case-by-case basis, for targeted support to ensure that the UK's valuable forestry resource is not degraded, especially as it has major implications for rural economies and meeting the UK's carbon reduction targets.

Developing or promoting markets for wood products from pests and disease affected forests can help mitigate the financial impacts of an outbreak.

Although laudable, the Government's commitments to tackle tree pests and diseases don't go far enough. Government working with the private sector needs to take further action to significantly improve our ability to protect the wide-ranging public benefits that this country's trees, woodlands and forests in both urban and rural areas provide to society now and for the future. These are set out in Confor's report on Chalara and Dothistroma, but are not unique to these diseases.

There is scope for the UK to grow more of the young plants it uses, thereby reducing one of the risks to introduced pests and diseases. However, in order to make this a viable proposition the Forestry Commission and Natural Resources Wales must simplify and make predictable the timetable for approving applications to plant trees and restock woodlands that have been harvested. At the moment it is very difficult for nurseries to plan for the future and avoid having to destroy huge numbers of young plants because administrative delays have meant an expected deadline is missed. Consequently nurseries have looked to imports to help manage stocks.

Expert Taskforce Key Recommendations

Turning to the Expert Taskforce's recommendations, Confor's comments on each are as follows:

National context

Develop a prioritised UK Plant Health Risk Register

Confor fully supports this proposal and welcomes the forthcoming workshops to identify the variety of risks across a range of sectors. It is of vital importance that the industry is kept informed of future pests and disease risks, and that there is a single source of reference of the major threats. The register should be reviewed

regularly, and should be transparent and readily available. Industry should be represented at all times of the register's development and on-going maintenance.

Appoint a Chief Plant Health Officer to own the UK Plant Health Risk Register and to provide strategic and tactical leadership for managing those risks

Confor fully supports this proposal. There are still uncertainties over the governance, roles and responsibilities of agencies and others for plant health. FERA has recently provided an organogram of plant health governance that illustrates the complexity of the problem. The private sector finds it very difficult to engage effectively with so many levels and layers of groups and Committees determining policy on plant health. Appointing a Chief Plant Health Officer with clear responsibilities could remove these uncertainties.

Develop and implement procedures for preparedness and contingency planning to predict, monitor and control the spread of pests and pathogens

Confor fully supports this proposal. This is an essential element of tackling tree pests and diseases. Lessons from the Chalara outbreak must be learnt. It seems to be the case that Government is fire fighting the control of current pests and diseases as there is a lack of preparedness and sufficient scientific evidence to inform control strategies. This ultimately has a knock effect to the private sector. The ability to horizon scan and contingency plan is essential. Resource must be directed at better and more responsive research.

Review, simplify, and strengthen governance and legislation

Confor fully supports this proposal. See the above response on plant health governance and structure. The ability to review and simplify legislation and regulation would be welcomed. For instance, the ability to fast track felling licences on non-infected larch (Phytophthora ramorum).

International Context

Improve the use of epidemiological intelligence from EU/other regions and work to improve the EU regulations concerned with tree health and plant biosecurity

Confor fully agrees with this proposal. Evidence in Europe suggests varying degrees of resistance across ash species and varieties. There have been various breeding programs to select for resistance. This is essential work looking forward to replacing lost crops in the UK. Work with specialists including from other non-UK countries, UK nurseries and growers to assess future Ash demands as well as the means and timescale for developing a resistant home grown supply that can be made available.

Strengthen biosecurity to reduce risks at the border and within the UK

One of the actions that could be promoted is a control on imports of trees and plants to limit future pests and disease outbreaks. An import ban or controls will have consequences. For example, in the case of an immediate ban, there will be significant impacts on current planting and restocking activity.

Future bans and/or import controls should be targeted on high risks imports. A pre-requisite is that a comprehensive assessment of the risk of further harmful pest and/or disease introductions through trade in plants and trees is urgently required. This requires consultation with stakeholders on action and that needs to be re-assessed and repeated at regular intervals.

It is vital that all impacts, both positive and negative, are assessed before any decision is made on ban and/or control measures and that the extent, scientific understanding of the disease and any effective prevention strategies are assessed comprehensively by relevant specialists. Control measures or bans must consider the availability of adequate resourcing for comprehensive and if need be sustained implementation. For example plant health control, knowledge and capacity.

Capabilities and Communication

Develop a modern, user-friendly system to provide quick and intelligent access to information about tree health and plant biosecurity

Confor fully supports this proposal. The Plant Health Risk Register should be available electronically, and resources put in place to receive and disseminate information on plant health rapidly.

Address key skills shortages

Confor fully supports this proposal. The recent framework tender to the private sector to undertake surveys helps to free up Forestry Commission staff and is a good example of filling staff and skills shortages. Forestry Commission staff are woefully under-resourced and this is leading to delays in grant and licensing applications being processed for forest management and planting.

June 2013

Written evidence submitted by the Country Land and Business Association

This submission aims to answer the questions asked by the Committee in their terms of reference:

The fact that so many pests and diseases have successfully established themselves in the UK in recent years is a manifest demonstration that the measures currently in place are failing either to prevent plant or tree diseases from entering the country or to successfully contain and eradicate them once they have arrived. Additionally in the case of Chalara and Red Band Needle Blight for example it quickly became apparent that by the time they were discovered they had already been in the country for several years.

Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?

It is difficult to know if their roles and responsibilities are clear to the various agencies themselves. They are certainly not clear to the private sector. The assumption is that Fera are responsible for plant health in general. The Forestry Commission is responsible for tree health, Forest research is responsible for tree health research and FC Plant Health have responsibility for plant imports though whether this is all plants or just trees and timber is unclear. When an outbreak involving trees occurs everyone seems to be involved but we are unsure as to the hierarchy of the different organisations. This is further compounded when, as in the case of Phytophthora ramorum, the organism was not only a threat to trees but also other garden and wild plants.

It has to be said that in the recent Chalara outbreak all the agencies have worked reasonably well together and have co-ordinated well with the private sector but if success is measured in the containment and eradication of the disease then they have failed. Additionally there seem to be a myriad of committees or groups advising on or determining policy at a range of different levels which makes it really difficult for the private sector representatives to engage effectively.

Are the Defra, Forestry Commission and Food and Environment Research Agency (Fera) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?

There currently appears to have been some success with Sweet Chestnut Blight and Asian Longhorn Beetle, however without changes to import controls we expect this to be temporary, and it appears at the moment that government agencies are struggling to halt the progress of other pests and diseases already in the country.

How effective is co-ordination between agencies such as Natural England, the Forestry Commission and Fera?

The agencies do work together as demonstrated by their response to Phytophthora Ramorum and Chalara however it is difficult to discern any clear lines of command, and if there a command it is constantly changing. As seen by the completely new DEFRA team brought in to produce the current Chalara Management Plan. Whilst they have done a good job in pulling the different stakeholders and government agencies together they have suffered from having no knowledge of the sector and how it operates.

Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats?

No. we have been consistently behind the game. Chalara had been in Europe for well over a decade and whilst some in the private sector had flagged up their concerns the government agencies seem to have been taken completely by surprise and have only recently engaged with European partners to learn more about the disease. Sweet chestnut blight has already made an incursion into the country and has the potential to wreak havoc in our sweet chestnut population yet we have still not taken the decision to ban imports of Sweet Chestnut plants.

Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?

No. The private sector has considerable respect for Forest Research. It has a long history of research into tree diseases and an understanding of the tree and forestry sector. Importantly it has a legacy commitment to research that will benefit tree health not just research for research sake. In recent years and in the face of increased threats from new tree pests and diseases its funding has been cut. Even when money for tree health research has been made available they have had to compete with other organisations for this money. Whilst in some cases competition for funds can be beneficial in this case it is not. The most skilled and valuable researchers at FC and doubtless elsewhere have spent several months putting together bids for funding rather than getting on with their urgently needed research. It would surely be sensible to give FR a pivotal role of deciding where any additional research funds should be best deployed.

Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, bio-controls and chemical or management responses?

No. Without having access to a list of all of the work being undertaken in this area it is difficult to give a definitive answer to this question. However to the best of our knowledge, with the exception of Spruce bark beetle where a parasitic bio-control has now been deployed all other pests and diseases currently in the country are being addressed either by trying to find infected trees and then destroying them and the trees in a surrounding buffer zone or we have decided that there are no remedial actions we can take and the disease is being allowed to run its course.

A good example of insufficient resources being allocated soon enough is in how we are attempting to deal with Oak Processionary Moth. In the case of Oak Processionary moth there has been a half-hearted attempt to eradicate the moth by serving SPHN requiring the destruction of the caterpillars. The moth has now expanded out of central London into the London Boroughs and beyond. Had several designated teams with the necessary equipment to destroy the nests been deployed earlier this would have resulted in a much better outcome and prognosis. We believe there is still a short window of opportunity (maybe two years) in which this approach may contain and then reverse the spread of this damaging insect pest. It is also an example of where an organism that also has significant social and human health issues appears to have failed to draw any interest or resources from other departments that should be involved.

Without the imposition of an import ban it seems almost certain that Sweet Chestnut Blight will soon be in the country, if it isn't already, but we are certainly unaware of any plans for addressing it other than trying to find and destroy the infected trees. The tree health community indeed the wider forestry community is so stretched fire-fighting each new P&D as it arrives (FR have had to divert staff from AOD research and Fera have had to divert staff from PR) that there is no capacity to develop innovative or long term. The sector is discussing ways of making woods and the wider landscape more resilient but this is likely to require significant changes to some longheld beliefs.

Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls?

We do not have sufficient knowledge to comment accurately on the EU plant health framework but as several diseases appear to be entering and spreading unhindered across the EU that tends to suggest that there is room for improvement. However the fact that it was possible for both Ireland and the UK to impose an import ban (movement restriction) in the case of Chalara suggests that in many cases it is lack of political will to use the more stringent and more effective measures that is the bigger issue.

Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?

We do not have enough knowledge to comment on scope of existing plant health controls. However our engagement with the Chalara Outbreak management Team has revealed what we would consider an alarming lack of knowledge within the plant health agencies of the type and extent of biomass being imported. We have considerable concerns about the potential particularly for the incursion of insect pest on imported biomass.

The imported plant trade is so large and complex that unless there are some radical changes it seems inevitable that there will be further incursions of serious pests and diseases.

What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example on trade in plants, management of infected trees including saplings, and development of resistant trees?

We would suggest that in the case of Chalara we are still basically fire fighting. The spread of the disease across Europe has been so fast that the main lesson seems to be that anything they have tried to control the disease has not worked. There do however seem to be some signs that there may be some trees with some resistance but even this avenue may not be as optimistic as was originally thought as many of these trees appear to eventually succumb over time.

Numerous recent reports have recognised the contribution of trees and other plants to the natural environment and their importance for our continued health and well being. Some reports have also put a financial value on this contribution. A look at the Forestry Commissions Pest and Disease web-pages shows at least 14 serious P&D already in the country and numerous others just outside our borders threatening this vital natural resource. It is important that the Government does everything in their power to address these threats.
March 2013

Further written evidence submitted by the Country Land and Business Association

Since the CLA last submitted evidence in March 2013 a number of developments have occurred in the area of tree health—below are some of the key changes the CLA intends to discuss when giving oral evidence.

The CLA's Forestry and Woodland Adviser represents the Association on the Chalara Core Stakeholder Group, the Chalara Outbreak Management Team, the Phytophthora ramorum Industry Liason Group and the P ramorum Outbreak Management Team. He has also been closely engaged in the progress of the research into Acute Oak Decline. As such the CLA have an excellent understanding of the issues associated with tree health. Also CLA members bear much of the costs associated with the consequences of tree pests and diseases and so tree health is an important issue for our membership.

In the last few months it has become clear that in the wider environment in the East of England, Chalara has been present in the Ash population for at least four years and that in some areas in the rest of England infected trees were being imported and planted as long ago as 1996. Both these facts point to the long-term inadequacies in both import controls and early warning surveillance systems.

The new Defra team tasked with managing a disease outbreak such as Chalara fraxinea are starting to make a difference to the governance structures but still seem somewhat hesitant. They need to be empowered to make the changes required to address the problems.

We are heartened that sustained pressure by CLA and others has belatedly prompted a change of strategy on the management of Oak Processionary Moth disease and hope that it has been in time to halt and reverse the spread of this potentially devastating pest.

Sweet Chestnut is now the subject of a movement restriction order which effectively bans its import except from areas with protected zone status. However as protected zones status are not tightly defined there can be some uncertainty over how large the area has to be. Is it a national or regional boundary or can an individual nursery claim protected zone status? This needs to be clarified if the zones are going to be effective. The fact that the UK is still claiming protected zone status for Chalara also calls into question the value of the designation for any potential threat.

There is a clear value in research to expand our knowledge of tree pests and diseases, and a good understanding of the organism you are facing is essential if there is to be any chance of developing a treatment or management strategy to address it. However, at a time when we are facing such a significant threat and resources are limited it is vital that all research into tree pests and diseases is clearly focussed on finding ways to prevent their incursion, find treatments or managements practices that reduce their effects, develop breeding programmes and management practices that will make our trees and woodlands more resilient. This focus does not seem to be apparent in some of the research fraternity.

It is clear that despite the greater importance given to tree health by the Secretary of State, Fera, Forestry Commission and Forest Research staff at operational level are still having to juggle their time between Phytophthora and Chalara with virtually no resources available to monitor any new threats that may already be germinating in our woods.

Work has begun on a national risk register and an "Import Ban" has been introduced for Sweet Chestnut but more urgency is required. In the last few years serious pests and diseases have been arriving at a rate of more than one a year, we need to slow this rate of incursion. We must establish protected zone status for as many of our trees as possible, as quickly as possible. This will give us the best chance of reducing the import of additional diseases and will give the domestic nursery trade the foundations upon which to build greater domestic production. The decision to suspend the provision of grant aid for new planting during the RDPE transition period will strike another blow to the domestic nursery trade whose survival will be essential if we are to develop a good and reliable supply of plants grown in Britain as part of our improved tree health programme.

A start has been made addressing some of the issues but more urgency and an ability to respond to what is often a rapidly changing situation. For example, the massive explosion in the number of infections of P ramorum in larch this year which demonstrates the failure of the existing strategy and seriously calls into question the effectiveness of any strategy with the aspiration of containing the disease.

It is essential that we take prompt and effective action just to prevent the problem of tree disease getting worse. More urgency and unfortunately continued reallocation of resources will be required.

September 2013

First written evidence submitted by Defra

Thank you for your letter of 30 October about *Chalara fraxinea* and ash dieback. As I described at the evidence session on Defra's Annual Report and Accounts, the Government is taking the threat and the impact on our native ash trees very seriously. I have made it and the wider issue of plant pathogens an immediate priority for Defra. You ask several questions in your letter and I will take each in turn.

First, you asked for the chronology of events leading up to the ban. The Forestry Commission and Fera have been aware of *Chalara fraxinea* since it was first found in Poland in the 1990s, It was added to the alert list published by EPPO (European and Mediterranean Plant Protection Organisation) in 2007 and some member countries reported findings in 2008. In 2009, it became apparent through European research that *Chalara fraxinea* was another form of *Hymenoscyphus albidus* which is widespread across Europe and the UK. Subsequent research indicated that *Chalara fraxinea* was not a form of *H albidus* but a form of a newly recognised species, *H pseudoalbidus*. However, the Forestry Commission did include inspection of 15,000 ash trees (8,310 groups) in the National Forestry Inventory Survey 2009–12. 103 observations of crown dieback were found and none were identified as *Chalara*.

Ash dieback caused by *Chalara* was first confirmed in the UK on 7 March of this year in a routine inspection of a consignment of trees from a nursery in the Netherlands to one in Buckinghamshire. Following forward tracing of material known to have been supplied by the infected nurseries at least 1,000 at risk sites were identified and about 100,000 trees destroyed over the summer. A Pest Risk Analysis was conducted, which was the first Pest Risk Analysis in the world on ash dieback. *Chalara* was confirmed in mature trees in the wider environment on 24 October in East Anglia. This had no apparent connection to nurseries and suggested that *Chalara* had been present in Great Britain for some years.

Well in advance of the planting season, the Government launched a consultation on various policy options. Shortly after taking office, I ensured that the consultation was the briefest possible at 8 weeks. I made clear to the trade that I was very likely to introduce an import ban and trade bodies were encouraging their members to impose voluntary import bans. The consultation closed on Friday 26 October. The ban came into force on Monday 29 October as the consultation overwhelmingly supported my proposed plan.

The Committee also asked for details of collaboration across government and in the EU. I have ensured strong collaboration in response to this disease. At an operational and tactical level, a response team has been pulled together within Defra to deal with this outbreak including experts from Fera and the Forestry Commission. Both the Forestry Commission and Fera moved all available staff onto developing an understanding of, and response to, this disease. That has included a survey of ash trees across Great Britain carried out at an unprecedented pace. During the first week of November, over 500 Forestry Commission staff worked with Fera and other organisations, including the Country Land and Business Association, the Woodland Trust and the National Trust. They visited over 10,000 sites to look for signs of the disease. The UK was divided into 2,500 squares of 10km^2. Each was inspected. This was the first such survey in British history.

At a strategic level, I have brought all relevant departments, agencies and the Devolved Administrations together in COBR meetings to co-ordinate the cross-Government response. Scientists from within and across government have been involved in advising the Defra Chief Scientific Adviser, Professor Ian Boyd, through an expert group chaired by the Government's Chief Scientific Adviser, Professor Sir John Beddington.

I know the relationship with the Devolved Administrations is of interest to particular Members of your Committee and, while plant health is a devolved issue, our response is organised in separate "disease units" of Great Britain and Northern Ireland in the same way as we do with animal health issues. We have worked closely with the Scottish and Welsh Governments in developing the response to ash dieback in Great Britain, from the initial survey work and discussions at COBR to formulating policy options. We are also working closely with the Department of Agriculture and Rural Development, Northern Ireland, (DARD(NI)) which conducted its own specific surveys of ash locally for any symptoms of the disease. The survey covers all of Northern Ireland, particularly recently planted sites of ash in public and private woodland, roadside plantings, established trees, hedgerows and nurseries. Any suspect trees found will be sampled and undergo laboratory testing for the Chalara pathogen. DARD(NI) is adopting a risk based approach with the initial focus of surveillance on plants for planting and trees planted within the last five years. To date over 160 sites have been surveyed. Evidence has been found of ash dieback in recently planted sites in Northern Ireland from the surveys so far. Surveillance will continue over the winter months.

We have sought pan-European advice to learn from the experience of those countries also affected by *Chalara fraxinea* on mainland Europe. We are working with the Chief Officers of Plant Health (COPH) group of the European heads of plant health science to gain a Europe wide perspective. The UK is also a member of Fraxback, an EU funded project aimed to generate comprehensive understanding of ash dieback through sharing and synthesis of available knowledge. The project has 26 partners from across Europe, China, Russia and New Zealand.

As well as drawing on expertise from international plant health experts, we put out an urgent call for information to UK embassies across Europe. They have come back to us with a range of information, including other countries' experience of tackling *Chalara*, scientific papers and the names of experts. We are pursuing these as we develop our evidence base.

We are basing our advice on the best available national and international evidence, which has been drawn together by a group of experts convened by Defra's Chief Scientific Adviser, Professor Ian Boyd. Our immediate research and analysis is focusing on providing practical solutions to informing policy and management of *Chalara*, including integrating:

- The Key Scientific Facts, supported by ongoing scientific research and analysis (http://www.forestry.gov.uk/website/forestry.nsf/byunique/infd-8zss7u);
- Epidemiological modelling of disease origin, movement of spores, and risk of spread in the UK; and
- Socio-economic analysis of the value of ash trees to gain a baseline understanding of the socio-economic impacts of the disease against which we can begin to assess the social and economic merits of managing it (which in turn will depend directly on the projected effectiveness of different control strategies).

We are initiating a more strategic programme of multidisciplinary research through the Living with Environmental Change (LWEC) research initiative on Tree Health and Plant Biosecurity (co-funded between Defra, Forestry Commission, Research Councils and Devolved Administrations).

The total research spend by Defra and the Forestry Commission over the past five years on tree and plant health was increased from £2.8 million to £5.6 million. The attached table shows this broken down for the past five years including Fera and the Forestry Commission and that planned for 2014–15 on tree and plant health.

In terms of current and future action, the scientific advice is that it will not be possible to eradicate Chalara and so the focus will be on slowing the spread of the disease. On 7 November I convened a summit involving industry, scientists and other stakeholders to discuss the immediate actions we should take to tackle the disease. There was a broad consensus around the approach we should take and on 9 November I announced a number of actions we would take, immediately:

1. Newly-planted diseased trees and diseased trees in nurseries will be traced and destroyed, as once young trees are infected they succumb quickly.
2. Mature trees will not currently be removed, as they are valuable to wildlife, take longer to die and can help us learn more about genetic strains that might be resistant to the disease. Where there is no foliage, infection does not occur directly from tree to tree.
3. Better understanding of the disease will be built through research and surveys, which will look not only for diseased trees but for those that show signs of resistance to Chalara, to help identify genetic strains resistant to the disease.
4. The search for the disease will include trees in towns and cities as well as the countryside, building partnerships with a range of organisations beyond Government.
5. Foresters, land managers, environmental groups and the public will be informed about how to identify diseased trees and those likely to be resistant to the disease, and know what to do if they find a diseased tree.

These conclusions and actions apply to trees on public and private land. These immediate actions will be followed up with a more detailed control plan for *Chalara* which I will be publishing shortly.

Since I took up office, I have made wider issues of plant and tree health one of my highest priorities. In October, I asked Defra's Chief Scientific Adviser, Professor Ian Boyd, to convene an independent expert taskforce to examine ways to prevent plant pests and pathogens from entering the country in future. Their work has included a look at the similarities and differences in dealing with animal and plant disease outbreaks, and what each can learn from the other. They will publish their interim report shortly.

I would also be grateful if, in wishing to publish maps of the disease, the Committee could refer to the Forestry Commission's website (http://www.forestrv.clov.uk/chalara) as that will contain the most up-to-date information including a map of sites where disease is confirmed. I will keep the Committee updated on progress.

Annex A

PLANT HEALTH RESEARCH SPEND BY DEFRA

This table includes funds spent by Defra and FC over the past five years on plant health research, and that planned up to 2014–15. This is a complex area with funding coming from a number of sources.

While the overall total budget on forestry research will decrease over this period the amount spent on Plant Health Research will increase owing to the injection of £8 million in support of the Tree Health Action Plan, and the fact that FC have increased the proportion of their research budget to be spent on plant health.

The Core Defra Plant Health R&D includes a figure of £600k per annum for Bee Health and pollination research.

There is a further £2 million allocated under the Tree Health and Plant Biosecurity Action Plan which will be committed in 15/16. This was approved exceptionally as it attracted additional funding of up to £4 million from research councils under the Living with Environmental Change (LWEC) initiative.

The figures here reflect those in PQ 1082, but the PQ response also included the overall Forestry Research budget figures as requested.

	08/09	*09/10*	*10/11*	*11/12*	*12/13*	*13/14*	*14/15***
Core Defra Tree Health and Plant Biosecurity Action Plan*	N/A	N/A	N/A	N/A	2	2	2
Core Defra (managed by Fera) Plant Health Research	1.3	1.4	0.7	2	1.6	1.4	1.3
Forestry Commission Plant Health Research	1.5	1.4	1.4	1.7	2	2.3	2.1
Total Defra Research spend (Em)	**2.8**	**2.8**	**2.1**	**3.7**	**5.6**	**5.7**	**5.4**

*published October 2011

**Please note: Defra budgets for 13/14 and beyond are indicative and may increase or decrease to ensure evidence resources remain aligned and responsive to policy needs.

December 2012

Second written evidence submitted by Defra

INTRODUCTION

1. This note sets out Defra's responses to the questions identified by the Committee for its Evidence Session with the Defra Chief Scientific Adviser, Professor Ian Boyd, Fera and the Forestry Commission. It contains input from the Forestry Commission and Fera.

Q1—*The chronology of the events leading up to ash dieback discovery in the UK*

1992	Ash Trees reported dying in large numbers in Poland
2006	*Chalara fraxinea* identified as causal organism in Poland.
2007	*Chalara fraxinea* added to the European and Mediterranean Plant Protection Organisation (EPPO) Alert list.
2008	— European Commission's Plant Health Standing Committee (PHSC)—Chalara reported in Poland — EPPO Reporting Service (RS)—Chalara findings in Norway (May 2008)
2008	Studies first concluded that *C. fraxinea* was the anamorph of an already described species, *Hymenoscyphus albidus,* which is considered as non-pathogenic, native, and widespread in Europe. The emergence of a new disease was thus difficult to explain.
July 2008	The Plant Health Risk Management Workstream (a Fera co-ordinated committee of Fera, Devolved Administration and Forestry Commission experts, to prioritise Fera Pest Risk Analysis (PRA) and track PRAs produced by others) discuss the EPPO Alert and Forestry Commission indicate they would discuss whether a tree pest alert should be issued. Whilst the organism was a candidate for an EPPO PRA, information was lacking.
October 2008	29 Oct Letter to European Commission saying that UK believes *C fraxinea* warrants listing in the Plant Health Directive and that a PRA was in preparation
November 2008	Forest Research confirm to the Risk Management Workstream that they had started a PRA and that an EPPO meeting in August 2009 would develop this.

February 2009	A study—a Polish paper—identifies *Hymenoscyphus albidus* as the teleomorph of *C fraxinea*—concluded disease being caused by an organism that is native and widespread in Europe including the UK. (Published online in Feb and in journal in Oct). This discovery meant import controls would have been ineffective and limits the action which could be taken under World Trade Organisation (WTO) rules.
May 2009	E-mail exchange between EPPO and Forest Research results in EPPO PRA not being given priority given sight of the findings of the Polish paper mentioned above
15 September 2009	Horticultural Trades' Association wrote to the Forestry Commission to request a ban on imports of *Fraxinus excelsior* (common Ash) based on evidence in Europe, situation in the Danish nursery industry and "similarities to the virulent strain of Dutch elm disease some 40 years ago".
26 October 2009	Forestry Commission replies. Share concerns, but apparent that the disease is due to a fungus which is widespread across Europe and GB. This precludes initiation of an emergency response under the EU Plant Health Directive. Advises that "industry carefully considers where it sources its planting material and monitors its purchases for signs of ill health".
November 2009	Paper to FC Biosecurity Programme Board, saying that banning of ash imports was not possible under WTO rules because the fungus was widespread in UK as *Hymenoscyphus albidus*
November 2009–12	Forestry Commission National Forest Inventory commenced including an assessment of tree health including methodology specifically to provide an early warning of Chalara in order to gather the evidence necessary for pest free area status. — Forestry Commission inspection of 15,000 individual Ash trees in 8,310 groups. — 103 observations of crown dieback and none identified as *Chalara*. — Ash identified as one of the most healthy broad leaf trees surveyed.
2010	— Italy report findings made in 2009 to EPPO — France report findings made in spring 2008 to EPPO — Belgium, Lithuania, and the Netherlands report findings to the EC and that they will take no action. — European Commission's Plant Health Standing Committee (PHSC)—Chalara reported in Belgium — Austria report finding in *Fraxinus angustifolia*, (narrow-leaved ash) the first report in a species other than *F. excelsior* (common, or European ash)
March 2010	— Paper by Queloz et al—discusses existence of two different species—*Hymenoscyphus albidus* and *H pseudoalbidus*. The former is not thought to be the cause of Ash dieback whereas the pathogenicity of the latter is convincingly demonstrated. (Published online 30 Mar and in journal in Apr). Whilst *Hymenoscyphus albidus* is found in the UK *H pseudoalbidus* is not
May 2010	Chalara included as one of the ten most potentially damaging pests in the Forestry Commission corporate plan from 10/11
June 2010	EPPO Chalara Workshop, Norway—No UK participants were available to attend as scientific staff were fully committed dealing with the outbreak of *Phytophthora ramorum* disease in larch
July 2010	Forestry Commission commissioned a survey of ash in Scotland by the retired pathologist Jim Pratt and the Danish expert Dr Iben Thomsen to undertake a survey of the condition of ash in Scotland and the feedback was that only the endemic *Hymenoscyphus albidus* was found.
2011	Molecular studies back up 2010 evidence that *C. fraxinea* was the anamorph of the new species *Hymenoscyphus pseudoalbidus*.
10 June 2011	Forestry Commission Tree Health Strategy includes *Chalara fraxinea* in Annex 1 on Pests and diseases, showing the risk of introduction as "high" and the economic impact as "medium", with a recommendation that ash plants should be sourced from a Pest Free Area (PFA). It also indicates that a contingency plan has not been produced and the generic contingency plan would be used.

July 2011	A follow-up survey of ash in England by Dr Iben Thomsen to undertake a survey of the condition of ash and the feedback was that only the endemic *Hymenoscyphus albidus* was found.
18 October 2011	Publication of Defra's Tree Health and Plant Biodiversity Action Plan. Recognition in Government, industry, and society of the growing treat to trees and plants from an increasing range of pests and pathogens
October 2011	Forest Research "Path News" notes *Chalara fraxinea* as "one to watch"
20 February 2012	*Chalara* identified in routine nursery inspection of consignment of infected trees from a nursery in Netherlands to nursery in Buckinghamshire, England.
7 March 2012	Finding confirmed
3 April 2012	— Defra Ministers and officials in the Devolved Administrations informed in monthly update on Plant Health. — Pest Alert issued to industry.
April 2012	UK Plant Health Authority deployed additional resources to trace forward material known to have been supplied from the infected nurseries.
Summer 2012	1,000 at risk sites were identified and 100,000 young trees destroyed
31 August 2012	Consultation launched, based on Rapid Pest Risk Analysis (first in the world on *Chalara fraxinea*), to obtain views on how to manage the threat of Ash dieback on the UK's Ash trees
24 October 2012	During consultation period, *Chalara* confirmed in the wild in East Anglia. No apparent connection to nurseries and suggested environmental presence of *Chalara* in Great Britain for some time.
26 October 2012	Consultation closed—overwhelming support for import and movement restrictions.
29 October 2012	Movement of Ash from anywhere that is not a certified pest free area (no such areas at this time) became a criminal offence. Maximum fine £5,000.
2 November 2012	Rapid Survey by Forestry Commission.—unprecedented in scale with 500 staff a day being mobilised and around 2,500 10 kilometre squares being covered
7 November 2012	Chalara Summit with stakeholders—to pool knowledge and learning about the Chalara outbreak to establish best practice and inform future policy on plant disease.
9 November 2012	Publication of objectives/short term actions for controlling Ash dieback
6 December 2012	Publication of Chalara control plan and interim report of the Tree Health and Plant Biosecurity Expert Taskforce

Q2—*Update on the current distribution of the disease.*

As of 5 December there are currently 291 confirmed sites: in 17 nurseries, 119 recently planted sites and 155 locations in the wider environment. Many of these were detected during the rapid survey completed during the first week of November. The Plant Health Authorities have been supported by volunteers from organisations such as the Woodland Trust, National Parks, National Trust and CLA as well as members of the public.

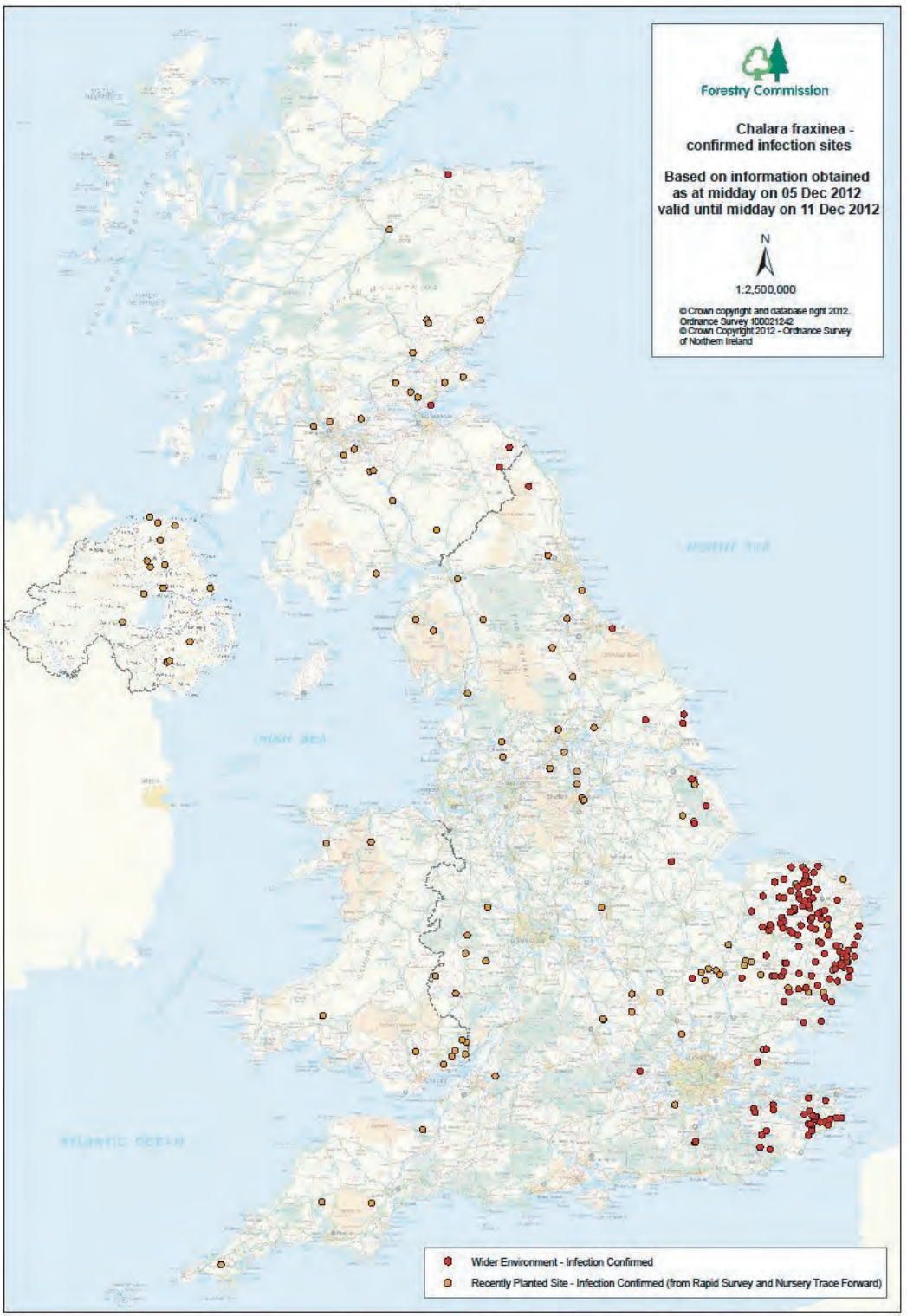
New discoveries of the disease do not mean the disease is spreading. The scientific expert group convened by Professor Ian Boyd concluded that spread by windborne dispersal of fruiting spores only occurs during the summer, and the other main pathway by movement of infected stock has been stopped by the restriction of import and movements.

CONFIRMED FINDINGS FROM SITES SURVEYED TO DATE

	At 9th Nov	*At 13th Nov*	*At 15th Nov*	*At 19th Nov*	*At 21st Nov*	*At 23rd Nov*	*At 28th Nov*	*At 5th Dec*
Nursery Sites	15	15	17	17	17	17	17	17
Recent Planting Sites	55	55	67	73	84	93	105	119
Wider Environment	85	114	116	118	121	127	135	155
Total	**155**	**184**	**200**	**208**	**222**	**237**	**257**	**291**

Figure 1

MAP OF CONFIRMED INFECTION SITES IN GB (AS OF 5 DECEMBER)



Q3—*The advice being given to the public and tree/plant industry on responding to ash dieback*

2. Foresters, land managers, environment groups and the general public have been kept informed about how to identify diseased trees and those likely to be resistant to the disease, and to know what to do if they find a diseased tree.

3. We have been encouraging the public to be on the lookout for and report possible cases. We have ensured journalists are alerted to the resources available to the public, and are encouraged to publicise them. The Forestry Commission web pages provide prominence to resources available whilst the Defra and .Gov sites are directing traffic to the appropriate page on the Forestry Commission website. There have been 200,000 hits on the Forestry Commission Chalara web page.

4. We have been encouraging key stakeholders to publicise guidance with their members. We have ensured that key messages about bio-security for infected areas are included in newsletters eg Big Tree Plant, Discovery Pass Holders. Defra and the Forestry Commission have also set up a single helpline for public enquiries and to record information.

5. Public information measures are stressing that, in addition to the movement of plants for planting, a key point is to avoid long distance movement of fallen ash leaves, particularly from within the areas where infection has been found on mature trees (Norfolk, Suffolk and Kent). The Forestry Commission website (www.forestry.gov.uk/chalara) has detailed photos and videos that will help people look out for ash dieback. If individuals suspect they have discovered a case of Chalara they have been informed that they should contact the helpline.

6. The Forestry Commission website also includes advice to forest visitors suggesting that if people are visiting a wood where inspection has been found or is suspected they should take some simple precautions to not remove any plant material from the woodland, and where possible, before leaving the woodland, to clean soil, mud, leaves and other plant material from footwear, clothing, dogs, horses, the wheels and tyres of bicycles, baby buggies, carriages and other vehicles.

7. To mark National Tree Week, a series of very simple, sharable digital postcards have been produced for wide distribution on Defra's and partner organisations' social media channels. The postcards are targeted at five different groups of people: cyclists, gardeners, horse riders, walkers and families and provide easy-to-follow advice on how to avoid transmitting ash leaf litter between sites.

8. The Forestry Commission have provided extensive guidance for land owners on their website and this includes information on identification of infection, guidance for the trade, biosecurity advice, planting guidance and posters for use by land managers to inform the public of what to do in both infected and uninfected woodland. Fera are contacting landscaping trade associations to access their members lists to ensure the requirements of the new legislation are understood by recipients of ash sales.

9. A range of silvicultural guidance has been rapidly developed by the Forestry Commission in consultation with stakeholders. It will be published on the Forestry Commission website when the Chalara control plan is published. This is designed to aid tree and woodland owners and managers to make the right decisions in the light of Chalara. This includes advice on when to fell, alternative species and silvicultural systems, and ongoing management guidance. It also includes advice on biodiversity and the management of single trees. We will keep this under review as our understanding of Chalara develops.

10. Detailed advice has been provided to local authorities on the disposal and composting of ash leaves. This was developed in consultation with the Environment Agency, the Food and Environment Research Agency, and the Forestry Commission. This has been circulated to local authorities and a range of waste management organisations and will be published online shortly. The Highways Agency and Network Rail have worked closely with the Forestry Commission to develop guidance for staff working on their networks about the handling and disposal of ash material.

11. In addition since 2010, Government has funded various publicity projects to raise awareness of biosecurity among both the horticultural industry and general public. This has included new biosecurity protocols for garden centres and for parks and gardens, training events and regional forest health days for the forestry sector, films for the industry and public on Phytophthora ramorum, public awareness raising posters and a biosecurity awareness stand at Chelsea Flower Show. A poster has been produced to help the public understand what they can do to help, and anyone may download it to use in appropriate places, such as points of entry into public access areas. In addition we have provided advice for a National Trust-funded poster on general plant biosecurity for those who work in forests and woodlands. This will be launched by National Trust and Woodland Trust in December.

Q4—*Liaison with other EU member states on ash dieback including on monitoring and research*

12. We are ensuring that we are learning from the experience on mainland Europe, where they have been dealing with this disease for a few years now. We have engaged with the Chief Plant Health Officers (COPHS) group of the European heads of plant health to gain a Europe wide perspective. The UK is also a member of FRAXBACK, an EU funded COST (European Cooperation in Science and Technology) action aimed to generate comprehensive understanding of Ash dieback through sharing and synthesis of available knowledge.

FRAXBACK has 26 partners from across Europe and China, Russia and New Zealand. UK plant health scientists attended the most recent FRAXBACK meeting in Vilnius which took place in mid November.

13. The UK, through Forest Research, also leads on another COST action, PERMIT, which is providing a structured means to both address and reduce the risk of pathways of global pest movement. This work extends beyond, but is complementary to, the current phytosanitary procedures.

14. On the second of November, the Forestry Commission's Director General wrote to forestry contacts across Europe to seek information on ash dieback, and management approaches, 14 countries had responded as of the 15 November 2012. As well as drawing on expertise from international plant health experts, we put out an urgent call for information to UK embassies across Europe. They have come back to us with a range of information, including on other countries' experience of tackling Chalara, scientific papers and the names of experts. We have also been liaising closely with other Member States through the Standing Committee on Plant Health, including presenting the current UK position and future plans to the Standing Committee on 22 November.

Q5—*Impact of EU Plant Health framework and WTO rules on ability to manage spread of ash dieback*

15. In developing policy the UK must consider our international obligations under the WTO Sanitary and Phytosanitary Agreement (SPS), which is binding on all member countries of the World Trade Organisation and those in the International Plant Protection Convention (IPPC). In addition we must also adhere to the EU Plant Health Directive.

16. The rules of international trade, as set out in the SPS, allow countries to set their own standards, but state that regulations must be based on science. They should be applied only to the extent necessary to protect human, animal or plant life or health. And they should not arbitrarily or unjustifiably discriminate between countries where identical or similar conditions prevail. WTO members may use measures which result in higher standards if there is scientific justification. Countries must establish SPS measures on the basis of an appropriate assessment of the actual risks involved, and, if requested, make known what factors they took into consideration, the assessment procedures they used and the level of risk they determined to be acceptable.

17. Under the EU Plant Health Directive the EU's Standing Committee on Plant Health determines which pests should be classified as quarantine pests or regulated non-quarantine pests, and the special requirements to be taken to prevent their introduction and spread. *Chalara fraxinea* is not currently regulated by the Plant Health Directive but Article 16.2 of the Plant Health Directive provides for a Member State to take temporarily any additional measures which it deems necessary to prevent the introduction or spread of such harmful organisms in its territory, or the EU more generally. The emergency national legislation introduced domestic measures to prevent the introduction and spread of *Chalara fraxinea* within Great Britain. Equivalent emergency measures in relation to Northern Ireland were made on 26 October 2012. Our national legislation has been presented to the European Commission as a temporary measure to consider whether wider EU measures should be introduced against Chalara.

Q6—*How lessons learnt from ash dieback are to be integrated into Defra and its agencies' work on tree health.*

18. The Secretary of State asked Professor Ian Boyd to convene an expert taskforce to review our strategic approach to plant health in the light of Chalara. Its remit is to provide an independent perspective on risks, costs and benefits as an aid to the setting of priorities and resource allocation, identify potential barriers to improved plant biosecurity and suggest ways of resolving them, suggest ways to make use of best international practice in biosecurity management and make recommendations for next steps.

19. This task force will published its interim report in December and this will make a number of recommendations about how wider threats to tree health can be tackled. We will be considering those recommendations over the next three months as the Task Force continues its work.

December 2012

Third written evidence submitted by Defra

Introduction

This note sets out Defra's responses to the questions identified by the Committee following its Evidence Session with the Defra Chief Scientific Adviser, Professor Ian Boyd, Fera and the Forestry Commission. It contains input from the Forestry Commission and Fera.

1. *Wood fuel and wood products*
(a) *What assessment has Defra made as to the risk of transferring Chalara fraxinea via wood for use as fuels, or as wood products? (If ongoing what is the timescale for its completion?)*

The pest risk analysis completed for Chalara fraxinea, on which the public consultation during 2012 was undertaken, assessed the risk of wood and timber products as being medium, but on the basis of other non—

sporulating forms of Chalara. The PRA states, "No information is available on the ability of the pest to persist in soil; other pests with a Chalara anamorph have been shown to be transmissible via soil or infected wood but these species are able to form resilient, long-lived spores which do not appear to be produced by C. fraxinea."

The outcome of the consultation into the PRA is at:

http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/documents/chalaraConsultationOutcome.pdf

Four out of the 68 respondents referred to the movement of ash wood as a potential pathway and sought reassurance that biosecurity measures would be introduced or at least considered to prevent or restrict the movements of timber from diseased areas. This was addressed in the interim Chalara Control Plan, and is covered in b) below.

Since then a French study, (Husson *et al*, 2012, Plant Pathology), has been undertaken on the potential for ash timber to transmit the disease. The study indicates that export of ash logs could represent a potential risk for spreading the disease, but at a much reduced level, and concludes that the available data do not support control of ash logs as a quarantine measure. This evidence suggests a much reduced level of risk.

(b) *What advice and/or regulation does Defra propose on limiting the movements of wood and wood products based on this assessment?*

At this time, there are no restrictions on the movement of ash wood from other member states, and none is currently proposed on the basis of the available evidence.

The legislation continues to permit movements within Great Britain of all ash timber from sites with no confirmed Chalara fraxinea infection, which is now assessed, following the French study highlighted above, as posing a low risk of disease transmission. Although there are no specific measures on logs and firewood in the legislation, the general prohibition on spreading Chalara fraxinea means that movement is prohibited within Great Britain of logs and firewood from woodlands and other sites with confirmed Chalara fraxinea infection and which have been served with a statutory Plant Health Notice.

The legislation continues to permit imports of sawn ash timber from certain Third countries under existing regulations against the forestry pest Emerald Ash Borer (EAB). These require the material to be accompanied by official phytosanitary (plant health) certificates declaring that the material either originated in areas known to be free of EAB, or that the wood is bark-free (which addresses the Chalara risk as well) before entering Great Britain. Imported woodchips and bark of ash material have the same certification requirements as for wood, but the alternative to originating in an area of pest freedom is that the material has been processed into pieces of not more than 2.5cm thickness and width.

A ban on timber movement from other EU countries was considered, but was not taken forward for a number of reasons.

- To justify a ban, we would have to prove that the trade in timber presents a high level risk of transmitting the disease. The evidence does not indicate this.
- In order to demonstrate equivalence with other Member States we were of the opinion that any measures taken should recognise the prevalence of the disease in GB. Controls on movement of ash timber from GB would have been needed to reflect the controls of exports from other Member States.
- As infected sites are present throughout GB, either as recent plantings or in the wider environment, we would not have been in a position to declare pest free areas for the export of untreated ash timber.
- A ban was considered to be disproportionate, and would adversely impact on woodland management, GB ash producers, and firewood merchants.

It should be noted that the bans on imports in both Northern Ireland and the Republic of Ireland were introduced on the basis that eradication of the disease from the whole island of Ireland remains feasible. No sites in the wider environment have been found to date in either of these two countries. The possibility of eradication justifies a higher level of precaution against the low risk of reintroduction through movements of wood.

(c) *What level of imports to the UK are there currently of ash products, including as an energy feedstock?*

On 1 April 2009, due to the threat from the forestry pest Emerald Ash Borer (Agrilus planipennis), the EU introduced plant health landing requirements for wood of ash entering EU member states from countries where the pest is known to occur ie Canada, China, Japan, Mongolia, Republic of Korea, Russia, Taiwan and USA. The requirements specify that the imports of ash wood of must be accompanied by a phytosanitary certificate (a statement of plant health) issued by the relevant authorities in the country of export declaring that the material either originates in an area known to be free of Emerald Ash Borer or that it is squared so as to remove entirely the outer round surface. In the case of imported woodchips the material is also required to be accompanied by a phytosanitary certificate declaring that it either has originated in an area known to be free of the pest or that it has been processed into pieces of not more than 2.5 cm thickness and width.

Approximately 468 consignments of sawn wood of ash comprising of 15,500m^3 of material enter Great Britain from the USA and Canada each year and all of these are subject to plant health inspections to ensure that they meet the stipulated landing requirements.

There are a number of firewood merchants which import ash wood into the UK from other Member States. The wood is well prepared and kiln dried, ready to burn, and represents no risk of transmitting the disease. Volumes are fairly small, with one of the largest companies importing only around 1,500 tonnes per year. As ash is not a regulated species, no detailed records of imports are collated.

(d) *What monitoring is done of such imports, including quality assurance to ensure that leaves and twigs which make a product a higher risk for transmitting Chalara are not imported?*

Contamination with leaves and/or twigs is prohibited for ash material derived from third countries. On average, around 1% of consignments from third countries fail to comply with the landing requirements and therefore they are subject to remedial action such as re-export, destruction or in exceptional cases treatment. Ash timber imported into the UK from Non-EU third countries is all fully sawn and dimensioned to order, and is kiln dried. Given the 100% inspection it receives, the risk of Chalara being transmitted from this source is extremely small. There are no records of ash firewood currently being imported from third countries.

There are currently no specific phytosanitary requirements for C. fraxinea in the EC Plant Health Directive, thus there are no checks on, or data for imports from within Europe. However, there is no evidence of trade in ash logs for sawmilling, and imports are likely to be of a similar standard to those from third countries. Thus the risk from this source of Chalara transmission is estimated to be extremely low.

2. *What was the UK research spend from 2008–09 to date on Chalara research, both by Defra and its agencies and by other research bodies and/or the horticultural industry? What joint work has been undertaken on this with bodies in other EU member states?*

Chalara-specific research and analysis

Defra has funded epidemiological modelling work in 12/13, conducted by Cambridge University in collaboration with Rothamsted Research, in response to the UK *Chalara fraxinea* situation. The team has developed and parameterised a small suite of models to address the following three aims:

(1) The likelihood and risk of airborne incursion into the UK;

(2) Predicted spread of Chalara in the UK and effects of mitigation strategies;

(3) Risk-based weighted sampling for Chalara in the UK.

The models used provide probabilities for incursion, spread, effectiveness of control and effective location of future sampling, using the best available data or information to which the team have had access. The models are tools that integrate the current state of knowledge in order to predict outcomes. Defra will co-fund with BBSRC a programme of further epidemiological modelling, and associated biological "parameterisation", to inform policy and strategies for the management of the disease.

Defra will also co-fund with BBSRC research to characterise the genetics of Chalara "strains", and development of rapid practical diagnostics, as well as molecular epidemiology to add to understanding of the biology, diversity and pathogenicity of the fungus. In addition a number of statutory agencies, led by JNCC, have formed a partnership to pool money to fund priority research this financial year. Tenders are expected to be invited in January 2013 and funding for this work is expected to be in the range of £175–£225k.

Defra has conducted a preliminary assessment of the wider social, economic and environmental value of ash trees to develop understanding of how targeted, evidence-based and proportionate action to reduce and delay the spread of the disease could offer value for money, for taxpayers and society at large. Whilst any reduction in the rate of spread would bring wider benefits, Defra will also consider any costs associated with action, both public and private sector (which can often be implicit), and ensure that these are proportionate to what we think they can achieve.

Whilst Forestry Commission research spending specifically on Chalara to date has been nil Forest Research has been a member of the European COST action FRAXBACK since its start in May 2012. The aim of the FRAXBACK action is, through sharing and synthesis of available knowledge, to generate comprehensive understanding of the Chalara fraxinea dieback phenomenon, and to elaborate state of the art practical guidelines for sustainable management of the disease in Europe. This will allow us to make full use of the experience of other countries in dealing with the pest in the wider environment to inform our own policy decisions in GB.

In addition diagnostic techniques developed to address other pathogens have been able to be adapted and developed to significantly improve the rapid turn round of suspect ash samples during the recent intensive investigative exercise.

Though not strictly research, the Forestry Commission spent approximately £1 million on surveillance during the recent rapid assessment exercise to determine the presence of Chalara in the wider environment. This forms an important part of the overall evidence base.

Wider tree health and plant biosecurity research

The amount spent on plant health research has increased owing to the injection of £8 million by Defra in support of the Tree Health and Plant Biosecurity Action Plan from 12/13—16/17, and the fact that FC have increased the proportion of their research budget to be spent on plant health

The Chalara science workshop (held on 13th December) identified priority areas for research in detection, aetiology, pathology, epidemiology, impacts, mitigation and adaptation and will be used to inform the new Defra Tree Health and Plant Biosecurity evidence plan and Phase 2 of the Tree Health and Plant Biosecurity Initiative under the Living with Environmental Change (LWEC) Partnership. Defra has committed a total of up to £4 million from the Tree Health and Plant Biosecurity Action Plan funding to this LWEC initiative between 12/13 and 16/17.

The aim of the Tree Health and Plant Biosecurity Initiative is to generate new scientific knowledge to inform the development of innovative ways of addressing current and emerging threats to trees and woodland ecosystems from pathogens and pests. The initiative is intended to facilitate collaboration between specialists in tree or forest research and leading-edge scientists from the wider natural, biological, social, economic or other relevant research communities who have expertise which could be brought to bear on research in this area. The scope of the initiative includes trees in forest, woodland and urban environments and of commercial, environmental and social value, as well as related plant biosecurity.

Defra will also fund a pilot project this financial year to accelerate development of ObservaTREE—a Forest Research-led bid for EU Life+ funding to develop an integrated Tree Health Early Warning System using volunteer groups. The pilot project will focus on establishment and testing of Information Communications Technology infrastructure and developing a cadre of champions, who are linked to the communications network. This study is linked to the potential EUPHRESCO International Plant Sentinel Network, which will provide a wider international element and additional early warning. This would build on the current Fera-led project on "Future Proofing Plant Health".

Defra is a funding partner in a potential EUPHRESCO transnational research topic on "diagnostics and risk management for plant health threats in wood chips and bark for bio-energy imported from other continents".

Fera is conducting a review Australian and New Zealand plant biosecurity as part of their wider review on cost sharing in plant health. The objectives of this review are to consider the performance of the Plant Health Australia programme and the New Zealand system over the last five years to assess what has worked well and less well, why this is the case, and to what degree are any lessons learned transferable to the UK. This Fera project was commissioned with a view to providing a brief, rapid assessment of information available that can be fed into a larger review of cost sharing being considered for commissioning in 13/14.

3. *What advice was given to those importing, selling or planting ash trees in the period between first detection of Chalara in the UK in March and the ban on imports/movements coming into force on 29 October 2012? Were any ash plants imported in this period and, if so, were any infected plants detected in imports occurring in this period?*

Details of this interception were published on the Food and Environment Research Agency website on 17 April 2012, and a pest alert on the situation regarding Chalara fraxinea was posted on the Forestry Commission website on 16 May (the chronology in the earlier note incorrectly identified this alert as being on the 3 April, which was the date Ministers were informed). The pest alert indicated that the risk of disease spread is most likely to be via the movement of diseased ash plants. Practitioners who have been involved with recent imports were encouraged to carry out inspections of their trees and report symptoms if found.

A Q&A was made available on the Forestry Commission website, and included the message "Be careful about the sourcing of, and the specification for, your plants. Keep good records of any imported stock, remain vigilant, inspect any recent plantings of ash, and report any suspicious signs to Fera or the Forestry Commission."

A number of meetings with industry representatives were attended by plant health officials from the Forestry Commission to provide them with the latest information, and suggest how plant movements might be better controlled in the future. The possibility of a ban on movement of ash plants was raised in these meetings.

A series of press releases shown in the table below provided updates to stakeholders as information about the disease progressed.

Defra	Government bans imports of ash trees	29 October 2012
Forestry Commission	Government restricts imports of ash trees to tackle disease	29 October 2012
Forestry Commission	Efforts stepped up to tackle disease of ash trees	24 October 2012
Defra	Government looking at banning imports of ash trees	4 October 2012
Forestry Commission	Government considers ban on ash tree movements	4 October 2012
FC Wales	Ash tree checks under way in bid to keep disease out of Wales	26 September 2012

Forestry Commission & Fera	Forestry Commission and Fera welcome call for moratorium on ash tree imports in bid to control disease	21 September 2012
Forestry Commission	Consultation launched on risk assessment for Chalara dieback of ash trees	7th September 2012
FC Scotland	Alert re-issued as ash tree disease found in Scotland	21 August 2012
Forestry Commission	Woodland biosecurity guidance published	1 August 2012
Forestry Commission	Alert for serious disease of ash trees	16 July 2012

The main trading period for ash trees is November–February and whilst it is unlikely there were imports after infection was detected it cannot be stated categorically that no trees were imported as ash is an unregulated genus with no notification requirements. From inspectors' reports of inspections at nurseries where infected trees were found on site, following targeted surveillance since the first find, all deliveries pre date the first finding of Chalara.

January 2013

Fourth written evidence submitted by Defra

Introduction

1. This is a joint submission by Defra and the Forestry Commission in response to the questions identified by the Committee for its inquiry into tree health and plant biosecurity.

Q1—*Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?*

2. The responsibilities of public agencies for plant health are set out in the Plant Health Act 1967,[1] which splits responsibility in England between the Forestry Commission and Defra (who delegate responsibility for plant health to the Food and Environment Research Agency (Fera)). The Plant Health Act 1967 prescribes the Forestry Commissioners as the competent authority in Great Britain for the protection of forest trees and timber, although the Act does not define "forest trees".

3. The Forestry Commission monitors forest tree health, at a national level, for quarantine pests, in accordance with EC Directive 92/70/EEC. More generally it monitors the condition of woodland trees as part of the National Forest Inventory and through reports to the Tree Health Diagnostic and Advisory Service. Whilst there is no legal definition of "forest trees" the Forestry Commission's remit, has through custom and practice, been interpreted as including at least those tree and shrub species for which the Forestry Commission would pay grant aid[2] for woodland creation and regeneration.

4. Forestry is a devolved matter. The Secretary of State for the Environment, Food and Rural Affairs has responsibility for forestry in England as well as certain activities such as international affairs, which are reserved. Responsibility for forestry in Scotland lies with the Scottish Government and in Wales with Welsh Ministers. Separate arrangements apply in Northern Ireland covered by the Plant Health Act (Northern Ireland) 1967.

5. The Department for Environment, Food and Rural Affairs (Defra) co-ordinates plant health policy across the UK and Crown Dependencies and represents the UK as the "Single Central Authority" under the EU Plant Health Directive. Defra is also the contact point for the UK "National Plant Protection Organization" under the International Plant Protection Convention. These responsibilities were delegated to Fera, but, as a first step towards improving plant health governance, we have decided to bring plant health policy closer to the heart of Government. As a result, the Plant Health Policy Team in Fera (which carries out much of the co-ordinating role) transferred to Defra on 31 December 2012.

6. Fera implements plant health policy in England and (through a concordat with the Welsh Government) Wales. Fera Inspectors carry out inspections of plants (including trees) and produce imported from non-EU countries, and targeted monitoring of plants (including trees) moving within the Single Market. Fera scientists carry out assessments of risk to plant health (other than forest trees), diagnosis of pests and pathogens, and research on risk assessment, detection, diagnosis and control. A concordat signed in 2011 between Forestry Commission and Fera sets out the way the two organisations work together, including in outbreak situations.

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[1] (1) This Act shall have effect for the control of pests and diseases injurious to agricultural or horticultural crops, or to trees or bushes, and in the following provisions of this Act—
(a) references to pests are to be taken as references to insects, bacteria, fungi and other vegetable or animal organisms, viruses and all other agents causative of any transmissible disease of agricultural or horticultural crops or of trees or bushes, and also as including references to pests in any stage of existence;
(b) references to a crop are to be taken as including references to trees and bushes.
(2) The competent authorities for purposes of this Act shall be—
(a) as regards the protection of forest trees and timber from attack by pests, the Forestry Commissioners ("timber" for this purpose including all forest products); and
(b) otherwise, for England and Wales the Minister of Agriculture, Fisheries and Food and for Scotland the Secretary of State.

[2] Publicly funded support under the Rural Development Programme.

7. Pest or disease outbreaks are the joint responsibility of FERA and Forestry Commission with roles agreed based on where the sites are and what resources and capability are required to deal with the outbreak. Surveillance for harmful organisms of trees in the wider environment including street trees, public parks and gardens responsibility is shared between Forestry Commission (where there is a threat to forests or woodland), Fera, Local Authority tree officers, landowners and managers, and householders.

8. Although the statutory plant health services have lead responsibility, a key element of the Tree Health and Plant Biosecurity Action Plan is the engagement of statutory conservation bodies, industry sectors, NGOs, local authorities, landowners and the general public in reporting new pest and disease outbreaks and helping to manage them.

9. The separation of responsibility for forest trees and plant health and the risk of inconsistent strategies amongst Devolved Administrations led the Tree Health and Plant Biosecurity Expert Taskforce to suggest in their interim report that plant health governance is reviewed, simplified and strengthened, and that a UK-wide strategy in identifying and managing threats will be essential. Sir John Beddington and Defra have warmly welcomed the interim report. The taskforce will meet again in January and February 2013, and a final report will be published in the spring.

Q2—*Are the Defra, Forestry Commission and Food and Environment Research Agency (Fera) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?*

10. To address the risks posed by forest tree pests and diseases without imposing unnecessary burdens on industry, a risk based approach is employed. The Risk Management Framework is based on the Food and Agriculture Organization/International Plant Protection Convention's (IPPC) recommendations set out in International Standards for Phytosanitary Measures (ISPMs). Pest Risk Analysis (PRA) is the process used to determine whether an organism is a potential quarantine pest or a Regulated Non Quarantine Pest.

11. The Forestry Commission in their 2011 Tree Health Strategy identified that being able to respond to any new pest quickly is essential to ensure the eradication of that pest. With this in mind, that strategy included a generic contingency plan which was supplemented by a suite of pest-specific plans based on pest risk assessments (there was no specific contingency plan for Chalara as it did not have a pest risk assessment at that point). The purpose of the contingency plans is to provide an operational framework to ensure that any outbreak of a potentially serious tree pest is managed consistently and rapidly, first to contain and if possible to eradicate the pest.

12. The suite of pest-specific Contingency Plans were prepared by the Forestry Commission's GB Plant Health Service for all of the forest tree pests and diseases listed in the Schedules to the Plant Health (Forestry) Order 2005, and are based on PRAs prepared by European experts, including pathologists or entomologists in Forest Research and published by the European Plant Protection Organization (EPPO). The plans provide a clear and consistent approach to addressing forest tree pest or disease threats when an outbreak occurs. The plans date from 2008–09 and are in need of refreshing to reflect recent organisational changes and should be maintained to keep them up to date for the future. A Risk Management Workstream operates a process to prioritize the review and update of contingency plans and to monitor progress against agreed actions (paragraph 19).

13. The generic contingency plan can be adapted to respond rapidly to the appearance of any new forest tree pest or disease not covered by a pest-specific plan. Having a contingency plan ready allows rapid response especially where a number of different parties are involved, which can include other government departments, local government authorities, industry sectors and other commercial bodies. As there was no specific contingency plan available for Chalara, the process outlined in the generic contingency plan[3] was used.

14. In addition to these existing plans the interim Taskforce report proposes that draft generic plans for novel types of threats (eg insect pests, Phytophthora fungi etc) should be prepared. These contingency plans need to take account of stakeholders views through consultation and ahead of any incursions. These plans should also be shared amongst other European countries.

15. When the first findings of Chalara in mature trees were confirmed on 22nd October, the response was expanded and put onto an emergency footing. An unprecedented rapid survey by Forestry Commission was commenced with around 500 staff a day being mobilised and around 2,500 ten kilometre squares being covered. This found that the pathogen was present in the wider environment, and marked a step change in the approach to surveillance of the disease. Whilst acknowledging the effort which went into this response the interim report of the Tree Health and Plant Biosecurity Expert Task Force identifies that there is a much greater sophistication in the preparedness for emerging livestock disease compared with plant disease.

16. The Taskforce interim report identifies that in order to be prepared to manage an outbreak robust data on the host distribution is vital and assurance is required that there is the capacity to model epidemics. Gaps in knowledge (eg taxonomy) and resources (eg rapid molecular diagnostic tests) should also be identified and consideration given to commissioning research to address them. We are currently setting up single tenders for

[3] http://www.forestry.gov.uk/pdf/TH_Strategy_Annex2.pdf/$FILE/TH_Strategy_Annex2.pdf

research on Chalara, and another single tender for future plant pests with FERA. This would include the emerald ash borer, bronze birch borer, and Asian longhorn beetle.

Q3—*How effective is co-ordination between agencies such as Natural England, the Forestry Commission and Fera?*

17. The interim report of the Tree Health and Plant Biosecurity Taskforce highlights that there are good working relationships between the different organisations when responding to pest and pathogen incursions. For example action this summer against an outbreak of Asian longhorn beetle in Kent involved Forestry Commission, Forest Research, Fera and local authorities, as well as stakeholder groups and the affected householders. Organisations contributed according to their expertise and capability and issues around remit did not get in the way of an effective response. We are cautiously optimistic that the outbreak has been eradicated.

18. There are formal governance arrangements in place to ensure effective co-ordination of plant health bodies. However the Taskforce identified, based on recent experience with the management of tree disease, that making governance work more effectively is necessary to eradicate or reduce the spread of pests or pathogens in future. The interim Task force recommendations include looking at a revised role for various bodies that focus on biosecurity, and how they fit into a strengthened governance structure for tree health and plant biosecurity to ensure national GB co-ordination over forest tree pests and diseases.

19. A UK Plant Health Strategy Board was established in 2011, under Defra chairmanship, comprising senior representatives from Forestry Commission, Fera, Devolved Administrations and the JNCC. It is responsible for co-ordinating UK strategy in international plant health negotiations. It has also taken on oversight of groups carrying out more detailed co-ordination, including the monthly Risk Management Workstream, which was previously an internal Fera body. A UK Plant Health Advisory Forum has also been established, bringing together 14 stakeholders representing growers, traders, environmental and horticultural organisations concerned with plant health.

20. Forestry Commission has set up a GB Biosecurity Programme Board[4]. The Board includes representation from the forest industry, Fera, the Scottish Government, and Welsh Assembly and oversees development and delivery of Forestry Commission's approach to tree health. It also provides a strategic overview of Forestry Commission's approach to tree health and biosecurity, to assist the Commission in meeting its objectives.

21. Pest-specific programme boards and outbreak management teams are used to coordinate the activities of different stakeholders at an operational level and these report to the GB Biosecurity Programme Board as required. A member of Forestry Commission's Biosecurity Programme Board sits on the UK Plant Health Advisory Forum. FC's head of plant health attends both groups to further strengthen co-ordination.

22. Fera and Forestry Commission have a concordat signed in 2011 which sets out how they can both maximise the value from their collective capacity both in research and to protect the phytosanitary position of the UK. Fera, together with the Devolved Administrations, Crown Dependencies and Forestry Commission form the UK Plant Health Service.

23. Natural England (NE) is involved where relevant in plant disease outbreaks. In most cases this coordination is achieved through involvement in the Outbreak Management Teams (OMT). For an outbreak of *P. austrocedrae* Natural England chaired the OMT, with representation on the group from FERA and FC, due to the original outbreak occurring on a nature reserve. For Chalara NE involvement in the rapid survey was as a result of a direct request to the organisation from FC but NE also sit on the OMT and contribute to the work on Chalara and work with FC and FERA through that group.

24. The value of having good co-ordination between Forestry Commission, Fera, and Natural England, is that they each bring unique expertise to the issue, they have differing perspectives which produce more effective strategy, and they have strong links to their own research, policy, and operational activities. This has proved to be particularly effective in tackling the recent outbreak of Asian longhorn beetle and has also contributed to progress on the Phytophthora programme which is currently being reviewed and evaluated. (see paragraph 32 below)

25. As a first step towards improving plant health governance we have decided to bring plant health policy closer to the heart of Government. To support that, on 31 December 2012, the plant health policy team currently located in Fera transferred to Defra. The UK Chief Plant Health Officer also transferred to Defra from the same date. As plant health is a devolved matter, the policy team and the Chief Plant Health Officer will work closely with the devolved administrations in Scotland, Wales and Northern Ireland.

Q4—*Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats?*

26. The table below includes funds spent by Defra and Forestry Commission over the past five years on plant health research, and that planned up to 2014–15. This is a complex area with funding coming from a number of sources.

[4] Northern Ireland has observer status on the Board.

27. While the overall total budget on forestry research will decrease over this period the amount spent on plant health research will increase owing to the injection of £8 million in support of the Tree Health Action Plan, and the fact that Forestry Commission has increased the proportion of their research budget to be spent on plant health.

28. The Core Defra Plant Health R&D includes a figure of £600k per annum for Bee Health and pollination research.

29. There is a further £2 million allocated under the Tree Health and Plant Biosecurity Action Plan which will be committed in 2015–16. This was approved exceptionally as it attracted additional funding of up to £4 million from research councils under the Living with Environmental Change (LWEC) initiative. Forestry Commission will also be contributing an additional £0.5 million over the life of the LWEC initiative.

	08/09	*09/10*	*10/11*	*11/12*	*12/13*	*13/14*	*14/15***
Core Defra Tree Health and Plant Biosecurity Action Plan*	N/A	N/A	N/A	N/A	2	2	2
Core Defra (managed by Fera) Plant Health Research	1.3	1.4	0.7	2	1.6	1.4	1.3
Forestry Commission Plant Health Research	1.5	1.4	1.4	1.7	2	2.3	2.1
Total Defra Research spend (£m)	2.8	2.8	2.1	3.7	5.6	5.7	5.4

*published October 2011

**Please note: Defra budgets for 13/14 and beyond are indicative and may increase or decrease to ensure evidence resources remain aligned and responsive to policy needs.

30. Forestry Commission funds its Forest Research agency to provide timely and responsive evidence relating to the threats posed by forest tree pests and diseases. This evidence provides support for the whole UK forestry sector. The Forest Research programme addressing the current major pest and disease threats faced at the moment has three elements:

- Pest or pathogen-specific research to provide evidence and management solutions for damaging or potentially high risk disorders.
- The Tree Health Diagnostic and Advisory Service, which includes acting as first point of contact for reports of tree ill-health, providing advice and topical information on forest tree pests and diseases, underpinning tree health surveillance, conducting formal pest risk analysis and knowledge transfer in relation to national and international plant health regulations.
- Strategic research to predict the likely effects of new forest tree pests and diseases, which includes modelling the impact of climate change on existing pests and pathogens.

31. We are currently funding a major programme to address the threat posed to forests, historic gardens and heathland by *Phytophthora ramorum* in England and Wales. This £23 million, five year, programme (which includes some £4 million pre-existing activity) is managed by Fera, and will conclude in 2014. A review is currently underway which will report in February setting out recommendations for follow up. The review is concentrating on; Programme delivery; Research—particularly in respect of further needs; Overall view of the Programme and recommendations for further action.

32. Research to combat tree disease and pests is also funded by the EU, often as co-funding which supplements UK funding (shared cost programmes) and also to encourage co-operation of research effort across member states (eg COST[5] actions, INTERREG[6] funding and the EUPHRESCO[7] programmes). Forest Research is a partner in the EUPHRESCO research co-ordination programme, which is led by Fera and brings together research programme owners/managers from 22 European partner countries to optimise the use of limited resources via trans-national research commissioning.

33. The UK Research Councils, other Government departments, the forestry sector and charities also fund research which has synergies with the plant health research programmes funded by Defra and the Forestry Commission.

Q5—*Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?*

34. Evidence Plans are the mechanism for coordination of the research effort on tree health and plant biosecurity and are an integral part of Defra's business planning. Evidence is defined as "reliable and accurate

[5] COST is an intergovernmental framework for European Cooperation in Science and Technology, allowing the coordination of nationally-funded research on a European level. www.cost.esf.org

[6] INTERREG IIIC is an EU-funded programme that helps Europe's regions form partnerships to work together on common projects. By sharing knowledge and experience, these partnerships enable the regions involved to develop new solutions to economic, social and environmental challenges. www.interreg3c.net

[7] EUPHRESCO aims to increase cooperation and coordination of national phytosanitary (statutory plant health) research programmes at the EU level through networking of research funding activities. www.euphresco.org

information that Defra can use to support sound decisions in developing, implementing, and evaluating policy".[8] It includes economics, statistics, social, veterinary and natural scientific information, operational research, analysis (by internal or external experts), advice (including from advisory committees), monitoring, surveillance and research. Plant health evidence governance arrangements are being reviewed in light of the Tree Health and Plant Biosecurity Expert Task Force's recommendations. Evidence Plans covering plant health are currently being updated; they set out current and future evidence needs and how these align to policy outcomes.

35. There is close cooperation among governmental and non-governmental bodies working on plant health Evidence Plans in the UK. In the UK, Defra, Forest Research and Fera colleagues work closely to make the best use of the resources available. Defra coordinates the commissioning of research projects in support of the Tree Health and Plant Biosecurity Action Plan and Evidence Plans with Fera and Forestry Commission to ensure that research in this area is joined up and coherent. There are a number of universities which undertake work into tree and plant health, such as Cambridge, Imperial, Aberdeen and Exeter. Expertise also exists at research institutions, such as East Malling and the John Innes Centre.

36. The recent outbreaks of *Phytophthora ramorum* and *Chalara fraxinea* have required interdisciplinary co-operation to ensure that modelling, epidemiology, and diagnosis are co-ordinated in management planning. The availability, over the long term, of skills in this area has tended to reflect the research funding available and action, as mentioned above, has been taken to enhance this by both Defra and Forestry Commission. The LWEC initiative is supported by some research councils, such as BBSRC, and NERC, and their engagement with tree and plant health should help to support the development of new skills and capacity for the future. This will help to address the erosion of skills and capacity which has occurred over the last decade reflecting an earlier decline in university courses, research and career opportunities in plant pathology.

37. EU funded programmes, such as EUPHRESCO, FRAXBACK, and PERMIT support the exchange of knowledge across Europe. Other European countries face many of the same problems as the UK, and this European funding helps to leverage both the resources and the skills available within the UK.

38. Tree health and plant biosecurity is a complex issue, and while new research funding and capacity can always be employed to good effect, Defra and the Forestry Commission are keen to engage wider society in supporting our efforts to improve the UK's biosecurity. To this end, the Chalara control plan identifies that we will be looking increasingly to utilise citizen science to best effect to help identify and combat plant and tree diseases. Defra will fund a pilot project this financial year to accelerate development of ObservaTREE—a Forest Research-led bid for EU Life+ funding to develop an integrated Tree Health Early Warning System using volunteer groups. The pilot project will focus on establishment and testing of Information Communications Technology infrastructure and developing a cadre of champions, who are linked to the communications network.

39. In addition, Fera has been working with the parks and gardens sector on a "train the trainers" initiative aimed at equipping those who train people working in the sector to spot plant pests and diseases. We will build on this and work with the Forestry Commission to extend this concept to provide an "early warning network" for tree pests and diseases. This network could include a group of competent and trained stakeholders to operate a network of between 10–20 Genie LAMP assay machines to diagnose Chalara and other diseases.

40. These up skilling exercises will assist in creating a wide network of individuals able to indentify plant pests and diseases. In addition the Forestry Commission has actively developed relationships with a range of universities through co-financing, co-supervising or hosting PhD studentships. Up to 30 studentships have been supported at any time, although not all of those are dedicated to plant health. Forest Research currently host, co-host or co-supervise 7 PhD students and 1 MSc student on plant health research. In addition from March 2004 six plant health taxonomic studentships have been commissioned by Fera to underpin policy by ensuring that expertise in plant pathology is maintained and developed. These studentships commonly adopt molecular approaches and have covered a wide range of organisms including *Phytophthora* species and nematodes.

41. The interim report of the Tree Health and Plant Biosecurity Expert Task force highlighted the fact that "there has been an erosion of skills and capabilities, in the UK and internationally, to deal with tree and plant disease at different scales, as well as some of the underpinning natural and social science essential to inform and implement policy." The Taskforce also identified that whilst some issues can be addressed with the existing skills base others will require a more long-term strategic review involving the Research Councils, Higher Education Institutes as well as government. Defra will be commissioning a review on capacity and capability on plant health.

Following further analysis, the Task Force will produce a final report addressing all of its aims in spring 2013. This is expected to:

- review the national and international risks and the evidential basis for the effectiveness of response options;
- develop work to provide an independent perspective on costs and benefits to inform setting priorities and resource allocation around tree and plant health;
- review best international practice in tree health and plant biosecurity management; and

[8] http://www.defra.gov.uk/publications/2011/04/08/pb13346-evidence-investment-stategy/, p.4.

— produce a strategic evidence assessment and make recommendations for next steps including developing crucial knowledge gaps.

Q6—*Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls?*

42. In developing policy the UK must consider our international obligations under the Sanitary and Phytosanitary Agreement (SPS), which is binding on all member countries of the World Trade Organisation and those in the International Plant Protection Convention (IPPC). The rules of international trade, as set out in the SPS, allow countries to set their own standards, but state that regulations must be based on science. They should be applied only to the extent necessary to protect human, animal or plant life or health. And they should not arbitrarily or unjustifiably discriminate between countries where identical or similar conditions prevail.

43. The SPS explicitly permits governments to choose not to use the international standards. However, if the national requirement results in a greater restriction of trade, a country may be asked to provide scientific justification, demonstrating that the relevant international standard would not result in the level of health protection the country considered appropriate. Countries must establish SPS measures on the basis of an appropriate assessment of the actual risks involved, and, if requested, make known what factors they took into consideration, the assessment procedures they used and the level of risk they determined to be acceptable. This is generally achieved through Pest Risk Analysis (PRA) prepared following the guidelines set out in the relevant International Standards for Phytosanitary Measures.

44. The UK plant health policy team (previously in Fera, now in Defra) negotiates in Europe on the EU plant health regime. The EU's Standing Committee on Plant Health determines which pests should be classified as quarantine pests or regulated non-quarantine pests, and the special requirements to be taken to prevent their introduction and spread. Under Article 16 of the Plant Health Directive Member States have the right to introduce national legislation if there is a specific threat that is not controlled effectively through EU legislation. The Plant Health (Forestry) Order 2005 allows statutory control measures to be put in place at an early stage. This approach has already been taken in the case of certain insect pests like Oak Processionary Moth to create a protected, or pest free, zone.

45. Any changes to the pest list, or the special requirements to be met before regulated plants, plant products or other objects may be landed, are set out in the EU Plant Health Directive, and these are usually triggered either by import interceptions of new pests by a Member State, or EPPO alerts.

46. Under the EU Plant Health Directive, there is generally free trade in plants for planting between Member States. Specific measures may be required against identified risks, for example there may be a requirement that the plants must come from a disease free area or from a disease free place of production. In the case of plants from other continents, there is a greater risk from pests and pathogens which may be much more damaging away from their region of origin. In this case the risks are difficult to predict or assess. If infected plants are imported into the EU and infection is not detected at import, such plants can be transported across the EU. While monitoring occurs the high volume of plant trade means that 100% inspection of intra-EU movements is neither feasible nor practical, so protection for the UK against risks from non-EU countries depends on an effective EU plant health regime of import requirements and controls. For imports from non-EU countries to the EU, there are therefore a number of general requirements to reduce the risk from those unknown or unlisted pests. The adequacy of those requirements, in relation to new trades, will be considered in the forthcoming review of the EU regime.

47. The Common Plant Health Regime (CPHR) aims to protect the EU against the harm caused by the introduction and spread of harmful organisms. The regime dates from 1977 and the UK Plant Health Service has been instrumental in getting a review of the regime initiated. The European Commission are carrying out this review, with a proposal to be published this year. As part of this work they have undertaken a preparatory evaluation of the current EU framework which has concluded that the main problems with the current regime are:

— Insufficient focus on prevention in relation to increased imports of high risk commodities.

— A need for prioritising harmful organisms at EU level across all Member States.

— A need for better measures for controlling the presence and natural spread of harmful organisms which manage to enter the Union territory.

— A need for modernising and upgrading the measures concerning the phytosanitary control of intra-EU movements (plant passports and protected zones).

These findings will be taken on board in the review. The outcome of the review will be new EU Plant Health legislation, to replace the current Directive.

48. Following earlier engagement with UK stakeholders a number of key points were agreed which the UK wished to see addressed in the review. These fall into three priority areas:

- Faster decision making as plant health risks change and new pests arrive.
- Better risk targeting, including regionalisation where appropriate, and a shift of inspection effort from plant produce to plants and propagating material (including addressing threats from new and emerging trades).
- More co-operation between plant health inspectorates across the EU and between plant health and customs services.

49. Proposals for changes to the regime are expected in March 2013.

Q8—*Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?*

50. The scope of the EU Plant Health Directive extends to all plants and plant products. The definitions of "plant" and "plant products" in the Directive cover the range of material most likely to sustain harmful plant health organisms, including trees, wood and unprocessed wood products. Biomass material imported for fuel or other use is subject to the requirements of the Directive in the same way as plants and plant products imported for other purposes. Whilst liquid biofuels or refined solid biofuels such as wood pellets and charcoal will provide no risk relating to the importation of plant pests,[9] some wood or wood products (eg chips) used as biofuel may pose a risk and such risks are assessed (along with other pathways) as part of the Pest Risk Analysis (PRA) process for specific organisms.

51. The PRA provides the scientific basis upon which most plant health legislation is based. Where a risk is identified associated with a particular commodity or plant species, specific requirements are introduced, which range from an import prohibition to measures which must be applied before exports can take place to the EU. For example, trade in ash chips from countries where the damaging wood boring beetle—Agrilus planipennis (the Emerald Ash Borer)—is present, can only take place if the chips originate from a Pest Free Area or are processed into pieces not bigger than 2.5cm, which has been shown to destroy the larvae.

52. Where a decision is taken to regulate imports of a particular commodity, they must be accompanied by a phytosanitary certificate to confirm that the prescribed requirements have been complied with. The phytosanitary checks that are made on imports of controlled wood used as biofuel are similar to those applied to other controlled wood products. These consignment checks include an examination of the accompanying phytosanitary documentation; a check on the identity of the material declared and, where required, a physical inspection to ensure that material is free from pests and diseases and complies with specific landing requirements.

53. Globally, National Plant Protection Organisations (NPPOs) recognise the threat from various pathways, including wood and wood products. Wood packaging is also an important pathway, linked to the movement of certain pests, such as Anoplophora glabripennis (the Asian Longhorn Beetle). An international approach in which all wood packaging material worldwide is subject to prescribed universal measures to prevent pest transport has been agreed in an International Standard for Phytosanitary Measures, ISPM No. 15. Implementation of the procedures necessary to ensure that UK-manufactured wood packaging material meets this Standard is overseen by a joint FC/industry Advisory Council with representation from the Forest Service of the Northern Ireland Department for Agriculture & Rural Development.

Q9—*What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example on trade in plants, management of infected trees including saplings, and development of resistant trees?*

54. We are ensuring that we are learning from the experience on mainland Europe, where they have been dealing with this disease for a few years now. We have engaged with the Chief Plant Health Officers (COPHS) group of the European heads of plant health to gain a Europe wide perspective. The UK is also a member of FRAXBACK, an EU funded COST (European Cooperation in Science and Technology) action aimed to generate comprehensive understanding of Ash dieback through sharing and synthesis of available knowledge. FRAXBACK has 26 partners from across Europe and China, Russia and New Zealand. UK plant health scientists attended the most recent FRAXBACK meeting in Vilnius which took place in November 2012.

55. The UK, through Forest Research, also leads on another COST action, PERMIT, which is providing a structured means both to address and reduce the risk of pathways of global pest movement. This work extends beyond, but is complementary to, the current phytosanitary procedures.

56. On 2 November, Forestry Commission's Director General wrote to forestry contacts across Europe to seek information on ash dieback, and management approaches. As of 15 November 2012, 14 countries had responded. As well as drawing on expertise from international plant health experts, we put out an urgent call for information to UK embassies across Europe. They have come back to us with a range of information, including on other countries' experience of tackling Chalara, scientific papers and the names of experts. We have also been liaising closely with other Member States through the Standing Committee on Plant Health,

[9] FAO 2011 Guide to implementation of phytosanitary in forestry, Forestry Paper 164

including presenting the current UK position and future plans to the Standing Committee on 22 November 2012.

57. There is a requirement to notify new pest outbreaks within the EU and also to notify any interceptions of forest tree pests and diseases on material within the EU and from third countries. Representatives from Fera, accompanied by Forestry Commission when forestry items are on the agenda, attend the monthly meetings of the European Union Standing Committee on Plant Health. These meetings provide a forum to raise awareness about new threats and to take forward emergency measures and legislative change where this is required. However no other EU Member State (except Ireland which has recently taken emergency measures) has attempted to carry out statutory controls against Chalara, and there is a recognition across Europe that lessons need to be learned from the experience of the rapid spread of Chalara, and the delay in identifying the organism responsible and carrying out a risk assessment.

58. Within the IPPC network, nine Regional Plant Protection Organizations have been set up, covering areas with similar climatic and other features. The UK is a member of the European and Mediterranean Plant Protection Organization (EPPO), which has 50 members covering all EU Member States and most other countries of the European and Mediterranean region. EPPO has produced a large number of standards and publications on plant pests, phytosanitary regulations, PRAs and plant protection products, which can be found on their website.

59. The UK participates in a number of Technical and other panels set up within the IPPC/EPPO framework. In addition, the UK plant health authorities monitor the pest alerts published at frequent intervals by EPPO and some other Regional Plant Protection Organizations as part of the horizon scanning process and, where appropriate, conduct PRAs in order to determine whether our import controls need to be adjusted, advising the European Commission and the member states accordingly.

60. Forestry Commission's research agency (Forest Research) has a number of international partnerships. It takes a lead in both the International Union of Forest Research Organizations (IUFRO[10]) and the European Forest Research Institute (EFI[11]), and is commonly sought as a partner in EU and world-wide research and cooperation initiatives. This provides a valued level of awareness of pest and pathogen problems in other countries, including those which would flourish if they arrived in the UK and others whose range is currently expanding towards the UK (eg Pine Processionary moth, the Emerald Ash Borer, and Chestnut Blight).

January 2013

Written evidence submitted by the Horticultural Trades Association

The Horticultural Trades Association represents the majority of the UK's ornamental horticulture and gardening industry, including a wide range of growers, retailers, landscapers, manufacturers and service providers. The industry has an annual turnover of £9 billion and provides 284,000 jobs in about 30,000 businesses across the UK.

Plant health is fundamental to the industry's viability, and the HTA welcomes this opportunity to provide evidence to the current Select Committee Inquiry. We have provided answers in the same order as the questions posed in the call for evidence:

Q1. *Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?*

A1. No. It is unclear who has national responsibility for tree and plant health policy. The Chalara outbreak exposed a lack of definition over the roles and responsibilities of the plant health authorities. The first identification of the disease was by a vigilant HTA nursery which raised their concerns to their FERA inspector. Four months later, FERA issued a press release on the finding. However, as the emergency situation developed, the Forestry Commission became the acknowledged single source for up-to-date information on Chalara.

We further believe this is not the first example of this lack of clarity. When Oak Processionary Moth was found in London, there was a lack of clarity for stakeholders as to where responsibility for action lay, whether with the Plant Health and Seeds Inspectorate or Forestry Commission.

The interaction between central Government and the Devolved Administrations also gives cause for concern when there is the distinct possibility of different policies and measures between England and Scotland in particular. This could lead to unnecessary bureaucracy on the trade.

[10] IUFRO is a non-profit, non-governmental international network of forest scientists, which promotes global cooperation in forest-related research and enhances the understanding of the ecological, economic and social aspects of forests and trees. www.iufro.org

[11] The European Forest Institute is an international forest research network organisation established by European States. www.efi.int/portal/

Q2. *Are the Defra, Forestry Commission and Food and Environment Research Agency (Fera) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?*

A2. We are not privy to the contingency plans mentioned, but we would comment that the co-ordination of the response to the outbreak was reasonably well organised and managed given the situation. However, the failure within the system was that the HTA first alerted the plant health authorities to the dangers of the disease in 2009. When science caught up with the disease in 2010, contingency measures should have been taken then to mitigate the impacts of any UK outbreak, including direct communication with industry. Swifter action should also have been taken following the confirmed finding of the disease in March 2012.

Q3. *How effective is co-ordination between agencies such as Natural England, the Forestry Commission and Fera?*

A3. This is difficult to assess from the outside. As indicated above, the more crucial failing is the lack of communication between the plant health authorities and industry.

Q4. *Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?*

A4. No. The emphasis on food security for government R+D funding has created a significant gap in applied research for the ornamentals sector. Ornamentals do not qualify for research funding under the Technology Strategy Board. This has limited the "pull-through" of basic science into practice, and undermined investment and succession planning in key research organisations. The government has allocated £7 million to R&D over three financial years in the Tree Health and Plant Biosecurity Action Plan, but the Chalara outbreak will cost the UK nurseries alone an estimated £2.5 million through redundant stock. The wider socio-economic impacts are still being evaluated, but it is safe to assume that the total cost will be significantly higher. With the ever increasing emergence of new tree and plant health pests and pathogens, we would argue that additional research resources are required to manage future threats.

Q5. *Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, biocontrols and chemical or management responses?*

A5. No. If so, we would not be in the present situation with Chalara, a threat that was identified some years ago. If sufficient resources had been put in at that time, on a co-ordinated international basis, all concerned would have been in a better position to handle the disease once it arrived in the United Kingdom. Recent political moves to reduce the use of plant protection products without providing for alternatives to deal with known threats (let alone new and emerging threats) highlights a further risk to future plant health. This includes a lack of sound science underpinning the rationale for removing PPPs from the market.

Q6. *Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls? Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?*

A6. No. Whilst the international regime for trade provides a framework, it is not sufficiently flexible or responsive to achieve the dual aims of facilitating trade and protecting against the introduction and spread of plant health threats. With the Chalara situation it became evident that there is insufficient flexibility for member states to act to protect their own plant health status. Ash imports continued because this species did not fall within the plant passport system despite the fact that the disease risk was known about by plant health authorities in the UK and the rest of Europe. It is also clear that whilst plant health authorities within the EU may have regular dialogue on plant health, this does not include industry. This lack of communication between the authorities and the trade means the system was heading for failure, despite the fact that industry sought to be proactive and recommended prevention measures in 2009. Plant Health must take action when the industry raises concerns because it is only such action that will change market demand for "risky" species. The UK industry would love to have reduced ash sales earlier and provided alternative species but customers (including the Forestry Commission who continued to specify ash until 2012) continued to specify ash. Nurseries that can't provide product will just be by-passed for nurseries or traders that will.

With the increasing use of biofuels the HTA does not believe that plant health controls are sufficiently broad to respond to that as a potential means of spread of pests and diseases. Anecdotally the HTA understands that significant quantities of cut timber have come in from the near Continent to serve the market for log burners. It is not clear whether these are subject to any controls whatsoever. Equally we are aware that a number of findings of Longhorn Beetles have been associated with wooden packaging material, giving a clear indication that controls in that area are not working.

Q7. *What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example on trade in plants, management of infected trees including saplings, and development of resistant trees?*

A7. As the UK Chalara control plan indicates, there has been little effort by EU member states to control the disease so the opportunity to learn from European partners is limited. Current scientific advice also deems that it is not possible to eradicate the disease. So whilst industry applauds the efforts to develop resistance within the UK native ash population, we have consistently urged caution to ensure that only proportionate and cost-effective action is taken on managing the disease. Despite warning of the dangers of the disease in 2009, industry is now confronted with both the potential loss of an entire crop *plus* destruction costs.

January 2013

Further written evidence submitted by the Horticultural Trades Association

The Horticultural Trades Association represents the majority of the UK's ornamental horticulture and gardening industry, including a wide range of growers, retailers, landscapers, manufacturers and service providers. The industry has an annual turnover of £9 billion and provides 284,000 jobs in about 30,000 businesses across the UK.

Plant health is fundamental to the industry's viability, and the HTA welcomes the opportunity to submit oral evidence to the Committee on 26 June. We provided written evidence to the Committee in January when the inquiry was first launched. Since then, there have been several developments which inform this written update. These include the publication of:

- the Government Policy on Forestry and Woodlands;
- the Chalara management plan;
- the final report of the Tree Health and Plant Biosecurity Expert Taskforce; and
- the European Commission proposals on Plant Health Reform.

All of the above documents indicate that the UK needs to strengthen its biosecurity controls to better protect the UK from future pests and diseases. The HTA fully supports this objective.

In particular, the report of the Expert taskforce makes some key recommendations, as follows:

A. National Context

(i) *Develop a prioritised UK Plant Health Risk Register*

The HTA fully supports this proposal and welcomes the forthcoming workshops to identify the variety of risks across a range of sectors. It is of vital importance that the industry is kept informed of future pests and disease risks, and that there is a single source of reference of the major threats. The register should be reviewed regularly, and should be transparent and readily available. Industry should be represented at all times of the register's development and on-going maintenance.

(ii) *Appoint a Chief Plant Health Officer to own the UK Plant Health Risk Register and to provide strategic and tactical leadership for managing those risks*

Again, we fully support this proposal. As we indicated in our initial written evidence in January, there is uncertainty about the roles and responsibilities for plant health. Appointing a Chief Plant Health Officer with clear responsibilities will remove that uncertainty.

(iii) *Develop and implement procedures for preparedness and contingency planning to predict, monitor and control the spread of pests and pathogens*

The Chalara outbreak provides the necessary evidence that this recommendation should be adopted in full. There was clearly a lack of effective preparation to combat the threat that the HTA first brought to the attention of the Forestry Commission in 2009. In particular, the Chalara experience exposed the lack of an effective communications programme between the plant health science community and industry.

(iv) *Review, simplify, and strengthen governance and legislation*

Nobody objects to stronger and more streamlined plant health controls. However, the key question will be that of resource. The Secretary of State has indicated that the Government will make plant health a much bigger priority than previously. If that is to be the case, Defra or HMT will need to find the funds to pay for more rigorous controls and inspections.

B. International Context

(v) *Improve the use of epidemiological intelligence from EU/other regions and work to improve the EU regulations concerned with tree health and plant biosecurity*

Agreed. It is of vital importance that the UK plant health authorities maintain close cooperation with international analogues, particularly within the EU. The UK's biosecurity is only as strong as the weakest link in the EU, and we support the proposals for greater cooperation and harmonised plant health controls in the new EU Plant Health regime.

(vi) *Strengthen biosecurity to reduce risks at the border and within the UK*

As for v) above. In spite of single market complications, the UK should make use of its natural biosecurity advantage of being an island nation.

C. Capabilities and Communication

(vii) *Develop a modern, user-friendly system to provide quick and intelligent access to information about tree health and plant biosecurity*

The HTA fully supports this proposal. The Plant Health Risk Register should be available electronically, and resources put in place to receive and disseminate information on plant health rapidly.

(viii) *Address key skills shortages*

We touch on the resource issue above. It is an obvious yet welcome recommendation that the plant health authorities are fully resourced, and adequately trained.

The HTA would like to suggest four other specific recommendations that would help significantly improve UK biosecurity:

(a) The forestry grant system should be improved to provide for longer-term planning, funding and procurement cycles, preferably over a forecast 5–7 year period. This would enable landowners and nurseries to contract grow, thereby increasing UK production and decreasing imports and the associated plant health risks. This would be perfectly in line with the Government's policy to protect, improve and expand the UK's forestry and woodlands;

(b) Defra needs to urgently address the void of RDPE grant schemes for the "gap year" in 2014–15, and to plan for future transitional arrangements at the end of future RDPE windows. This can be done, as has been proven in Scotland;

(c) Government should establish and enforce procurement standards to become exemplar clients in terms of contract grown amenity projects, ie learn from the Olympics example and recreate quality landscape schemes for future public-funded projects, eg HS2 ;

(d) It is crucial that the importance of biosecurity is communicated just as firmly to all those involved in the amenity sector as it is to the forestry sector. This includes local authorities, landscape architects, contractors etc, who represent an entirely separate supply chain risk for the introduction of new pests and diseases. Often planting for these contracts is left until the last minute and spot procurement practise is to source the cheapest product, irrespective of quality and provenance.

As a final comment, many HTA members continue to struggle financially because of the government's handling of the threat from Chalara. The UK's £2.5 million ash crop is now redundant. We warned of the dangers of the disease in 2009 but were told that no quarantine measures were appropriate because the disease was already in the UK. We now know the science changed in 2010, but crucially industry was never informed of the new science. Worse still the government continued to specify ash in grant funded planting schemes. Whilst we acknowledge it is long-standing policy not to provide compensation for losses incurred as a result of plant disease outbreaks, we believe the Chalara outbreak represents exceptional circumstances and would expect Government to share the cost and responsibility borne by growers.

June 2013

Supplementary written evidence submitted by Horticultural Trades Association on behalf of Horticultural Trade Association and Confor

The additional evidence below is in response to requests from the EFRA Select Committee for further details following the oral evidence session on 26 June. Specifically, questions relayed by the Clerk of the Committee include:

Views further to the outcome of the Plant Health Risk Register workshops being organised by Fera

Both Confor and the HTA have been impressed by the first phase of this work which has included several day-long workshops with scientists, researchers and practitioners from certain sectors (glasshouse crops, arable and fruit crops, potatoes, forest trees, hardy ornamental and wild plants). The end result will be a comprehensive, prioritised risk register which has assessed approximately 700 pests or pathogens against their likely arrival and level of impact against a spectrum of mitigating actions. Fera expect to formally consult on phase one of the project in the autumn.

Key factors in retaining the function and value of the risk register once published will be:

— to continue to horizon scan for future pests and disease;

— to implement emergency measures when appropriate (protected zone status);

— and to communicate the register in tailored fashion to a wide variety of stakeholder groups (scientists, growers, landowners, landscapers, contractors, local authorities etc).

An understanding of the current spend by their member bodies/the wider industry on research into plant pests and diseases and managing their spread/controlling their impacts

The following statistics refer to research funds for Horticulture, defined as Fruit, Vegetable (excluding potatoes) and Plant Production.

— Total research spend across all horticultural sectors between 2005 and 2012 has gradually decreased from £26 million per annum to £18.5 million per annum (-30%).

— Total government funding (BBSRC, TSB and Defra) has decreased from £17.5 to £9 million (-48%) over this period.

— Defra funding has fallen from £12.24 million to £1.34 million (-89%).

— Total industry funding has increased from £8.7 million to £9.5 million (+8%). Disease.

Industry is defined as the sum of Horticultural Development Company (HDC) levy collection plus any cash/in kind research budgets from larger horticultural companies (excluding the agricultural chemicals industry),

Within the HDC budget of £4 million, only £380k is allocated to hardy Nursery Stock. Of the £380k, the tree and hedging sector has an allocation of just 13%, circa £50k per annum. Given this limited funding, research on quarantine pests and diseases has been minimal, but specific examples include:

— A review of the potential for disease management in forest nurseries using fungicides for Red Band Needle Blight (2010).

— Tobacco whitefly *(Bemisia tabaci)* control on imported poinsettia cuttings.

— Tomato leaf miner *(Tuta absoluta)*—not established in the UK but working on strategies to control it at present.

— Spotted wing drosophila *(Drosophila suzukii)*.

The Horticultural Trades Association has long argued that scientific research and development is absolutely essential to the horticultural sector's future in the face of plant health, pest, disease and other environmental threats. With the recent R&D focus on the food agenda, ornamental horticulture has been neglected despite its wide-reaching contribution to the UK's environment, the economy and the nation's health and well-being.

In March 2013, the Horticulture Innovation Partnership (HIP), was launched by Sir John Beddington, the Government's Chief Scientific Advisor, to bring together industry representatives including growers, policy makers, research funders and providers, suppliers and retailers. The HIP aims to ensure there is an integrated horticulture R&D strategy and approach to the coordination of funding for research on horticulture crops and potatoes and helps to provide a collaborative network to address technological and commercial barriers preventing business development. The sector calls on the Government to maintain its support for the Horticulture Innovation Partnership and encourage new potential funders to become involved so the Partnership has a secure basis to develop its important initiatives for the ornamental horticulture sector.

For the forestry sector, page 24 of *Defra's written evidence* to the Select Committee provided details of research spend between 2008–15.

What is the impact of the Bronze Birch Borer in Russia (referred to in evidence)? What measures are being adopted in other EU member states and the UK to prepare for its possible arrival? Is there good co-ordination with scientists in Russia on the pest and its epidemiology and control?

The HTA have since corrected the evidence provided in the oral session to accurately refer to the reference to the Emerald Ash Borer (rather than Bronze Birch Borer) that has been identified in Russia. The Emerald Ash Borer has caused widespread devastation to the native ash population in the USA and Canada since identification in 2002 after a probable arrival in wood packaging from East Asia. Fera are aware of the threat, but there does not appear to be a current Pest Risk Assessment at either UK or EU level. Neither the HTA nor Confor are aware of the strength of links between the UK and Russian scientific community.

A request for a copy of the organogram referred to on plant health responsibilities in Defra and its arms' length and other bodies

The most recent available organogram is attached at Annex A.

What is the impact of grant cycles on planning for demand for plants/trees and the consequent effect on the level of imports? And more detail on the proposed solutions

The grant system drives the forestry supply market. The problem is that the approvals system is slow and does not allow for multiple year planning. Because of this, UK nurseries typically receive short notice of supply contracts for which they cannot meet all the requirements. In such circumstances, UK nurseries will try to source missing stock from other UK growers, or from mainland Europe if stock is unavailable in the UK.

The solution would be to reform the grant system to develop multiple year plans for forestry planting. This would enable landowners and nurseries to draw up longer term production and supply contracts, thereby increasing UK production and decreasing imports and the associated plant health risks. The same benefits would apply to the amenity sector if the Government established procurement standards to become exemplar clients for contract grown projects as per the stunning example of the Olympic Park, eg future HS2 planting requirements.

There is also an urgent need to adequately address the 'gap year' of forestry grants in 2014–15. The nursery sector is extremely concerned about the impacts of the end of the existing Rural Development Programme budget at the end of 2013. The danger is twofold; firstly that the impending closure of the scheme actually sees it closed much earlier than planned as agents rush to secure the remaining funds and the budget is quickly overcommitted. Secondly, that the resulting hiatus in orders is compounded by the new technological and procedural complexities of the successor RDP budget. This is precisely what happened in 2008, causing a backlog of projects in the system. Nurseries suffered heavy losses and were forced to issue redundancy notices and other extreme measures just to survive, including not sowing crops and sterilising land. Indeed, some nurseries had only just managed to get back to normal production cycles before Chalara hit.

It is therefore essential that arrangements for 2014–15 are clear, visible and carefully managed to avoid similar problems. If not, some UK nurseries will probably fail to survive, thereby reducing domestic production and increasing the level of imports.

July 2013

Annex

DECISION MAKING AND CONSULTATIVE BODIES FOR UK PLANT HEALTH

Background

The attached diagrams show past (2010) and present state of the committees and other groups making decisions or influencing decision making on UK plant health. These are groups which have agreed terms of reference, meet and record decisions and actions. Meetings which are internal to a team or organisation are not shown.

Additions to the Landscape

The proposal shows two recent additions. Firstly a plant health advisory forum of stakeholders, serviced and chaired (at least initially) by Fera. The forum subsumed the work of an ad hoc stakeholder group on review of the EU plant health regime. Advice from that forum can now be included in submissions to Ministers. Secondly a UK plant health strategy board, chaired by Defra, with representation from Fera, FC and DAs. This subsumed the work of the inter-departmental programme board for Phytophthora, and oversees delivery of the Action Plan on Tree Health and Plant Biosecurity. One early piece of work for this revised governance structure is development of a new UK plant health strategy, in parallel with negotiations on a revised EU plant health regime, for which the Commission will issue formal proposals in late 2012 or early 2013.

This version (rev 12) also shows the CSA's expert task force, recently commissioned by the Secretary of State. Although this will be of limited duration its findings are likely to have a significant influence on the development of UK plant health strategy.

Simplification of the Landscape

Simplification has been facilitated by subordinating all of the groups shown to either the UK plant health strategy board (in the case of the official groups) or the stakeholder forum (in the case of stakeholder input). Some Phytophthora-specific groups have been merged with more general functions, in line with the recommendation from the 'refresh' of the Phytophthora project to mainstream activity against Phytophthora. The proposal keeps a clear distinction between groups of officials and stakeholder groups, but where the stakeholder forum sees a need and has the capability, there are opportunities for stakeholders to participate in the official working groups, subject to arrangements for handling any conflict of interest or confidential information.

Scope

The current structure is based on UK wide working groups wherever possible. This has the benefit of bringing expertise from across the UK into detailed discussions, and should be adaptable to possible future changes, for example in the relationship between the different parts of the Forestry Commission and the devolved administrations.

Martin Ward

1 November 2012

Written evidence submitted by the NFU

The NFU represents more than 55,000 farming members in England and Wales many of whom manage small woodland areas and hedgerow trees. In addition we have 40,000 countryside members with an interest in farming and the country. The NFU welcomes the opportunity to make a submission to the Environment, Food and Rural Affairs Committee's tree health and plant biosecurity inquiry.

Executive Summary

- The NFU aims to base its policy on sound scientific evidence and supports a risk-based approach to regulation.
- Plant health biosecurity measurers should focus on minimising the risk of entry into the UK of new plant health threats as the highest priority for food security.
- Deregulation should be considered if eradication measurers prove ineffective and pest establishes itself in the UK.
- Some plant health threats can be clearly identified and good preparation is possible through horizon scanning and preparatory planning.
- Horizon scanning and preparation has been inadequate for *Chalara fraxinea*.
- Long term investment in research and support services may be inadequate to manage the threat to plant health biosecurity, compromising food security and protection of native tree species.
- The current EU plant health regime is under review, but possible changes under consideration to the regime to close loop holes, will not be implemented for some years leaving threats unchecked.
- UK plant health biosecurity maybe improved by government support for voluntary approaches and incentives that encourage UK production over importation in high risk situations.

Introductory Comments

1. The threat of Harmful Quarantine Organisms (HQO's) to food security and native tree species is a significant concern for the NFU. New plant health have the potential to cause significant financial loss, for instance in 2007 the financial impact of *Phytophthora ramorum* was estimated at £2 million (Waage *et al*, 2007).[12] With many horticultural businesses suffering tens of thousands of pounds in lost sales and one specialist business being forced to close.

2. The NFU represents the interests of the agricultural production industry in plant health as a member of Fera Plant Health Forum. The NFU also represents the interest of woodland owners through participation in Forestry Commission working groups.

3. Plant health biosecurity measurers should focus on minimising the risk of entry into the UK of new plant health threats as the highest priority for food security supported by a rapid response control strategy should a HQO be identified in the UK. However this must be balanced with a pragmatic approach if a HQO becomes established in the UK. At which point regulatory controls aimed at slowing progress may represent a poor return in terms of cost of benefit analysis and deregulation would be a preferable approach for the production industry, which will then look to manage pests at economic thresholds not regulatory quarantine thresholds.

[12] Waage J K, Mumford J D, A W Leach, Knight J D and Quinlan M M (2007). **Responsibility and Cost Sharing Options for Quarantine Plant Health**, Imperial College London.

4. Whilst the Efra inquiry focuses on the threat from diseases and pathogens. The threat from insect pests such as *Thaumetopoea processionea* (Oak Processionary Moth) and *Drosophila suzukii* (Spotted Wing Drosophila) a major pest of soft fruit is comparable to the disease threat in certain plant and tree species. In many cases there is a direct association between the two threats as insect pests act as vectors for plant diseases/pathogens.

Contingency Planning and Preparation

5. Some plant health threat to the UK such as *Chalara fraxinea* can potentially be predicted based on their progression of spread. This is why concerns were raised by Horticultural Trades Association in a formal letter on the 15 September 2009. Despite this a rapid risk assessment was only undertaken in October 2012[13] with a view to producing a detailed Pest Risk Analysis (PRA). Given the identified risk a PRA should have already been available as a matter of preparedness, a need which could have been identified as part of an annual review of contingency planning between 2009 and 2012.

6. Data available from forestry/horticultural industry experience, foreign plant health service surveys and international research on *Chalara fraxinea*, could have formed the basis of a case for setting up a pest free zone in the UK. This could have pre-empted the controls now undertaken for entry into the UK of ash plants and materials under emergency measures which may have afforded greater protection to the UK. It is clear this information has been available for a number of years and formed the basis of the Horticultural Trade Association formal approach to Defra and Forestry Commission in 2009.

7. The rapid risk assessment produced in October 2012 acknowledged that control methods exists to manage *Chalara* in other tree species, however no assessment had been made in species of Ash. The assessment of suitable control method is important in effective planning, and it is unclear why the opportunities for control had not been further investigated to assess viability to facilitate early intervention.

8. In December 2012 the horticultural industry called for a voluntary ban on the import of Chestnut because of concerns over *Cryphonectria parasitica* (Chestnut Blight). Industry has taken the lead on this threat, but Defra horizon scanning should have identify the threat, assessed the risk and develop a strategic approach. The industry has demonstrated in both this case and with *Chalara fraxinea* a greater awareness of plant health threats than Defra and a willingness to act to protect UK plant biosecurity. Greater involvement of industry in assessing plant health threats and suitable control strategies, with government support for voluntary measures could further improve plant biosecurity in the UK. Another example of industry inclusion in identifying risk, is the recent legislation that came into force on 7 December 2012 focused on the risk of bacterial disease Ring Rot from Polish produced seed and ware potatoes, following calls by the NFU and other industry bodies for reassurance from Fera the UK's plant health status of potato's is not jeopardised as a result of increased imports.

Research

9. There has long been a concern that funding into applied sciences within the food industry has declined since the 1980's with a higher proportion of funding now allocated to research into fundamental biology.[14] Resultantly the availability of expertise and research into plant health threats has been depleted. It was clear during the *Chalara fraxinea* outbreak that limited expertise was available to provide necessary guidance on control options. This is in contrast with the work at the Institute for Animal Health (IAH) on the bluetongue virus (BTV). In 2007, the direct cost of bluetongue in northern Europe was over £95 million. When it hit the UK, world-leading expertise was in place in this country to diagnose the disease and advise Government and industry on ways to manage it through vaccination. This highlighting the value of long term investment into on-going applied research to maintain a research base to support food security and environmental protection.

10. Investment in preparation and monitoring services are critical to effective biosecurity. Whilst plant health import inspections services are well established it is unclear to what degree plant health services utilise monitoring and modelling techniques to assess and predict transmission routes. One such route for disease transmission monitoring is through air borne spores as demonstrated by *Chalara fraxinea*, using the example of BTV for comparison, IAH scientist's monitored populations of the midge species that transmit bluetongue as they spread north. Modelling and satellite imagery predicted the distribution of the midge and thereby the disease itself, demonstrating that warming of Europe's climate was shown to drive BTV transmission through the range of insects able to transmit BTV, and in collaboration with the meteorological office, IAH identified the winds that the midges travel on to predict when and where disease would hit the UK, as it did in August 2007.

11. Pesticide control options for plant health threats have been depleted by over 70% since the early 1990's as a result of the plant protection products directives 91/414 and 1107/2009. With few replacement products available, this has limited control options for endemic pests and diseases but also limited options for control of new threats. Furthermore the limited range of control options also increases the pressure for resistance development across all European Member States, so that pests that spread from mainland Europe may already have developed some resistance within their populations before reaching the UK.

[13] Forestry Commission Rapid Risk Assessment (October 2012) http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/documents/chalaraFraxinea.pdf

[14] **Summary Report from the Food Research Partnership, Translation of Research in Agri-Food (2011)** Government Office for Science

12. In addition to reduced availability of plant protection products the UK Research and development funding into alternatives to pesticides to manage plant health threats has halved since 2005[15] this includes development of resistance, biological controls and alternative management practices. The depletion of plant protection products and lack of investment in applied research into alternatives compromises the resilience of UK food production to plant health threats and overall compromises food security and the ability to protect native species.

The EU Plant Health Regime (PHR)

13. The EU PHR was reviewed in 2010 and is currently undergoing revision with a new draft text expected in March 2013. The review of the PHR highlighted a range of concerns about the effectiveness of the current regime some of which will hopefully be addressed in the revised draft. However implementation of any changes to the PHR are unlikely to occur until 2016 at the earliest, so a number of the current threats to biosecurity and food safety will remain unchecked in the foreseeable future.

14. Control of plant health threats within the EU is heavily dependent upon the efforts of other Member States (MS) within the Union. It is notable that responses to threats by MS are not comparable, for example *Phytophthora ramorum* has been strongly managed in the UK, whilst in other MS limited control options have been implemented. Within the PHR the weakest link principle applies and if other MS fail to control the spread of harmful organisms or operate effective import controls this limits the UK ability to protect its borders. The only regulatory recourse then available is to implement Protected Zones (PZ), which must be agreed by other MS, this can be time consuming dependent upon the level of proof required, whilst over implementation of PZ could be seen as restrictive to trade. Voluntary approaches may be an alternative in some cases but these may require government support to be effective.

15. With regards to clear regulatory loop holes the major threats come from 1) New developing trades from outside the EU 2) Packaging materials (associated pests Asian Longhorn Beetle and Pine Wood Nematode). 3) Lack of control on baggage entering the EU containing plant materials. Currently the PHR does not provide adequate flexibility to limit the risk of these threats before they enter the UK. The experience with Asian Longhorned Beetle (*Anoplophora glabripennis* and *Anoplophora chinensis*) in wood packaging illustrates the risk of possible contamination before entry in the EU and also the risk when moved with the EU. The pest is a threat to trees and shrubs including maple, poplar, willow and elm. Larvae may be imported on wood packaging and can remain undetected in the wood for up to three years making it particularly difficult to control without thorough inspection and opening of packaging, as a result wood packaging must now be treated to eliminate risk of infestation.

16. The PHR inflexibility can impede the potential for speedy import controls, so alternative instruments could be considered such as incentive that move production practices away from imports in high risk situations. For instance the woodland grant scheme has been heavily criticised as the main reason for increasing European trade in ash. The scheme was set up on an annual basis so dis-incentivised the setup of UK nurseries because there were no guarantees of a market for planting that would be ready in two or three years.

January 2013

Written evidence submitted by the National Trust

1. The National Trust welcomes the Committee's inquiry into this issue, and the opportunity to contribute evidence. As custodians of 200 gardens and parks, national retailers and purchasers of plants, and manager of over 25,500 ha of woodland, plant and tree health is vitally important to us. It is likely that we have more ash trees on our land than any other organisation in Europe, and we are therefore deeply concerned by ash dieback. As well severely damaging our gardens, parks and woods it will irreversibly change many of the beautiful landscapes we protect. We have also estimated that if this disease is now allowed to spread across the country it will result in additional costs to the National Trust of around £15 million over the next decade.

2. Our evidence is in three parts, focused on the questions raised in the Terms of Reference:

- A review of the way in which the Government has handled ash dieback, as a way of assessing the adequacy of tree health measures.
- Recommendations on the improvements needed to the plant health regime based on our experience with ash dieback and longer experience with other tree and plant health issues.
- An annex giving some more detail on the implications of ash dieback for the Trust.

Our Key Recommendations

Our overall view is that the Government's handling of ash dieback has revealed many deficiencies in the plant health regime, and furthermore that the Governments response has been "too little, too late".

[15] CRD Pesticides research and development requirements (2012) http://www.pesticides.gov.uk/Resources/CRD/Migrated-Resources/Documents/R/RD-requirements-Defraweb.pdf

Our key recommendations for improving this are to:

(1) Clarify the roles and responsibilities of regulatory bodies, importers and end users.

(2) Improve import and inspection controls in collaboration with international partners, and ensure all relevant plant materials are covered.

(3) Strengthen the plant passport scheme to ensure certainty of provenance and forward tracing of imports.

(4) Sustain a programme of plant health research and horizon scanning based on strong international collaboration.

(5) Improve and simplify stakeholder engagement mechanisms including better intelligence sharing and impact assessment.

(6) Develop the interim Chalrara Control Plan into a robust and vigorous programme of work that will achieve the stated aim of reducing the rate of spread of this disease.

Reflections on the Handling of Ash Dieback

Identifying new threats

3. The first and most fundamental failing was that none of the Government agencies took sufficient notice of the spread of ash dieback across Europe. The report from FRAXBACK an EU COST action[16] meeting revealed that almost every other country in Europe had been observing, managing and researching this disease, for up to 10 years.

As a result we missed a very good chance to prevent this disease entering Britain, and instead sanctioned the ongoing trade of infected plants into Britain.

Roles of public agencies

4. We appreciate there was a huge rush to address to disease in the autumn, and the speed with which the survey was organised was impressive. But having so many agencies involved has added significantly to the complexity:

— It has not been at all clear which aspects Defra, the FC and FERA were leading on (eg the silvicultural advice on managing ash dieback was being drafted rather independently of the emerging Action Plan).

— The recent move to transfer part of the FERA team to Defra may have made sense to Government, but has added to the confusion.

— Even within the FC the roles of FC-GB, the devolved Forest Services in each country and Forest Research have not been clear.

— NE, JNCC and CCW seem to have joined in rather late, and this appears to be a reason for the ecological aspects being under played and "bolted on".

5. We were very troubled that the drafts of the guidance on managing the disease from the FC-GB played down the economic importance of ash timber. This felt like a Scottish perspective, as ash is one of our valuable and saleable hardwoods and important to woodland owners right across England and Wales.

The international plant health regime

6. There is significant bureaucracy associated with the European Plant Health regime and plant passports in particular, and yet this totally failed to restrict the movement of infected trees across Europe. As evidence on this, the Polish Forest Service admitted that it stopped buying ash transplants from Polish nurseries it knew were infected over 8 years ago, but still these nurseries were growing on trees and sending them back (infected) to Britain.

7. It appears that academic debate about the identification and nomenclature of the disease held up concerted action to prevent its spread, whereas it was clear that a new disease syndrome with a pattern of symptoms was spreading. Similarly the need for a consultation period before any controls could be imposed led to an absurd delay in stopping imports of infected ash trees.

Responses to an outbreak

8. Once the disease was confirmed in Britain, some impressive and rapid action was taken by the FC and FERA, such as the ban on moving ash plants, the "tracing" of infected young stock and the rapid survey of ash trees. But we are dismayed that there appears to be no follow-up survey planned around infected sites, to learn more about the pattern of infection. At these sites we still do not know if the infection is limited to a small group of trees or spread across the wider countryside. A good understanding of this is fundamental to understanding its epidemiology and in turn identifying possible control measures.

[16] See: www.fraxback.eu

We are equally dismayed to see the "trace forward" of infected trees seems to be losing momentum, and the agencies' commitment to reducing the rate of spread of the disease seems to be weakening.

9. We understand that concern over resources is one reason. It feels very wrong to be limiting the response to this disease in order to save a relatively small amount of public funding. Given that the reason this disease is established is due to a failure of these public bodies we believe there is a moral imperative on the Government to do all it can to limit the cost to other landowners, the damage to our environment and loss of our heritage.

Research

10. We are troubled that the FC and FERA have not initiated and funded a wide ranging research programme to investigate the various possibilities for combating this disease. Many different "leads" have been identified across Europe, (such as leaf collection/treatment, competitor fungi, mycoviruses and fungicides) and we need these to be followed up urgently through collaboration across Europe.

11. There has been a lot of focus on breeding resistant trees, which is important but in danger of being a distraction from the much more urgent task of researching ways of reducing the rate of spread and increasing the resilience of existing trees.

Working with stakeholders

12. The Core Group and Outbreak Management Group have provided good opportunities for FC, FERA and Defra to tell us what is going on. Events such as the Ministerial Summit in November and teleconferences held by the FC were welcome initiatives. But these didn't really offer good opportunities for dialogue and felt rather "one way" communication. In general the governance and stakeholder groups do seem to have been over-complicated but under-effective.

Recommendations on Wider Plant Health Regime

International controls and emerging threats

13. The current plant health regime is flawed in that import inspections only look for a limited number of known organisms, and are not structured to identify any new threats. We recognise that large consignments of plants or plant material are often only inspected at UK points of destination and then only 2% of the whole consignment is inspected. Given the enormous risk from international trade in biomass and hard landscape materials it is vital that this is brought within the inspection regime.

14. We believe that more rigorous inspection at origin/source may prove a better and more cost effective option than trying to detect at point of entry. This will require establishing clear inspection procedures (3rd party) that must be enforced and require more a robust evidence provided before entry into EC. Introducing quarantine at source may also be a more effective and practical solution. Increasing quarantine times at destination may also be a solution especially when combined with a more robust series of biosecurity measures at these destination points.

15. Much better cooperation is needed between inspectorates dealing with related issues in member countries within the EC. We also call for much better horizon scanning and more open and rapid sharing of concerns internationally, and particularly within Europe.

Preventing Entry of Pests and Diseases

16. The EU plant health regime needs to improve its risk targeting. Plants imported for planting are the biggest risk to our natural environment, and a shift of inspection effort from plant produce to plants and propagating material is needed. The UK authorities are also required to spend too much time inspecting trade for organisms that are highly unlikely to impact on our own natural environment, leaving not enough time for inspecting for organisms that do constitute a real threat.

17. What is defined as a pest in one place may not be a pest elsewhere. We believe that more national flexibility is needed so that a member state can make decisions based on what they consider a threat to their particular environment/trade. A Member State should be able to apply for a temporary Protected Zone status as soon as threat is identified. This would give a more responsive approach as new threats/impacts emerge—instead of the delay incurred with ash dieback.

18. Agreeing the identification and scientific naming of new harmful organisms can be an impediment to co-ordinated action. This obstruction must be addressed so that controls can be based on symptoms and syndromes rather than causative agents. We would fully support the introduction of post- entry quarantine for known high risk harmful organisms which cannot be detected visibly or within the timeframe of normal import procedures.

Plant passports

19. It is clear from ash dieback that we need a robust and efficient system for tracing wholesale plant sales and this must be rigorously enforced, to enable the movement of infected plants to be traced after any outbreak. This should be achieved via the plant passporting scheme.

20. We believe that the Plant Passport system should be enforced through stronger regulation, with the power and willingness to penalise breaches (eg lack of labelling to protect trade or re-labelling stock to mask country of origin). The Plant Passport system should enable full traceability of infestations/outbreaks so investigation of breaches can be conducted to prevent similar situations occurring. Biosecurity breaches in other countries or states will put others at enhanced risk and we believe an open reporting of any breaches must be part of the scheme.

21. To ensure that the full range of vectors for plant disease are covered it is our view that the Plant Passport system should extend to include all plants. We also strongly support the introduction of a single fully harmonised labelling system that is applicable to all plants and plant products.

Preventing Spread

22. It is very important that the scope of any new regime includes sufficient measures to prevent natural spread occurring once a harmful organism is found. With *Phytophthora ramorum* it appears that a small window of opportunity was missed that may have offered options to prevent the large scale spread we are now dealing with.

It now appears that the Phytophthora programme had very limited success and failed to prevent widespread spread via a tree host even though £25 million was allocated towards preventing spread.

23. We need greater clarity and decisiveness about which harmful organisms we have to accept as naturally spreading and which we are going to attempt to prevent entering. That is, be very clear on whether we are trying to prevent entry, eradicate, reduce rate of spread or accept natural spread?

24. A more flexible approach is needed to extending and creating new management zones restricting plant movement in areas where there have been new outbreaks of pests or diseases.

25. We need more recognition of the risk posed to wildlife, heritage, gardens or the environment rather than just crops.

Research

26. We believe that a total costing of impacts of plant disease outbreaks would reveal that funding R&D in this area is an economic imperative. Research must be adequately funded to improve our understanding, improve the effectiveness of our actions and preventing wider costs to both the plant trade and the wider environment.

27. We believe that the competent bodies should strive for stronger coordination of research projects across the EU, and more effective sharing of proposals, progress and early results.

Stakeholder Liaison and Biosecurity

28. We believe that the structure of stakeholder liaison groups needs to be simpler and clearer. These should be stakeholder led and facilitated and supported by Plant Health agencies.

Wider Economic Impacts

29. Currently, the direct and indirect costs of an outbreak are typically borne by innocent parties, with those responsible often not bearing any cost. We would like to see a much fairer system. It seems sensible to use existing schemes such as the "Mutual Fund" to enable compensation payments to be made to those suffering economic losses from a plant disease. At present only agriculture attracts such a mechanism.

30. One small way of sharing costs with those enhancing the risk is for inspections at origin could be co-financed by importers of high risk items—such as species of plants known to be liable to infection or new trade.

31. Any new plant health regime should recognise and include tourism and heritage as a key element in any risk protection and mitigation measures.

Public Awareness of Plant Health

32. A campaign is needed to raise public awareness of and the risk to gardens, crops and the wider environment and the role they play as customers. There are many lessons we can learn from New Zealand in the way public messages are communicated. We feel that changing perceptions will provide one of the biggest gains when dealing with new plant health threats.

33. As part of this we would like to see a review and clarification of the current regulations and controls surrounding the plant and plant material allowance in personal baggage at ports within the EU.

Annex A

THE IMPLICATIONS OF ASH DIEBACK FOR THE NATIONAL TRUST

(A) The National Trust is a leading conservation charity, with a core purpose of protecting special places, for everyone, forever. The land we own extends to over 270,000 ha of countryside and includes 25,500 ha of woodland. Our open spaces are highly valued and attract more than 100 million visits per year. We are also responsible for many hundreds of gardens and parks of historic or cultural significance, as well a diversity of landscapes rich in their diversity of wildlife.

(B) This scale of ownership means that the National Trust is major enterprise, with a turnover close to £500 million, some 5,500 employees, over 60,000 volunteers and a membership of c. 4 million. We typically harvest and market 15,000–20,000 cubic metres of timber and woodfuel each year from our woodland, with an increasing amount used as woodfuel in the many boilers we have installed in our properties.

(C) The National Trust also retails plants through plant stalls at National Trust properties, and we also propagate some plants for use in our own gardens, woodlands and landscapes as well as for retail sale. In response to the threat from Phytophthora to our garden plant collections we recently established our own plant conservation centre to safeguard plant collections and our genetic assets.

(D) The health of plants and trees is thus fundamentally important to our charitable purposes, our commercial enterprises and our conservation work. We therefore have a very strong interest in plant health policy, controls and practices, and considerable experience of working within the plant health regime. As a reflection of the importance of the issue to us several years ago we appointed our own in-house plant health specialist.

(E) The most recent tree health issues we have faced are Phytophthora, acute oak decline and ash dieback. We estimate that dealing with Phytophthora alone has cost the Trust around £1 million pounds over the last five years. If ash dieback is allowed to spread across the country we anticipate the following main impacts:

- Loss of an important component of our native woodland, and we estimate constitutes around a quarter of the canopy of the 25,000 ha of woodland we own
- Threat to the thousands of ancient ash trees in our parkland, woodland and wider estate, which are historic features, natural sculptures, rich wildlife habitats and refuges for many rare species.
- Loss of the hundreds of thousands of hedgerow and field trees, giving irreversible change in many landscapes where ash is a characteristic feature.
- Reduction in the growth of ash timber of around 20,000 cubic metres per annum from our woodland.
- A huge increase in tree surgery needed to ensure public safety.
- Major investment in replanting to replace lost ash trees in gardens, parkland, hedgerows and in woodland.

(F) We cannot put a figure on the environmental and heritage cost of losing our ash trees. But we have made an initial estimate of the economic costs of managing this disease. These calculations indicate a figure of £1.5 million per annum, recurring for at least the next 10 years. This would total £15 million, and finding this funding will mean reducing other conservation work and acquisitions by the Trust. We are very aware that if the plant health regime had been more robust this devastating cost would have been avoided.

January 2013

Written evidence by the RSPB

INTRODUCTION

1. The RSPB welcomes the opportunity to give evidence to this inquiry.

2. Diseases, pathogens and pests on trees and in woodland in the UK is not a new issue. These plants, animals, fungi and bacteria can be a natural part of the wildlife cycle in native woods, but can also seen by the forestry industry as threats to the quality and volume of timber, particularly in non-native forestry plantations.

3. The international trade of trees and plants can bring, and has brought new pests, diseases and pathogens into the UK, some of which have the potential to harm wildlife. The movement of young trees across the UK in the amenity and production horticultural trade and for woodland planting can speed up the rate of spread of infection of tree diseases.

4. The biodiversity implications of any tree diseases may be complex, and may not always be harmful to wildlife. Many of the UK's mature native woodlands are already in need of remedial management to regain their wildlife value for important habitats and species both on, and off designated nature conservation sites ("priority" native woodland habitats and species under biodiversity, environment and forestry strategies in the UK). This can include opening up the tree canopy to provide more light and space for trees and other plants to thrive, as well as to increase the amount and variety of decaying wood to help a range of plants and animals. Note that the Forestry Commission, Forest Service Northern Ireland and the statutory nature conservation

agencies in the UK all recognise the biodiversity importance of so-called "deadwood" species and habitats in native woodlands, and the need to improve the diversity and volume of deadwood in such important wildlife habitats.[17]

5. *Government's forestry policy, regulation, grants, research, survey, monitoring and state forestry must continue to be for sustainable forest management for multiple public benefits. Forest plant health must not be the only objective, or activity of government* when it comes to trees, woods and forests on state, public or private land. Government's approach to woodland and non-woodland trees must be to protect and enhance public benefits, including biodiversity.

6. *The RSPB is working to better understand the potential positive as well as negative impacts of tree diseases on wildlife, and trying to ensure that government takes this into account when deciding on how to tackle tree diseases through research, tree felling and other measures*. This raises questions about the underlying sustainability of how plantation forests are designed and managed, and concerns about what the biodiversity impacts may be of new tree species planted to replace those prone to disease. Tree health is a wildlife concern, not just a timber quality or forest industry issue.

7. Tree diseases, pathogens and pests can give rise to a range of control responses from forestry regulators depending on the infected tree species, the forest management objectives, the extent and severity of impacts. *These disease control measures in themselves could negatively as well as positively impact wildlife*, as well as the spread and populations of tree pathogens, pests and diseases themselves.

8. The key tree and woodland pathogens and disease concerns for the RSPB in the UK are currently:

- *Dothistroma needle blight* (red band needle blight) which is an issue for the conservation of native pinewood in Scotland;
- *Phytophthora ramorum*—a concern if this jumps onto heather or blaeberry—a threat to the habitat of capercaillie in Scotland, as well as to important moorland and heathland habitats across the UK—as well as opportunities to improve the wildlife value of internationally important Atlantic oakwoods in the UK, through removal of Rhododendron ponticum (a Phytopthora ramorum host);
- *Chalara fraxinae* (ash dieback)—potential threat to the wildlife of native ash trees in upland mixed ashwoods and lowland broadleaved woodland, hedgerows, field and urban trees;
- *Phytophthora austrocedrae* (juniper dieback)—possible further wildlife impacts on upland juniper scrub; &
- *Acute oak decline*—possible threat to native oak trees.

9. More information on the RSPB's current conservation concerns with tree pathogens, diseases and pests in the UK can downloaded from: http://www.rspb.org.uk/Images/uk_tree_diseases_tcm9–336884.pdf

10. The RSPB is a member of Defra's Chalara [ash dieback] Core Stakeholder Group and the Scottish Government's Tree Health Advisory Group.

11. *Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?*

12. Tree, forest and plant health and biosecurity must be considered in the context of the Government's long-term sustainable multi-purpose forestry commitments, which have been in place since September 1991.[18] This includes protecting and enhancing biodiversity, conserving historic environment, landscape and access, as well as economic and social concerns**.**

13. "Sustainable" approaches to tree health and plant biosecurity must encompass control measures being carried out in sustainable manner. For example by avoiding disturbance to wildlife species in the timing and location of any sanitation felling, considering potential wildlife impacts of control measures, such as how habitat quality in native woods will change as a result of removal of trees and other host plants, as well as disease eradication, to which pathogens, pests and diseases are selected for research, survey and monitoring and how is this carried out.

14. *Are the Defra, Forestry Commission and Food and Environment Research Agency (Fera) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?*

15. No comment.

[17] See: http://www.forestry.gov.uk/PDF/FCPG020.pdf/$FILE/FCPG020.pdf

[18] Introduced by: Forestry Commission (1991) *Forestry Policy for Great Britain.* September 1991. Forestry Commission, Edinburgh.
Followed up by subsequent country forestry strategies, introduction of the government's own UK Forestry Standard and its associated nature conservation guidelines in 1999, as well as international agreements such as the Ministerial Conference for the Protection of Forests 1993 Helsinki Principles for Sustainable Forest Management, 1992 UNCED Earth Summit and 2002 World Summit on Sustainable Development UK Forest Partnership for Action.

16. *How effective is co-ordination between agencies such as Natural England, the Forestry Commission and Fera?*

17. No comment.

18. *Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?*

19. The RSPB *values the woodland research, survey and monitoring work that Defra currently funds through Forestry Commission Great Britain*, together with the Forestry Commission GB's excellent knowledge transfer work—including practical publications and seminars.

20. The RSPB, however, has *concerns about the research priorities that government sets, commissions and funds in respect to the scope and extent of biodiversity work and the continued emphasis on plantation forestry.*

21. *The RSPB has concerns about the relative research priorities within the Government's Science and Innovation Strategy for British Forestry*[19] *and how this impacts biodiversity work*, via Forestry Commission Great Britain's research commissioning process and the work of its own Forest Research agency. We note that the majority of the government's research funding for forestry is spent with Forestry Commission Forest Research.

22. The RSPB also has *concerns about the limited level of stakeholder involvement in the oversight of research commissioning, setting of research programmes, advisory panels on research, and the corporate objectives of the Forest Research agency.* There is also insufficient clarity on how country forestry research objectives are set and met via the Great Britain level research commissioning process.

23. *Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, biocontrols and chemical or management responses?*

24. *The RSPB has concerns about the relative research priorities within the Government's Science and Innovation Strategy for British Forestry*[20] *and how this impacts biodiversity work*, via Forestry Commission Great Britain's research commissioning process and the work of the Forest Research agency. We note that the majority of the government's research funding for forestry is spent with Forest Research.

25. The government's research priorities for forestry have become drawn to ecosystem services, climate change mitigation and disease control (primarily for commercial forestry), with limited work on meeting intrinsic biodiversity commitments or climate change adaptation for wildlife. We welcomed the inclusion of priority species, as well as priority habitats, in the "Ecosystems & Biodiversity Theme" of the *Science & Innovation Strategy.*

26. The current and future responses to Chalara ash dieback and other tree pathogens, pests and diseases need to be considered in respect to biodiversity and other public benefits, not just as commercial forestry problems that require research, survey, monitoring and control. The current disease control measures for Phytophthora ramorum—felling larch plantations and removal of rhododendron plants in woodlands—and Dothistroma band needle blight (removal and not restocking of Corsican pine trees in forestry), need to be considered in broader terms of protecting and enhancing public benefits, such as wildlife and historic environment, and carried out in a sustainable manner.

27. The RSPB submitted written evidence to the House of Commons Science & Technology Committee *Inquiry on Forest Research* in June 2011, see pages w24-w27 of: http://www.publications.parliament.uk/pa/cm201012/cmselect/cmsctech/1200i/1200vw.pdf

28. *Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls?*

29. *The RSPB is concerned about how many new tree diseases may have reached the UK*. We consider that the trade in plants and animals, for horticulture, agriculture and forestry needs tightening up. The practice of collecting seeds in the UK, but growing the plants in infected areas elsewhere and re-importing these trees with infection is exposing wildlife to unnecessary and preventable threats.

30. *New native woodland planting must not pose a disease threat to established wildlife in mature native woods*. There also *needs to be improved "biosecurity" measures and traceability in the plant trade*—so that anyone buying a tree to plant can be sure what it is, where it comes from, that it is disease free, and knows where and how it was grown and transported.

31. We *welcome moves to improve the UK's biosecurity with regard to species movements, to minimise further damage to the natural environment from pathogens and other invasive non-native species* (INNS). The draft EU legal instrument due imminently is a great opportunity to secure better regulation of INNS at the

[19] http://www.forestry.gov.uk/pdf/SIS_final_2010–2013.pdf/$FILE/SIS_final_2010–2013.pdf
[20] http://www.forestry.gov.uk/pdf/SIS_final_2010–2013.pdf/$FILE/SIS_final_2010–2013.pdf

required international level. As an island nation with strong trading links, the UK stands to gain greatly by having trading partners brought to a shared minimum standard of biosecurity in this regard.

32. *We would welcome improvements to the UK's existing Forest Reproductive Materials system, and associated policy and land management grant requirements, to ensure traceability and transparency,* from seed and initial plant parts to the final tree planting site, including location of nursery grown stock and transport routes. This would help those specifying and purchasing trees to know that the plant material had high levels of biosecurity throughout the production and supply processes, reducing the threat to the wider natural environment and to the plants being procured.

33. There also needs to be better biosecurity and traceability for the trade, production and specification of non-woodland trees in amenity horticulture, landscape management, commercial and retail plant trade, and agriculture.

34. *Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?*

35. *No*. It is unclear how imported woody biomass (tree trunks, branches and roots—whole, chipped, pellets or otherwise processed) for the large-scale generation of electricity and/or heat, can be checked in a manner that will ensure no threat to the UK's wildlife from imported pathogens, diseases and pests. Currently there seems to be little regulatory protection from this threat.

36. *What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example on trade in plants, management of infected trees including saplings, and development of resistant trees?*

37. *No comment.*

January 2013

Supplementary written evidence submitted by the Royal Society for the Protection of Birds

INTRODUCTION

1. The RSPB[21] welcomes the opportunity to give evidence to this inquiry.

2. Diseases, pathogens and pests on trees and in woodland in the UK is not a new issue. These plants, animals, fungi and bacteria can be a natural part of the wildlife cycle in native woods, but can also seen by the forestry industry as threats to the quality and volume of timber, particularly in non-native forestry plantations.

3. The international trade of trees and plants can bring, and has brought new pests, diseases and pathogens into the UK, some of which have the potential to harm wildlife. The movement of young trees across the UK in the amenity and production horticultural trade and for woodland planting can speed up the rate of spread of infection of tree diseases.

4. The biodiversity implications of any tree diseases may be complex, and may not always be harmful to wildlife. Many of the UK's mature native woodlands are already in need of remedial management to regain their wildlife value for important habitats and species both on, and off designated nature conservation sites ("priority" native woodland habitats and species under biodiversity, environment and forestry strategies in the UK). This can include opening up the tree canopy to provide more light and space for trees and other plants to thrive, as well as to increase the amount and variety of decaying wood to help a range of plants and animals.

5. Note that Forestry Commission England, Forest Service Northern Ireland, Forestry Commission Scotland, Natural Resources Wales[22] and the statutory nature conservation agencies in the UK all recognise the biodiversity importance of so-called "deadwood" species and habitats in native woodlands, and the need to improve the diversity and volume of deadwood in such important wildlife habitats.[23]

6. Government's forestry policy, regulation, grants, research, survey, monitoring and state forestry must continue to be for sustainable forest management for multiple public benefits. Forest plant health must not be the only objective, or activity of government when it comes to trees, woods and forests on state, public or private land. The UK Government's approach to woodland and non-woodland trees must be to protect and enhance public benefits, including biodiversity.

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[21] The Royal Society for the Protection of Birds (RSPB) is a registered charity: in England and Wales no. 207076, in Scotland no. SC037654.
Contact details: Mike Wood, UK Forestry Policy Officer, RSPB, Ground Floor, Miller Building, 2 Lochside View, Edinburgh Park, Edinburgh, EH12 9DH;
e-mail: mike.wood@rspb.org.uk; telephone: 0131 317 4100

[22] Natural Resources Wales replaced Forestry Commission Wales on 1 April 2013.

[23] For example see the following guidance for the UK: Forestry Commission & Forest Service Northern Ireland (2012). *Managing Deadwood in Forests & Woodlands—practice guide.* Forestry Commission, Edinburgh. http://www.forestry.gov.uk/PDF/FCPG020.pdf/$FILE/FCPG020.pdf

7. The RSPB is working to better understand the potential positive as well as negative impacts of tree diseases on wildlife, and trying to ensure that the UK Government and devolved administrations take this into account when deciding on how to tackle tree diseases through research, tree felling and other measures. This raises questions about the underlying sustainability of how plantation forests are designed and managed, and concerns about what the biodiversity impacts may be of new tree species planted to replace those prone to disease. Tree health is a wildlife concern, not just a timber quality or forest industry issue.

8. Tree diseases, pathogens and pests can give rise to a range of control responses from forestry regulators depending on the infected tree species, the forest management objectives, the extent and severity of impacts. Disease control measures could negatively as well as positively impact wildlife, causing wildlife disturbance, for example to birds during the breeding season due to poorly timed tree felling, or loss of biodiversity important insects due to chemical control measures, in addition to possible biodiversity impacts of the spread and populations of tree pathogens, pests and diseases.

9. The key tree and woodland pathogens and disease concerns for the RSPB in the UK are currently:

- *Phytophthora ramorum*—a concern if this jumps onto heather or blaeberry (*Vaccinium myrtillus*)—a threat to important moorland and heathland habitats across the UK, and to the habitat of the capercaillie in Scotland, as well as opportunities to improve the wildlife value of internationally important Atlantic oakwoods in the UK, through removal of *Rhododendron ponticum* (a *Phytophthora ramorum* host);
- *Chalara fraxinea* (ash dieback)—potential threat to the wildlife of native ash trees in upland mixed ashwoods and lowland broadleaved woodland, hedgerows, field and urban trees in the UK;
- Dothistroma needle blight (red band needle blight) which is an issue for the conservation of native pinewood in Scotland;
- *Phytophthora austrocedrae* (juniper dieback)—possible further wildlife impacts on upland juniper scrub in Britain; and
- Acute oak decline—possible threat to native oak trees across the UK.

10. More information on the RSPB's current conservation concerns with tree pathogens, diseases and pests in the UK can downloaded from: http://www.rspb.org.uk/Images/uk_tree_diseases_tcm9–336884.pdf

11. We note the devolved approaches to tackling tree diseases. For example in Scotland and Northern Ireland, the protection of important upland native ashwoods in North West Scotland in the Scottish Government's Chalara action plan,[24] and the publication of an all Ireland control strategy for Chalara[25] which aims to eradicate Chalara ash dieback and keep native ash trees and woodland disease free. Wales also has a Chalara management plan.[26] England's current Chalara management plan6F[27] followed an interim GB Chalara control plan.[28]

12. The RSPB was a member of Defra's Chalara [ash dieback] Core Stakeholder Group until spring 2013 when the group was reduced in size, and is a member of the Scottish Government's Tree Health Advisory Group.

13. *Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?*

14. Tree, forest and plant health and biosecurity must be considered in the context of the UK Government and the devolved administrations' long-term sustainable multi-purpose forestry commitments, which have been in place since September 1991.[29] This includes protecting and enhancing biodiversity, conserving historic environment, landscape and access, as well as economic and social concerns**.**

[24] Forestry Commission Scotland (2013). *Chalara Action Plan—Scotland 2013–2014.* 27 March 2013. Forestry Commission Scotland, Edinburgh. http://www.forestry.gov.uk/pdf/FCSCHALARAACTIONPLANSCOTLAND.pdf/$file/FCSCHALARAACTIONPLANSCOTLAND.pdf

[25] DARDNI & DAFM (2013). *All-Ireland Chalara Control Strategy.* 9 July 2013. Department of Agriculture & Rural Development Northern Ireland, Belfast and the Department of Agriculture, Food & the Marine, Republic of Ireland, Dublin. http://www.dardni.gov.uk/all-ireland-chalara-control-strategy-final-4-july-2013.doc

[26] Welsh Government (2013). *Chalara Management Plan for Wales*. March 2013. Welsh Government, Cardiff. http://www.forestry.gov.uk/pdf/ChalaraManagementPlanWales.pdf/$file/ChalaraManagementPlanWales.pdf

[27] Defra (2013). *Chalara Management Plan*. 26 March 2013. Department for Environment, Food & Rural Affairs, London. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221051/pb13936-chalara-management-plan-201303.pdf

[28] Defra (2013). *Interim Chalara Control Plan*. 6 December 2012. Department for Environment, Food & Rural Affairs, London. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69620/pb13843-chalara-control-plan-121206.pdf

[29] Introduced by: Forestry Commission (1991). *Forestry Policy for Great Britain.* September 1991. Forestry Commission, Edinburgh.
This GB policy was followed by country forestry strategies for England, Scotland, Wales and Northern Ireland, introduction of the government's own UK Forestry Standard and its associated Forest Guidelines (including on nature conservation) in 1999, as well as international forestry agreements such as the Ministerial Conference for the Protection of Forests [now "Forest Europe"] 1993 Helsinki Principles for Sustainable Forest Management, 1992 United Nations Conference on Environment ("Rio Earth Summit") and the UK Forest Partnership for Action initiative at the 2002 World Summit on Sustainable Development.

15. "Sustainable" approaches to tree health and plant biosecurity must encompass control measures being carried out in sustainable manner. For example by avoiding disturbance to wildlife species in the timing and location of any sanitation felling, considering potential wildlife impacts of control measures, such as how habitat quality in native woods will change as a result of removal of trees and other host plants, as well as disease eradication, to which pathogens, pests and diseases are selected for research, survey and monitoring and how is this carried out.

16. *Are the Defra, Forestry Commission and Food and Environment Research Agency (Fera) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?*

17. No comment.

18. *How effective is co-ordination between agencies such as Natural England, the Forestry Commission and Fera?*

19. No comment.

20. *Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?*

21. The RSPB values the woodland research, survey and monitoring work, and forestry standards and practice development that Defra currently funds as reserved functions of the Forestry Commissioners through Forestry Commission "Great Britain"[30] including knowledge transfer work, practical publications and seminars. This work is of value in helping to develop approaches to forest plant health, biosecurity and sustainable forestry across the UK, including countries outside the Forestry Commission's responsibility (Northern Ireland from 1922 and Wales from April 2013) as well as in England and Scotland.

22. The RSPB, however, has concerns about the research priorities that government sets, commissions and funds in respect to the scope and extent of biodiversity work and the continued emphasis on plantation forestry.

23. The RSPB has concerns about the relative research priorities within the Government's *Science and Innovation Strategy for British Forestry*[31] and how this impacts biodiversity work, via Forestry Commission Great Britain's research commissioning process and the work of its own Forest Research agency. We note that the majority of the government's research funding for forestry is spent with Forestry Commission Forest Research.

24. The RSPB also has concerns about the limited level of stakeholder involvement in the oversight of research commissioning, setting of research programmes, advisory panels on research, and the corporate objectives of the Forest Research agency. There is also insufficient clarity on how country forestry research objectives are set and met via the Great Britain level research commissioning process.

25. *Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, biocontrols and chemical or management responses?*

26. The RSPB has concerns about the relative research priorities within the Government's *Science and Innovation Strategy for British Forestry*[32] and how this impacts biodiversity work, via Forestry Commission Great Britain's research commissioning process and the work of the Forest Research agency. We note that the majority of the government's research funding for forestry is spent with Forest Research.

27. The government's research priorities for forestry have become drawn to ecosystem services, climate change mitigation and disease control (primarily for commercial forestry), with limited work on meeting intrinsic biodiversity commitments or climate change adaptation for wildlife. We welcomed the inclusion of priority species, as well as priority habitats, in the "Ecosystems & Biodiversity Theme" of the *Science & Innovation Strategy.*

28. The current and future responses to Chalara ash dieback and other tree pathogens, pests and diseases need to be considered in respect to biodiversity and other public benefits, not just as commercial forestry problems that require research, survey, monitoring and control. The current disease control measures for *Phytophthora ramorum*—felling larch plantations and removal of rhododendron plants in woodlands—and Dothistroma band needle blight (removal and not restocking of Corsican pine trees in forestry), need to be considered in broader terms of protecting and enhancing public benefits, such as wildlife and the historic environment, and carried out in a sustainable manner.

[30] Note that since the abolition of Forestry Commission Wales on 31 March 2013 and transfer of its duties, powers and functions to the new Natural Resources Wales body, the Forestry Commissioners' reserved body—"Forestry Commission Great Britain" and its duties, powers, functions under the Forestry Act 1967 are now defined as the Forestry Commission's cross border role for England and Scotland.

[31] http://www.forestry.gov.uk/pdf/SIS_final_2010–2013.pdf/$FILE/SIS_final_2010–2013.pdf

[32] http://www.forestry.gov.uk/pdf/SIS_final_2010–2013.pdf/$FILE/SIS_final_2010–2013.pdf

29. The RSPB submitted written evidence to the House of Commons Science & Technology Committee *Inquiry on Forest Research* in June 2011, see pages w24-w27 of: http://www.publications.parliament.uk/pa/cm201012/cmselect/cmsctech/1200i/1200vw.pdf

30. *Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls?*

31. The RSPB is concerned about how many new tree diseases may have reached the UK. We consider that the trade in plants and animals, for horticulture, agriculture and forestry needs tightening up. The practice of collecting seeds in the UK, but growing the plants in infected areas elsewhere and re-importing these trees with infection is exposing wildlife to unnecessary and preventable threats. The work of the UK Government's Expert Taskforce on Tree Health and Plant Biosecurity[33] did not fully explore this issue to identify practical solutions to comprehensively address it in a sustainable manner that protects biodiversity.

32. The Expert Taskforce on Tree Health and Plant Biosecurity was also too focused on Chalara dieback of ash, with insufficient examination of the current and potential threats to biodiversity posed by Dothistroma needle blight, *Phytophthora ramorum*, *Phytophthora austrocedrae* and Acute oak decline, and potential practical solutions to address this within country forestry consenting regimes and UK and EU trade measures, as well as within UK, EU and International biosecurity mechanisms.

33. The Expert Taskforce on Tree Health and Plant Biosecurity also did not seem to fully recognise the UK Government and devolved administrations' long-term commitment, policy, research and regulation for multi-purpose sustainable forest management, ie including biodiversity, landscape conservation, historic environment, recreation as well as timber and economic aspects of forestry planting and woodland management.

34. New native woodland planting must not pose a disease threat to established wildlife in mature native woods. There also needs to be improved "biosecurity" measures and traceability in the plant trade—so that anyone buying a tree to plant can be sure what it is, where it comes from, that it is disease free, and knows where and how it was grown and transported.

35. We welcome moves to improve the UK's biosecurity with regard to species movements, to minimise further damage to the natural environment from pathogens and other invasive non-native species (INNS). The draft EU legal instrument due in September 2013 is a great opportunity to secure better regulation of INNS at the required international level. As an island nation with strong trading links, the UK stands to gain greatly by having trading partners brought to a shared minimum standard of biosecurity in this regard.

36. We would welcome improvements to the UK's existing Forest Reproductive Materials system,[34] and associated policy and land management grant requirements, to ensure traceability and transparency, from tree seed and initial plant parts to the final tree planting site, including the location of nursery grown stock and their transport routes. This would help those specifying and purchasing trees to know that the plant material had high levels of biosecurity throughout the production and supply processes, reducing the threat to the wider natural environment and to the plants being procured.

37. There also needs to be better biosecurity and traceability for the trade, production and specification of non-woodland trees in amenity horticulture, landscape management, commercial and retail plant trade, and agriculture.

38. We were disappointed that the UK Government's Expert Taskforce on Tree Health and Plant Biosecurity final report[35] did not examine the scope to refine the Forest Reproductive Materials system to enhance traceability of forest plant material in the UK, tied into land management grant scheme rules and compliance with the Government's own UK Forestry Standard, as well as not exploring the need and scope to develop a companion system for traceability in horticulture. The RSPB considers that voluntary industry initiatives for plant biosecurity and traceability, while welcome, are insufficient on their own to effectively tackle this problem without statutory minimum requirements.

39. *Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?*

40. No. It is unclear how imported woody biomass (tree trunks, branches and roots—whole, chipped, pellets or otherwise processed) for the large-scale generation of electricity and/or heat, can be checked in a manner that will ensure no threat to the UK's wildlife from imported pathogens, diseases and pests. Currently there seems to be little regulatory protection from this threat.

[33] See: https://www.gov.uk/government/policy-advisory-groups/tree-health-and-plant-biosecurity-expert-taskforce

[34] See: http://www.forestry.gov.uk/frm

[35] Tree Health & Plant Biosecurity Expert Taskforce (2013). *Tree Health & Plant Biosecurity Expert Taskforce—final report*. 20 May 2013. Department of Food, Environment & Rural Affairs, London. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/200393/pb13878-tree-health-taskforce-final-report.pdf

41. *What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example on trade in plants, management of infected trees including saplings, and development of resistant trees?*

42. No comment.

August 2013

Written evidence submitted by The Woodland Trust

Introduction

The Woodland Trust welcomes the Committee's interest in this most important subject, and the opportunity to submit evidence. The Trust owns and manages 1,200 woodland sites across the UK, and advises other landowners on woodland restoration and creation. The organisation is represented on the UK Biosecurity Programme Board and *Chalara fraxinea* Outbreak Management Team. Where referenced, views in this response draw on published evidence; otherwise they are based on our experience as a woodland owner and manager, and stakeholder in plant health matters.

Overview of Evidence Submitted

- The *Chalara* crisis indicates current systems and protocols (national and international) are inadequate to prevent the importation of new pests and diseases that pose major threats to trees and forests in the UK.
- Within the UK, capacity to deal with the issue is inadequate, particularly if we are faced with multiple outbreaks of different pests and diseases, which could result in a "firefighting" approach, drawing resources away from essential horizon scanning, research and development. Already funding has been diverted from wider biodiversity and ecosystem research due to resource constraints in forestry research.
- There are some grey areas in definition of roles and responsibilities of different agencies in terms of surveillance, horizon scanning etc. There are no clear protocols over ensuring appropriate stakeholder involvement in outbreak management teams, and a certain lack of accountability and clarity over lines of responsibility. Conservation interests are not well represented.
- Improvements could be made in UK systems, but the issue also needs addressing at EU and international level, where the presumption in favour of trade and inadequate assessment of wider social, environmental and economic costs are real barriers. It is not clear how far the EU Plant Health Regime review currently underway will be able to resolve these issues. The current system places unfair burdens on landowners and managers in terms of dealing with outbreaks.

Detailed Evidence

1. *Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?*

1.1 FERA and Forestry Commission (FC) appear to work well together, but in some areas boundaries are not clear. FERA deals with the nursery trade, while FC has responsibility for "forest trees", but it is unclear who is responsible for tracing nursery stock to planting sites. This could have led to insufficient checks on tree nurseries in recent years.

1.2 FC inspects timber and timber product imports while FERA inspects plant imports: it is unclear where forestry plants sit and to what extent inspections of these are made at ports and borders, rather than later when they are in nurseries.

1.3 Urban and non-forestry trees are a grey area; in particular, the landscaping sector does not seem to be well covered at all by plant health monitoring structures, yet this is a high risk area.

1.4 There does not seem to be a clear remit for horizon scanning for plant health threats parallel to the group that plays this role in animal health. This function is not really fulfilled by the Biosecurity Programme Board, possibly due to lack of resources and coordination. At European level it is carried out by EPPO, but there does not appear to be a clear protocol for following through in the UK.

1.5 Devolution adds further complexity. As pest and diseases do not respect borders the Woodland Trust feels there is a need to ensure that there is the will and capacity for a UK-level approach to be taken on these matters when appropriate and it is not clear that this will be the case going forward.

1.6 The plethora of agencies involved may be confusing to the public and could discourage reporting of disease; the sector needs to work collaboratively to ensure people have a single contact point for reporting—the proposed ObservaTREE project may enable this.

2. *Are Defra, FC and FERA contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of the disease?*

2.1 Capacity is the issue rather than details of the contingency plans. Response to specific outbreaks is relatively efficient, but the risk is that when these occur simultaneously, the agencies involved will be unable to act effectively. More resources are needed to deal with outbreak management. A pool of trained and available contractors and surveyors, including volunteers, would enable a more flexible response. With a growing list of threats there is an increased likelihood that existing modest resources become fully committed in the short term, with no "reserve" to maintain vigilance or mount additional responses in the face of additional threats.

2.2 Better horizon scanning and sharing of intelligence from abroad could enable agencies to be better prepared to produce plans and decide on action quickly.

2.3 A protocol is needed for appointment of Outbreak Management Teams to ensure they have the right specialist knowledge and stakeholder representation. For example, given the human health risks posed by a pest such as Oak Processionary Moth, it would have been appropriate for the relevant Outbreak Management Team to include a public health representative at the outset.

2.4 It is also unclear who is ultimately responsible for decisions made by Outbreak Management Teams. Currently these are largely made by FERA or Forestry Commission representatives, but given the serious economic, environmental, and social implications of many tree pests and diseases, there perhaps needs to be a clear line of authority, perhaps from a Chief Plant Health Officer as suggested in the interim report of Professor Ian Boyd's scientific task force (Tree Health and Plant Biosecurity Taskforce, 2012).

3. *How effective is coordination between agencies such as Natural England, the Forestry Commission and FERA?*

3.1 The Biosecurity Programme Board, which oversees implementation of the Tree Health Strategy, aims to ensure coordination between those bodies with statutory responsibilities or stakeholder interest. Coordination between the Forestry Commission and FERA seems to be good, but statutory conservation agencies are not very evident, perhaps due to resource constraints, which means the conservation voice is not well represented. The roles and responsibilities of statutory conservation agencies need clarifying; they should be represented on the Biosecurity Programme Board and Outbreak Management Teams, and involved in horizon scanning. They need to develop the skills and staff able to support this area.

3.2 There is a gap around urban trees; Forest Research provides an advisory service but statutory responsibilities lie with local authorities. Urban trees are a critical pathway for pest introductions. Given current constraints on budgets and resources, we are concerned that this is an area of responsibility that could fall between agencies.

4. *Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?*

4.1 Emerging and existing pests and diseases have a real economic cost to the UK; published papers on the broad economic impacts by Price (2010), for example, provide some insight. His estimate of total annual cost of economic losses due to tree diseases (not including Chalara) is nearly £172 million, with over £100 million represented by landscape considerations.

4.2 A paper on the economic impacts of invasive species in forests in North America, which included consideration of chestnut blight, also suggested greatest economic impacts are due to loss of non-market values; in particular landscape aesthetics and recreation (Holmes *et al*, 2009).

4.3 Costs and benefits do not fall evenly. The benefits of trade that may facilitate introduction of pests and diseases fall largely to individuals and businesses, whereas the costs of pest and disease impacts fall to tax payers and society as a whole. In theory policy should shift the balance so that the costs are absorbed by those who also realised the benefits—a polluter-pays-principle.

4.4 Given an ongoing increase in new pests and diseases, and cuts in overall funding for agencies like FC, there is a danger resources are not sufficient for pre-emptive action, management or mitigation. We welcome the Secretary of State's intention to reprioritise DEFRA resources so that Plant Health has the same emphasis as Animal Health. The scale of the threat from plant pests and diseases should not be underestimated. Compared to the potential costs above, even the addition of £8 million over the next four years for the tree health and biosecurity action plan seems small.

4.5 Costs of management fall to land owners and managers who do not have control over introduction of pests and disease; there is currently no compensation available. At the same time the ability of the sector to deliver the ecosystem services and economic benefits required or promoted by government are reduced.

4.6 Resource constraints lead to a "firefighting" approach to dealing with outbreaks to the detriment of other work that in the long term would help build resilience in woodland and wider landscapes by enhancing biodiversity and enabling adaptation to climate change. The Forestry Commission is increasing the proportion

of its research budget devoted to tree health, but this is at the expense of spend on other areas, including ecosystems and biodiversity (House of Commons Library, 2012).

4.7 The British Society for Plant Pathology has warned of a shortage of people with skills in this area, and in the capacity of institutions to teach in it (BSPP, 2012).

5. *Are sufficient resources being put into developing effective responses to plant health threats such as improving resistance, biocontrols and chemical or management responses.*

5.1 Research does not become a priority until a disease becomes a problem, by which time the time to explore options such as genetic research and plant breeding may be limited.

5.2 International cooperation between researchers is invaluable eg the EU FRAXBACK project (FRAXBACK website, 2012), but this needs to be followed through into action.

5.3 Response to pests and diseases must also include building resilience through conservation, restoration and expansion of natural habitats as set out in the Lawton review, and in the cross-sectoral State of the UK's Forests report (Woodland Trust, 2011), which highlights the need for diversity in forests and landscapes.

6. *Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or those that are spreading. Can these regimes impede stronger import controls. Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?*

6.1 The arrival of *Chalara* on imported stock shows current systems are inadequate. A key problem is that international protocols begin with assumptions favouring free trade, rather than minimising risks to biodiversity.

6.2 Regulation is through known harmful organisms exempted from this presumption, but Brasier (2008), sets out the flaws in this system. Diseases are often caused by previously unknown organisms, to which the regulations do not apply. Lists focus on organisms threatening commercial forestry and agricultural crops, rather than looking at social and biodiversity impacts. Countries are allowed to use different standards and methods of inspecting products. There is evidence of breaches of protocol by some exporting countries. These can only be picked up by surveillance in the importing country which relies on visual inspections, usually of a sample, and unable to pick up micro-organisms in soil.

6.3 Within the EU there is free movement of plant material between countries except for the most serious "quarantine" pests, for which plant passports are required for the host material. Border checks are not carried out. Where material is imported into the UK from outside the EU, but via another EU country, we are reliant on the EU "transit" country carrying out adequate checks, yet there is currently no standardisation of surveillance within the EU. The issue of material being moved between countries within the EU to be grown on, or being "rebadged" as of EU origin, is of concern. We welcome the fact that the Secretary of State's has raised questions over the issue of free trade of plants within Europe.

6.4 While there is a system for recording and notifying buyers of trees as to the provenance of the seed there is no statutory system to allow buyers to see where those trees have been grown and how many nurseries have handled them. Some landowners, the Woodland Trust included, may thus have unwittingly contributed to the import of *Chalara* to the UK. A "traceability" system should be put in place across the nursery/horticultural sector to tackle this.

6.5 While some of these issues may be addressed through the EU Plant Health Review early in 2013, the EU is still limited by higher level international trade agreements.

6.6 A key problem is unbalanced evaluation of costs. While the international systems around plant health aim not to restrict trade and therefore economic activity, there is no comparable evaluation of the costs—social, economic and environmental—of harmful organisms becoming established in the UK, and as a result no true holding to account of those responsible for breaches of biosecurity.

6.7 Plant health controls can technically cover trade in tree and plant products such as biomass. The European Plant Protection Organisation (EPPO) has produced a Pest Risk Analysis for the bronze birch borer beetle, *Agrilus anxius*, a species found across North America and known to cause considerable damage to UK's native birch species. A key risk pathway is through import of wood chip for bioenergy. The PRA sets out phytosanitary measures needed but the issue is ensuring effective compliance with these.

7. *What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU member states?*

7.1 In relation to *Chalara*, there is considerable evidence from 20 years of experience in Europe. The collaborative science research project FRAXBACK ensures information sharing: the UK is a collaborator.

7.2 Even so, early action to reduce the rate of spread or implement mitigation measures was not taken. Lessons should be learnt about cross-European early warning and action to reduce the impact of further emergent infectious diseases and pests.

7.3 Evidence suggests a percentage of trees will be resistant to Chalara. Studies conducted between 2007 and 2009 in Denmark, show a strong genetic variation in susceptibility (McKinney *et al*, 2012). The UK may be able to learn from this. In most other European countries, ash is a smaller component of the total forest and tree mix so it is more difficult to extrapolate potential large scale impacts from experience in Europe.

7.4 Analysis suggest most British ash belongs to a single meta-population covering mainland western and central Europe (Sutherland *et al*, 2010). It might therefore be expected to respond in a similar way to other European ash populations. However three northern and western sites (the Forth and Tay watersheds in eastern Scotland and the Lleyn peninsula in northwest Wales) differ from the dominant population, and may represent remnants of two late potential Ice Age refugia. It is unknown whether the genetic makeup or phenology of these populations will confer any different susceptibility to the disease. There will be a need for UK-specific research into mitigation and adaptation.

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January 2013

Further written evidence from the Woodland Trust

1. The Woodland Trust is grateful for the opportunity to submit further evidence to the committee, building on that submitted in January. Since that time, there have been a number of significant developments including the publication of the Defra Chalara Management Plan in March, the publication and government response to the Tree Health and Plant Biosecurity Expert Taskforce Report in May, a series of Government plant health summit meetings, and ongoing meetings of the Defra Chalara Core Stakeholder Group, all of which we have either participated in or responded to.

2. In addition, The Woodland Trust, with support from Defra Plant Health Policy Team, convened an Expert Seminar in London, in June, to discuss the wider conservation impacts of *Chalara* and other tree diseases and to consider issues surrounding the future resilience of our woodland resource. The event brought together 40 scientists, researchers, forest pathologists, woodland managers, representatives of professional bodies, government agencies and nature conservation NGOs to share experience and learning as well as to identify

key gaps in knowledge and practice. We will be publishing a short paper based on the outcome of the seminar very soon.

3. The Woodland Trust welcomed the pragmatic approach at the heart of the Chalara Management Plan published in March and the recognition by Defra that disease eradication was not possible and so a measured response was called for. Placing the focus on support for removal and replacement of recently planted ash, coupled with a less interventionist approach on mature trees reflected the views of key stakeholders—ourselves included. However, we felt that the plan still failed to adequately reflect the wider biodiversity and social costs and impacts of the potential loss of ash, particularly the estimated 15 million ash trees in hedgerows and the wider countryside across the UK.

4. We recognised the Tree Health and Plant Biosecurity Expert Taskforce Report in May as an authoritative, detailed and well informed piece of work, and welcomed the Government's prompt action on some of its recommendations. The Report highlighted the need for a much wider consideration of the issues around tree and plant pests and diseases—well beyond the response on *Chalara*. However, there is still much work to do and success will depend on the continuing effective engagement of key stakeholders, land managers and businesses active in plant supply, horticulture and the landscape industry. Work has started on the Risk Register, but with the list expected to grow over time to include 700 pests and diseases, this cannot just be a simple prioritisation process. There may be complex interactions between different pests and there will be cumulative effects and impacts on key land uses such as woodland that may require a very different response to agricultural crops. The resources necessary to compile, review and monitor such a Register, and to deliver on the promise to engage key stakeholders, will be significant. It seems too early to tell if the expectation that the central response to plant health would be put on a similar footing to animal health in terms of priority and resourcing has been delivered.

5. In light of the above, Defra's continuing focus of so much time, effort and resources on *Chalara* specifically is beginning to look disproportionate when the growing issues of *Phytopthora ramorum*, Acute Oak Decline, Dothistroma Needle Blight and Oak Processionary Moth are taken into account. A more strategic approach to engaging stakeholders, key players, NGOs and the wider public will be required that spans this series of connected problems and builds on the increased awareness of these issues that the initial media and political focus on ash disease has generated.

6. Reflecting on some of the areas of discussion at the Expert Seminar in June, it would appear to be increasingly important for the Government to consider how best to build more resilience into our natural environment. The best efforts of inspection, regulation and biosecurity will not close down every pathway for pests and diseases coming into the country via trade and travel, and some processes of natural dispersal will be impossible to prevent. With this in mind, we consider that the Government should place a greater emphasis on supporting the development of natural resilience in our forests and woods; by encouraging more diversity in the structure of our woods, more diversity in the species being used, by widening their genetic base, and by promoting woodland creation that extends, buffers and links woodland as part of wider habitat networks—consistent with the Natural Environment White Paper's Lawton principles. This kind of investment will support our habitats and landscapes to become more resilient. These better connected and more diverse woods will not prevent disease but will be more capable of "bouncing back" from the inevitable impacts of those pests and diseases that will somehow get through or circumvent our best efforts to keep them out.

7. Finally, our own direct response to the impacts of ash disease and the growing concerns over wider pest and disease threats to our native woods has resulted in some progress on the tasks we set ourselves as an organisation. We have taken forward work on all areas of the 3-point plan that we issued in November 2012. Firstly, with support from Defra we continued work with partners on preparatory stages for a major EU LIFE+ funding bid for the ObservaTREE project. This has now been secured bringing almost £1 million to develop an early warning system for pests and disease threats to UK trees that will see the public and voluntary bodies play a greater role in supporting our tree health scientists. Secondly, we held our joint Expert Seminar with Defra to share knowledge, promote communication and support learning on key tree disease issues. Thirdly, we have started a major procurement programme to change how we source and purchase the saplings we use in our own planting projects and our work with partners—ensuring that all planting stock is sourced and grown entirely in the UK, raised only from seed collected in the UK from known sources.

September 2013

ENVIRONMENT FOOD AND RURAL AFFAIRS COMMITTEE TREE HEALTH AND PLANT BIOSECURITY INQUIRY

Note responding to questions by the Department for Environment, Food and Rural Affairs

Introduction

This note sets out Defra's responses to the questions set out in a letter from the Committee of 12 November 2013. It represents a co-ordinated Government response and contains input from the Forestry Commission and the Food and Environment Research Agency (Fera).

1. *Will there be a consultation draft of the Plant Health Risk Register to allow essential stakeholder engagement? If so, when will the consultation draft be published?*

Stakeholder engagement has been a key element of the process to develop the risk register and will continue to be so. Stakeholders were involved in an extensive series of workshops to contribute their expertise to the production of the risk register and a consultation draft was shared with them in October. Stakeholders were supportive of the work to date, and provided detailed comments which are currently being considered. We want to make the register as open as possible so will be making it publicly available in the New Year once we have taken account of the input from stakeholders.

In addition to publishing information arising from the risk register the current process of consulting on all risk assessments produced in response to new and revised pest threats will continue. Comments and additional evidence will be welcome at any stage to help keep the risk register up to date. Following initial discussions with stakeholders, we are looking at how best to keep them involved with the UK Plant Health Risk Group process, which is the means by which pest threats are assessed and actions identified, using the outputs from the risk register and risk assessments.

2. *How often will the Risk Register be reviewed and updated?*

The risk register will be reviewed and updated on a monthly basis by experts through meetings of a UK Plant Health Risk Group. This group includes representatives from all UK plant health authorities (including the Forestry Commission and Devolved Administrations). Stakeholders are also involved through the consultation process. The group undertakes horizon scanning and reviews developments in the UK (eg interceptions of pests and diseases) to propose entries for the risk register or amendments to existing entries. In addition the risk register will be subject to a more extensive review with stakeholders on a quarterly basis. The risk register will be maintained by Fera and additional resources have been made available to facilitate the review and update process.

Each month, the Chief Plant Health Officer provides advice to Ministers on issues emerging from the risk register. These are discussed by Ministers and senior officials at a monthly biosecurity meeting, which provides an opportunity to consider the current top threats to biosecurity. Risks to plant health are discussed alongside those to animal health, bee health and from non-native invasive species.

3. *What is the expected overall timeframe for implementing recommendations 3–8 of the Task Force Report?*

We have accepted the third recommendation of the taskforce and recruitment of a Chief Plant Health Officer is underway. We are currently working to develop a plant health strategy to be published early next year. This will set out our proposals for an enhanced plant health programme to improve the protection of our plants.

This strategy will be informed by the taskforce recommendations and the enhanced programme of work will both continue to deliver the recommendations on contingency planning and risk assessment as well as delivering against recommendations four to eight.

4. *What are Defra's priorities for the review, simplification and strengthening of relevant legislation and regulation?*

Through the work of the UK Plant Health Risk Group we review new and revised plant health threats on a monthly basis. This process, supplemented by the plant health risk register, helps to identify priorities for action, including new regulation, simplified regulation or deregulation. It was through this mechanism that we identified the need for additional action to protect our sweet chestnut, plane and pine trees, which resulted in the new regulations introduced in November. In addition, as part of the Red Tape Challenge, we have reviewed all plant health legislation. An outcome from this review is a proposal to consolidate certain important regulations and to consult on revoking those where the powers are no longer required.

We are also fully engaged in the EU regulatory process for responding to threats. The ideal is to keep pests out of Europe altogether, which is the most effective means of preventing them reaching the UK. For pests which are already present in the EU, but not the UK, we need to assess the case for protected zone status. A package of draft legislation progressing through the EU Standing Committee on Plant Health at present includes a number of changes which result from UK initiatives, including regulating the Bronze Birch Borer and Pepper Weevil for the first time, strengthening regulation against the Emerald Ash Borer and deregulating Camellia Flower Blight. We are also looking to introduce or update protected zone requirements on Oak Processionary Moth and the Oriental Chestnut Gall Wasp, as well as establishing in EU law the new UK requirements on Sweet Chestnut Blight and Plane Wilt.

The EU regime is currently being reviewed to respond to defects identified in a 2010 evaluation. This provides an opportunity to secure significant changes to plant health controls, and to introduce a new regime more consistent with the UK Government's aims. We will be negotiating for a new regime which achieves: faster decision making as plant health risks change and new pests arrive; better risk targeting, including regionalisation where appropriate, and a shift of inspection effort from plant produce to higher risk plants and propagating material; and more co-operation between plant health inspectorates across the EU and between plant health and customs services.

5. *We are aware that tightened controls for imports of plane, sweet chestnut and pine have recently been introduced through the Plant Health (England) (Amendment) (No. 3) Order 2013. Are there any plans to introduce tighter controls on imports into the UK to address the risk areas such as soil, wood-based packaging and other plant products?*

The next stage of the development of the plant health risk register will include an analysis of the risks posed by various pathways, and the ways in which they are currently mitigated. The risk register work will also include identification of further mitigating actions which should be undertaken to tackle threats from pests or pathways.

Such pathways can most effectively be controlled through a harmonised EU, or sometimes a global, response and we will continue to engage in the processes to address such threats. For instance, the introduction of ISPM 15 (International Standard for Phytosanitary Measures), under the auspices of the International Plant Protection Convention, on the treatment of wood packaging has helped to reduce the risks associated with this pathway. Some risks remain about the level of implementation of this ISPM and we have worked with the European Commission and other Member States on new requirements for wood packaging from China, which remains a concern. The information gathered during surveillance is being shared with other Member States and we would expect to take concerted action in order to respond to any new threats detected.

We have been playing a lead role in initiating a review of soil and growing media requirements in EU legislation and this issue is now being assessed by the European Food Safety Authority. In addition our horizon scanning has identified a potential risk emerging from the trade in firewood and certain types of wood chip for biomass. We will work with industry to determine how to monitor these trades effectively and if new threats are detected we will seek to introduce new regulation to address these.

6. *How will the department improve access to information and improve communication channels between the diffuse organisations involved?*

We have set up a plant health policy team in Defra to lead the delivery of plant heath activities across England, coordinating input on policy, operational delivery and communications from Fera and the Forestry Commission and providing a closer link to Ministers. At UK level we now have a co-ordinated approach, involving all relevant departments, to assessing and responding to plant health threats, through the UK Plant Health Risk Group which reports to an overhauled UK Plant Health Strategy Board. The Strategy Board is chaired by Defra at director level.

In addition in order to improve the accessibility and ease of use of the vast amount of data available on tree and plant health, a web-based information system is to be developed and launched. This system will be aimed at meeting the needs of the diverse range of users, including government officials, stakeholders, academics and members of the public. It will bring the vast range of data together in one accessible location, providing tools to aid searching and processing. The prioritised plant health risk register will form a key component of this information system.

7. *In relation to overall resources for research, please provide any update to the forecast Defra budgets for 2013–14 onwards as stated in the department's last written evidence submitted to the Committee (in January 2013)?*

	08/09	*09/10*	*10/11*	*11/12*	*12/13*	*13/14*	*14/15***
Core Defra Tree Health and Plant Biosecurity Action Plan*	N/A	N/A	N/A	N/A	2	4.4	4.4
Core Defra Plant Health Research (managed by Fera)	1.3	1.4	0.7	2	1.6		
Forestry Commission Plant Health Research	1.5	1.4	1.4	1.7	2	2.3	2.3
Total Defra Research spend (£m)	**2.8**	**2.8**	**2.1**	**3.7**	**5.6**	**6.7**	**6.7**

*published October 2011

**Please note: Defra budgets for 14/15 and beyond are indicative and may increase or decrease to ensure evidence resources remain aligned and responsive to policy needs.

8. *How does the department intend to address the key skills shortages that have been identified in the UK? Particularly with regard to securing future teaching and training and increasing expertise in this area?*

A range of immediate initiatives are being taken forward to address skills shortages. We have undertaken an initial review of our capability and capacity in plant health which will inform our future research priorities and will be published in January 2014. We have invested in the European EUPHRESCO (EU Plant Health Research Co-ordination) plant health fellowship scheme and the £9.6 million Tree Health and Plant Biosecurity research initiative co-funded with Research Councils under the Living With Environmental Change framework to build up research capacity and increase plant health skills in the UK and wider.

At a strategic level, the Government Chief Scientific Adviser, Sir Mark Walport, in association with the Defra Chief Scientific Adviser, Professor Ian Boyd, is undertaking a study to determine the UK's long term needs for capability in the provision of research to underpin the assurance of best practice management of animal and plant health. For this project, research will include all forms of knowledge management from, for example, national and international data flows based upon operational surveillance to experimental laboratory-based science. The project will deliver its recommendations in summer 2014.

Citizen Science is an important means of building capacity, by utilising skills across a wide network of volunteers. We are conducting a review of our strategic use of Citizen Science, to ensure its potential is realised, and are actively supporting initiatives such as OPAL and ObservaTree, which is developing a tree health early warning system through the involvement of volunteers, citizens and civil society organisations.

In addition, further work is underway to review those in the wider educational landscape who have an interest in biosecurity. Fera and the FC are working with LANTRA, the sector skills council for the environmental and land-based sector to explore e-learning opportunities for the different sectors.

9. *What action is the department taking to ensure that the wider biodiversity and social costs and impacts of the ongoing loss of trees and plants to disease and pests are being considered?*

A significant programme of work is underway to build our understanding of the impacts of pests and disease. We are developing a robust framework for assessing the impacts of the loss of trees and plants to woodlands and other habitats and taking an ecosystems services approach to identify and value the benefits lost. This valuation framework was developed for Chalara and ash trees but a modular approach was specifically adopted so as to be able to extend it to cover any pest or disease and any species of tree or plant.

The plant health research programme also has a number of projects in progress, some of which specifically aim to improve our understanding on the wider impacts on society of the spread of specific pest and diseases and how best to manage those. Most notable of these was a study carried out by JNCC to assess the ecological impacts of the loss of ash trees as a result of Chalara. Work is also underway to assess the social impacts of plant diseases, including those that cannot be monetised.

Finally, impact assessments are required for any significant changes in policy, and so we routinely consider these overall impacts on society when developing and implementing policies.

All of this work feeds into the risk register since environmental and social impacts, as well as economic impacts, are considered when pests are assessed through the new risk register methodology. Further developing these aspects will be an important element of a project to refine and enhance the risk register methodology in 2014.

10. *The remit for the Expert Taskforce is expressly directed at trees and related woody species and the department's focus has been mainly on Chalara fraxinea. Does the department intend to (i) widen the scope to encompass the wider issues that the UK is facing regarding pests and diseases of other plants, such as food crops and indigenous vegetation; and (ii) reassess its own focus to take into account the growing issues of other diseases such as Phytophthora ramorum, Acute Oak Decline, Dothistroma Needle Blight and Oak Processionary Moth?*

Plant health is now one of the four priorities for the department. The enhanced plant health programme which we are developing with stakeholders will cover all plants including trees. The enhanced capacity this will provide will enable us to deal with existing threats whilst retaining the flexibility to meet new challenges if and when they arise.

The department is committed to taking a wide and balanced view by developing a prioritised risk register for plant health. This involves identifying risks from all significant plant pest and disease threats. The magnitude of each risk will be quantified on the basis of both likelihood and impact. This will inform decisions on identifying and responding to the top threats whether they are to trees, cultivated crops or indigenous vegetation. The process is already helping to identify priorities for action, which includes government action, but also where stakeholders may have a role to play.

Work is underway to reassess our approach to current tree health threats in England through a newly established Tree Health Policy Group which brings together officials and stakeholders. The remit of this stakeholder group is to provide advice to the Government on policy options on, and help develop strategic responses to, outbreaks of tree pests and pathogens that are established or at (imminent) risk of establishing in England. The group is currently considering a number of pests and diseases present in the UK, including Phytophthora Ramorum and Oak Processionary Moth. The Forestry Commission is also engaged in similar stakeholder groups for Scotland and Wales and there is regular exchange of information between the four administrations.

Written evidence submitted by the Agriculture and Horticulture Development Board

Please find attached evidence from the Agriculture & Horticulture Development Board to the Environment, Food and Rural Affairs Committee on tree health and plant biosecurity. The evidence has been collated from HDC, HGCA and PCL crop sectors of AHDB. The evidence focuses on the sufficiency of resources and adequate management plans to effectively prevent disease outbreaks and, where necessary, to mitigate impacts.

· *Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?*

1. Roles and responsibilities are not as clear as they should. This is partly a consequence of devolved responsibilities and also overlaps and gaps with Plant Health roles existing in FERA and the Forestry Commission. Some monitoring approaches need to be consistent throughout the UK and take advantage of new diagnostic technologies, but existing monitoring and methods need to continue to enable analysis of long term data sets. It is expected that agencies will have different priorities, so emphasis on plant species or specific pests, weeds and diseases are likely to differ. It is sometimes useful to have the ability to adopt different approaches (within a common framework) between the UK plant health authorities—for example, in seed potatoes being able to implement more rigorous controls to protect the health status of high grade production in Scotland—the bacterial pathogen *Dickeya solani* in potatoes is an example. There does however remain a need for better communication and sharing of approaches with all public agencies involved with monitoring.

· *Are the Defra, Forestry Commission and Food and Environment Research Agency (Fera) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?*

2. There is engagement with industry on the preparation of contingency plans but the boundaries of what may be achieved or are possible could be compromised because of lack of clarity on financial support and cost sharing mechanisms. The need to commit resources in response to new outbreaks can however compromise other plant health management activities such as routine certification or commitment to research projects. It is instructive to note how quickly several academic groups (not involved in routine surveillance or regulatory work) responded to the discovery of *Chalara fraxinea* and have established networks of communication nationally and internationally (without the delay of securing additional financial support). In the US, there are specialist academic groups that are "maintained" with federal or state funds for just such eventualities with the expectation and obligation that they will respond quickly when required but without the needs to engage in routine regulatory or surveillance activity. Perhaps there are lessons that the UK can learn from the way other countries respond to outbreaks of previously unrecorded diseases.

· *How effective is co-ordination between agencies such as Natural England, the Forestry Commission and Fera?*

3. Using *Phytopthora ramorum* (sudden oak death pathogen) as an example, two years into the issue there was little engagement from Natural England even though heathland had been identified as being at risk. The issue of co-ordinating all relevant agencies across all three governments also has significant implications if not done well. There is therefore a need for more effective communication between the agencies and sharing of each agencies priorities.

· *Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?*

4. Staff resources in both research and field pathologists, and in a wider context of plant health, weed and pest specialists and in skilled inspectorate staff are now very limited in the UK. The British Society of Plant Pathologists has recently published a report which provides the evidence for this with regard to plant pathology (http://www.bspp.org.uk/news.php?id=54). Erosion of expertise and capacity in the UK to identify and carry out research into new pest, weed and disease threats inevitably means that when these limited resources have to be mobilised to address a specific issue, routine activities of monitoring and inspection are further under resourced. In cereals, a short term (annual) commitment of funding a virulence survey of cereal rusts inhibits investment by research organisations in both training of pathologists and the development of novel research methods to study new disease outbreaks.

Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, biocontrols and chemical or management responses?

5. Developing effective responses currently occurs, necessarily, "after the event" and will therefore always lag behind the development of the problem. The development of generic techniques prior to new plant health issues developing may serve to shorten the lag period and could potentially also result in a smoothing out of the effort required; however, additional investment would be required to achieve this. An example of this type of approach is the improvement of resistance of cereals which requires a step change approach to achieve the long term goal of greater durability of resistance as opposed to the reliance on single major genes of unknown

durability. Durable resistance would be an additional requirement alongside the breeding of new varieties with high yield and good quality characteristics. The Crop Improvement Research Club assists in this type of research, but more applied aspects which used to be funded through Defra LINK are no longer resourced. Some plant health risks are entirely predictable and pre-emptive approaches to their resolution were taken in former times when more resources were allocated to strategic research. An example is the inevitable build-up of club-root disease (caused by *Plasmodiophora brassicae*) in acid soils where oilseed rape and cereals have been grown in rotation for more than 30 years. This was predicted, decades ago, and the incidence is increasing as a consequence of high rainfall and short term crop rotations, there has been no priority to provide the necessary funding for the long-range research necessary to deliver resistant germplasm for breeding programmes.

6. Biocontrols present a more difficult approach to pre-emptive action as ideally the control needs to be as specific as possible to the problem and the development of an effective biocontrol can take many years to ensure no unintended side effects. It would be possible to start developing suitable controls by building on existing work in other countries where the threat may already exist. As above this would probably need additional resources.

7. Chemical management responses. Most development work is supplied through commercial companies but ensuring sufficient information is available to register chemicals used in other countries for use in the UK on affected crops would be a sensible response. This would require investment in the necessary work and having the capacity within Chemicals Regulation Directorate to deal with any additional work.

Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls? Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?

8. The proposed changes to the EU plant health framework show greater flexibility through definition of low and no prevalence areas although the final form of this has yet to be negotiated and agreed. There is no mention of biomass so a potential gap exists regarding disease risks from chips and sawn logs.

· What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example on trade in plants, management of infected trees including saplings, and development of resistant trees?

9. Good use of existing research and experience in other EU states eg Denmark, assists in prioritising activities and tackling the problem in the UK.

January 2013

Written evidence submitted by the Biotechnology and Biological Sciences Research Council

1. The Biotechnology and Biological Sciences Research Council (BBSRC) is one of seven Research Councils established by Royal Charter and funded by Government through the Department for Business, Innovation and Skills (BIS). As the UK's leading funder of academic research and training in the non-clinical life sciences in universities and research institutes, the Council funds internationally-competitive research to understand and exploit biological systems, together with related postgraduate training, knowledge exchange and innovation, and public engagement activities. Its scientific remit spans the microbial, plant and animal kingdoms, and all levels of biological organisation from molecules and cells to whole organisms and populations.

2. BBSRC welcomes the opportunity to comment on aspects of the EFRA Select Committee's inquiry into tree health and plant biosecurity. The Council is not able to address most of the specific questions posed by the Committee, and its comments (which do not necessarily reflect the views of the Science and Research Group of BIS) are relevant mainly to the following:

> *"Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?"*

and:

> *"Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, biocontrols and chemical or management responses?"*

3. Throughout its existence, BBSRC has supported a substantial body of research on the pathology and epidemiology of pathogens and pests of agricultural and horticultural crops, some of which (*eg* species of *Phytophthora*) are closely related to tree diseases or pests of current concern. Forestry and tree health also fall within the scope of the Council's remit, but BBSRC's expenditure in that area has been modest (and largely confined to work on the breeding of willow for biomass or feedstock production for biofuels)—primarily because of the small number of proposals submitted by eligible institutions, which reflects the size of a currently rather small academic community with relevant interests. (The bulk of existing research into tree health and

related plant biosecurity is carried out by Forest Research, and the Food and Environment Research Agency, two institutions that are not eligible to receive funding directly from the Research Councils.) The few "responsive-mode" tree proposals that are received by BBSRC are considered for possible funding—in competition with those on other topics—against the Council's usual criteria of scientific excellence, strategic relevance and potential impact of the proposed work.

4. There is potential for research on tree health to benefit from related advances in understanding gained from studies of the diseases or pests of farmed crops, or from the application of new biological technologies developed for other purposes. In that context, and in the light of concerns about growing threats to tree health from emerging and potential new pathogens or pests—exemplified by, but by no means confined to, the recent widespread outbreak of *Chalara* ash dieback—BBSRC is participating in a Tree Health and Plant Biosecurity Initiative (THAPBI) with DEFRA, the Forestry Commission, and other potential funders (Economic and Social Research Council, Natural Environment Research Council and Scottish Government). THAPBI is being led by BBSRC under the auspices of the Living With Environmental Change Partnership, along similar lines to the earlier Insect Pollinators Initiative.[36]

5. The THAPBI consortium has established a joint multidisciplinary initiative with a "common pot" of funding (of at least £6.5 Million). Its aim is to bring the widest possible range of research expertise to bear on tree health and associated plant biosecurity issues. Each of the funders has a different mission and remit, but all of them agree that there is an urgent need for innovative, cutting-edge research to help sustain the health and resilience of the UK's trees and woodlands, and their associated ecosystems. The initiative will support the objectives of the DEFRA/Forestry Commission Tree Health and Plant Biosecurity Action Plan (October 2011). Its scope will also be informed by the gaps in knowledge identified in the interim report (November 2012) of DEFRA's Tree Health and Plant Biosecurity Expert Taskforce.

6. The purpose of THAPBI is to generate natural and social scientific knowledge to inform the development of innovative ways of addressing current and emerging threats to trees and woodland ecosystems from pathogens and pests. It is intended to facilitate collaboration between specialists in tree or forest research, and leading-edge scientists from the wider natural, biological, social, economic or other relevant research communities who have broader, complementary expertise that could be brought to bear on increasing concerns about tree health.

7. The Initiative aims to exploit understanding gained from studies of crop pests or diseases, as well as relevant technical advances from other fields—for example:

- understanding at the molecular level of host plant-pathogen interactions and potential resistance mechanisms—and the application of state-of-the-art genomic technologies;
- chemical ecology approaches to the understanding and manipulation of plant-pest-environment interactions;
- new technologies for pest or disease detection and monitoring—including remote-sensing, environmental sampling, "crowd-sourcing" and "citizen science" approaches; and
- advances in epidemiological and ecological modelling.

8. THAPBI seeks to exploit knowledge and technologies from studies of crop pathogens or pests and its integration with ecological and environmental research. Interdisciplinary and systems approaches are particularly encouraged, including relevant social science and economic aspects, where appropriate, to maximise the relevance and potential impact of work in the biological and environmental sciences.

9. The scope of THAPBI covers pathogens and invertebrate pests (but not vertebrate pests or weeds) of trees in forest, woodland or urban environments, and of commercial, environmental or social value (but not orchard trees grown solely for food production), together with related plant biosecurity (risks to trees from pests or diseases spread by human activity, *eg* from the movement of plants or plant products). The Initiative does not specify requirements for work on particular pathogens or pests, but the policy and practical relevance of the proposed research and its potential impact is a major criterion—alongside the quality of the science—in the consideration of applications for funding.

10. Research under THAPBI is invited to address challenges under one or more of the following themes (which are not intended to be prescriptive or exclusive). It may include work at any level of biological organisation from the molecule to the population or ecosystem, as well as interactions with the environment, or wider systems studies including social or economic aspects. Relevant examples of the latter might include: identification and valuation of economic and social impacts in policy appraisal; process and impact evaluation of interventions, including behavioural alternatives to regulation; establishment of the rationale for intervention (and by whom) and prioritisation of options through social cost-benefit analysis (including non-monetary evidence).

- Biology: improved fundamental understanding of pest/pathogen and host interactions and biology, as well as the application of genomics and post-genomic methods and modelling, to improve tree health and underpin and inform pest and disease management.

[36] http://www.bbsrc.ac.uk/pollinators/ and https://wiki.ceh.ac.uk/display/ukipi/Home

— Detection: improved methods and approaches for early detection of tree-related pests and pathogens and for surveillance and monitoring, especially including use of new or emerging technologies as well as through improved public and stakeholder engagement.

— Systems: improved tree and forest health that supports the sustainability of trees, woodlands and their associated biodiversity in a changing environment (including climate change and increased international trade in plants and plant products), through, for example, the better use of genetic resources, the application of ecological principles, integrated control strategies, and improved policy and governance frameworks.

— Biosecurity: improved biosecurity through better regulation, management and awareness—including understanding and use of behavioural insights—of both stakeholders and the public, together with an improved understanding of how biosecurity policies can best be developed and implemented.

11. The funders of THAPBI are keen to encourage innovative proposals from multidisciplinary groupings of researchers that bring together new combinations of skills, particularly collaborations between existing tree or forest scientists and leading-edge researchers from other communities who have relevant expertise that could be brought to bear on current concerns about tree health.

12. THAPBI comprises two phases:

— Phase 1 (closed): short-term capacity and consortium-building awards funded and administered by DEFRA;

and:

— Phase 2: longer-term substantive research projects, funded from the "common pot" and administered by BBSRC, a call for which is expected to be announced in February 2013.

January 2013

Written evidence submitted by BSW Timber

i. BSW Timber is the UK's largest domestic sawmilling group, processing around fifteen% of the UK's annual timber harvest. The group has an annual turnover in excess of £163 million, directly employing over 900 people; indirect employment in timber harvesting and haulage accounts for another 2,500 jobs. The company has six mills across the UK (and one in Latvia). It has been involved in sawmilling since 1848.

ii. BSW is currently implementing a five-year capital investment programme, worth £52 million, in modernising the mills and expanding capacity to produce more than 1.3 million m3. As such it is one of the largest buyers of timber in the UK.

iii. Access to sustainable, productive woodland is vital to BSW's continuing operation and the company has been built on the basis of consistent access to a sustainable and long-term supply of timber. This supply requires the effective management of sustainable, productive UK forestry. Tree health is therefore an area of specific concern for the company as the spread of pests and diseases can significantly impact access to the woodland needed for sawmilling and seriously alter the domestic timber market.

iv. Chalara fraxinea and its potentially devastating impact on the UK's ash population have been given significant attention in recent weeks. However, it is important to note that Chalara fraxinea is not the only tree disease currently threatening the UK's forests and the industries that are dependent on access to sustainable domestic timber. Other diseases such as Phytophthora ramorum and dothistroma are becoming increasingly prevalent across the UK and threaten the diversity and health of British woodlands. Both of these diseases are of particular concern to BSW as they have directly impacted on the UK timber market and the company's operations.

v. As tree disease becomes more prevalent, radical harvesting measures have been implemented to the extent that species substitution in the normal annual harvesting programme will change the balance of species brought to market. As a result there has been a need to adopt different processing and marketing strategies for BSW's sawmills, an expensive and time-consuming process which challenges the confidence of the company's customer base. In Scotland, a market impact task group, chaired by Hamish Macleod, is currently examining this impact more broadly, to assist in more effective planning. It is positive that there is discussion of a similar approach in England and Wales and it is essential that the Government encourages this activity.

Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?

vi. In the past there have been administrative issues which may have led to a lack of clarity within public agencies in terms of the roles and responsibilities for monitoring and reporting incidences of plant and tree diseases and pests. This in turn has led to a lack of clarity regarding subsequent actions to tackle threats and outbreaks. This situation appears to have improved since the recent Chalara fraxinea outbreak however it is important that work is ongoing to continue improvements and ensure that current and future tree disease and pest threats are dealt with fully and in good time.

Are the Defra, Forestry Commission and Food and Environment Research Agency (Fera) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?

vii. In order to prevent substantial disease and pest outbreaks from occurring in the first place there needs to be more robust control of imported plants. Whilst some of the spread of disease is beyond the control of human intervention, greater vigilance may have abated the worst effects of current disease outbreaks. Once a disease is established it is too late and effective monitoring and controls need to be in place before, to identify the early introduction of a disease to the UK.

viii. It is also important that these controls and contingency plans take into account the impact of tree disease from a commercial perspective, beyond the growers, and do not just focus on the environmental, recreational side of the problem. BSW has had to adapt its processing and marketing strategies significantly as a direct result of changes to the timber market caused by tree diseases. For example, in recent years phytophthora ramorum has had a serious impact on larch, causing more larch to be harvested at the expense of the Sitka spruce used by BSW. As a result of this BSW has had to adapt its processing and marketing strategies to take into account the increased influx of larch into the market and the reduced availability of Sitka spruce which was an expensive and time consuming process.

How effective is co-ordination between agencies such as Natural England, the Forestry Commission and Fera?

ix. The Forestry Commission is a vital partner for the commercial timber sector in terms of provision of the support and access to sustainable, productive woodland necessary for the sector's operations. The Forestry Commission is also a vital source of research and expertise on tree pests and diseases which is invaluable to companies like BSW.

x. Effective co-ordination between the three agencies is essential for combatting tree diseases and pests. Overall there is sufficient co-ordination but there also needs to be an effective link from these bodies to the Government so that immediate action can be taken should an urgent threat be identified. Action on Chalara was not taken soon enough by the Government and if this, and other tree diseases, are to be contained and eventually eradicated it is essential that these agencies have access to the Government and that it remains vigilant on this issue.

Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?

xi. It is positive that the Government's leading scientists are arguing for an increased budget for plant health and the Government should take action on this front. The UK has a good skill set in this area although further development of skill sets should be supported.

xii. The Forestry Commission is an excellent source of research resources although BSW has some concerns that the co-ordination in this area may suffer as a result of the changes to the Forestry Commission that are currently underway in Wales. It is important that once the merger of Forestry Commission Wales into Natural Resources Wales is complete that co-ordination in terms of research and action on tree diseases and pests is maintained with Forestry Commission GB and Forestry Commission England and Scotland.

Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, biocontrols and chemical or management responses?

xiii. There needs to be an increased budget for plant health to help improve the availability of resources used to develop effective responses to plant health threats. There is always a need for further research into these areas so that plant health threats can be identified and combatted before they become serious.

Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls?

xiv. BSW is not qualified to comment on this.

Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?

xv. In general plant health controls are sufficiently broad to cover trade in tree and plant products. However, there needs to be further consideration of the potential risks that importations of biomass wood fuel feedstocks can pose to tree and plant health. There needs to be a clear policy in this area.

What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example on trade in plants, management of infected trees including saplings, and development of resistant trees?

xvi. The UK already has a good reputation for developing resistant trees. It is key that diversity in provenance and variety within a species are ensured. A scorched earth approach to treatment risks the inadvertent destruction of resistant stock and although this has been recognised by the Forestry Commission it is important that Government and other public bodies also understand this.

January 2013

Written evidence submitted by the Centre for Ecology and Hydrology

The following evidence for the above inquiry is submitted on behalf of the Centre for Ecology & Hydrology (CEH), a Natural Environment Research Council (NERC) research centre reporting to Government through BIS. CEH is the UK's centre of excellence for integrated research on terrestrial and freshwater ecosystems and their interaction with the atmosphere. CEH carries out its scientific research across three Science Programmes—Biodiversity, Water, and Biogeochemistry which integrate with a central data centre—the Environmental Informatics Data Centre.

CEH welcomes the opportunity to make a submission to this inquiry. Our views are submitted under the *specific questions* requested in the call for evidence.

Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?

1. No comment

Are the Defra, Forestry Commission and Food and Environment Research Agency (Fera) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?

2. Early detection of potential plant diseases both within and outside the UK should be a high priority. Timely, appropriate action to assess risks, and prevent the spread of disease is then required. It would be desirable, therefore, for Government to have an "in principle" rapid response already signed off by all agencies with a potential involvement in a disease outbreak, supported by a contingency fund. A nominated person (eg in Defra, Fera or the Forestry Commission (FC)) could then quickly assemble a group to go through a rapid response flowchart which should function at a national, regional or local level. A protocol that formally assesses the potential risks should be used to initiate the release of resources. By having agreements and strategies in place, this would maximise the advantage of public concern and demonstrate effective response in the case of rapidly developing threats such as that posed by *Chalara fraxinea.*[37]

How effective is co-ordination between agencies such as Natural England, the Forestry Commission and Fera?

3. No comment.

Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?

4. Defra and the FC's Tree Health and Plant Biosecurity Action Plan was launched in October 2011.[38] The Action Plan is focused on import controls, practical biosecurity actions, public and stakeholder engagement, and research. Over £1.2 million of research has been commissioned since April 2012 on: stakeholder mapping and analysis on tree pests and pathogens; the review and analysis of control strategies; improved detection of Asian longhorn beetle; the causes, distribution and scale of acute oak decline; early detection, control and outbreak management of oak processionary moth; genetics of *Phytophthora ramorum*; social and economic analysis of Dothistroma needle blight; and preparing for priority emerging and future pest threats, including ash die-back.

5. It could be argued that the research element of this programme has a mainly short-term focus, responding to current problems, rather than preparing for emerging threats and supporting research that will underpin a future UK response. For example, we have a relatively poor understanding of the effects of climate change and extreme weather events (ie flooding, drought) on long-lived species such as trees and how such events

[37] CEH, with the Forestry Commission and Joint Nature Conservation Committee (JNCC), has recently produced a summary for Government on ash extent and distribution. The Forestry Commission are presenting results from the National Forest Inventory (NFI) http://www.forestry.gov.uk/inventory and CEH will have a separate submission from Countryside Survey (CS) http://www.countrysidesurvey.org.uk/ data to give a full and complete picture of the extent of ash in the UK. It will also include estimates for the ten most common tree species in the country.

[38] http://www.defra.gov.uk/food-farm/crops/plant-health/action-plan/.

might make them more susceptible to disease. From another angle, research on the economic consequences of plant pest and disease outbreaks would also be useful in determining whether resources allocated to research and practical action are adequate.

6. In October 2012, the Biotechnology and Biological Sciences Research Council (BBSRC), Defra (with the support of the Welsh Government), FC, Economic and Social Research Council (ESRC), NERC and the Scottish Government committed funds to support strategic research in the area of tree health and plant biosecurity under the auspices of the Living With Environmental Change (LWEC) Partnership.[39] The purpose of this multi-disciplinary Tree Health and Plant Biosecurity Initiative is to generate natural and social scientific knowledge to address current and emerging threats to trees and woodland ecosystems from pathogens and pests. The overarching aim is to support the future health and resilience of trees, woodlands and their associated ecosystems. The initiative also directly supports the objectives of the Tree Health and Plant Biosecurity Action Plan. An initial phase of funding worth £500k has supported the development of research consortia with the aim of bringing researchers from different disciplines together to network and develop research proposals. Funding for full research proposals will open in spring 2013 (total funding available approx. £6.5 million). This represents, therefore, effort to coordinate research by the major funding agencies in a multidisciplinary way. CEH are leading a Phase1 project "Deploying forest genetic resources for management of tree pests and pathogens—a review of prospects and capacity (GRIPP)".

7. This initiative has the potential to address some of the limitations of the Tree Health and Plant Biosecurity Action Plan by having a more long-term focus on future health and resilience of trees and their ecosystems. The benefit of being prepared for potential threats is that we can respond more rapidly and effectively, protect our valuable natural resource and save money in the long term. Strong integration of projects is required to address this at the ecological and landscape scale.

8. Coordination is essential for effective evidence generation; it is especially important in situations where there are a diversity of issues (diseases and threats impacting different forms of organism) requiring different disciplines (botanists, plant physiologists, agronomists, horticulturalists, foresters, ecologists, climate specialists, social scientists, economists, etc.). At present there is no individual or single group that carries authority and leadership to address all aspects. A standing committee on plant and tree health and biosecurity could be an option.

9. To maintain and enhance research capacity, the UK requires a skill base that has the flexibility to respond rapidly to new and emerging problems, and gain experience by carrying out ongoing research and monitoring of existing problems. Research institutes and government agencies are currently capable of responding faster than universities as they have staff in place and do not need to identify, select and apply for funding. However, with the current financial crisis, the agencies and institutes are under continued pressure and may be losing the flexibility to respond to current and emerging problems, with emergency responses deflecting staff from work that has already been prioritised.

Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, biocontrols and chemical or management responses?

10. CEH was involved in the stakeholder consultation for Defra and the FC's Tree Health and Biosecurity Action Plan, and welcomed the resources allocated to it. As detailed in paragraph 4, the Action Plan is focused on import controls, practical biosecurity actions, engagement, and research, some of which involves control and management measures.

11. Areas of research where there is scope for more work to be done in the UK include:

- *Resistance*—We have a limited understanding of the extent of genetic diversity, its spatial structure and the rate and adaptive potential of forest populations, for many UK tree species. The focus of research on resistance could centre on production forestry (turnover through harvesting and replanting), and natural forests (turnover through death and natural regeneration). The priorities for research will be quite different in each case, the former can use breeding programmes and take advantage of resistant varieties, the latter offers the potential of evolutionary change, perhaps with rate changes mediated by management to increase turnover. Little work has been done in this area, and would involve research on management strategies that build in adaptive potential and gene flow, and allow alterations to rates of generational turnover for species affected by new threats.
- *Plant viruses*—The virus record is very limited for UK trees and wild plants, however, screening and detection methodology is available. When infecting, plant viruses suppress host immunity locally and systemically. There is the likelihood, therefore, that virus infections may make plants more susceptible to other pathogens. Similar evidence has been abundant in animal and humans (eg HIV) but little has yet been reported in plants. By using the next generation sequencing (NGS) technology and advanced bioinformatics, CEH has developed homology-dependent virus detection pipelines that detect unknown virus prevalence, and is making breakthroughs for the discovery of novel plant viruses in the environment.

[39] http://www.lwec.org.uk/stories/lwec-collaboration-tree-health

— *Plant fungal pathogens*—The pathogenicity and genetic variability of real and potential fungal pathogens is poorly understood. The potential for evolution of common non-pathogenic fungi into disease organisms is not known. New, rapid molecular methods for fungal identification are required as many of these micro-organisms are very difficult to identify in the field.

— *Insect pests and insect vectors of fungal pathogens and viruses*—The potential spread of viruses and fungal pathogens by insect vectors is also poorly understood. In addition to diseases spread by native insects, alien insects might bring new pathogens to the UK. Both native and alien insects might also evolve the ability to transmit fungal and virus pathogens.

— *Citizen science*—Within the Biological Records Centre (BRC), CEH has an online system (via "iRecord")[40] which has a page for the reporting of ash die back. Our colleagues at NatureLocator/ University of Bristol were in discussion with the Forestry Commission about an app (based on the PlantTracker app[41]) that would utilise the Indicia database system for biological recording. This system has been set up to easily allow verification of the data coming in, rapid reporting of results, and good quality data flow into systems like the National Biodiversity Network (NBN). This system would allow an online and app recording system for the early detection of plant pests and pathogens. It should be noted that an app for the citizen recording of ash die back is currently available through Ashtag.[42] The BRC system, however, could be applied to a range of pests and diseases and would allow the robust flow of data into existing citizen science recording schemes. The Open Air Laboratories Network (OPAL)[43] have plans for a survey on tree health in 2013.

Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls?

12. CEH cannot comment on the full scope of the EU plant health framework, but can provide comment on a number of organisations and initiatives in which it has been involved.

13. Many plant health specialists would agree that once an invasive plant pest or pathogen has gone beyond a certain threshold, efforts of eradication will be hugely costly and may be ultimately unsuccessful. *Early detection outside the UK should, therefore, be a high priority.* Through its work on invasive species (including plant pests and pathogens), CEH has recognised that rapid response, a pre-requisite for prevention, control and eradication, relies on timely detection of new alien species. Current information systems are inadequate in this regard as the information is in a variety of forms, databases may not be compatible, and information may be difficult to retrieve. CEH has recently been awarded funds for a COST action to harmonise within Europe the information in existing alien species databases, explore undiscovered sources of information, and identify the needs and formats for alien species information by different user groups and for the implementation of an Early Warning and Rapid Response System.[44] The COST Action will provide a network of experts and consider how interoperable data can be made accessible through a set of web services linking to the newly established European Alien Species Information Network (EASIN) initiative.

14. The European and Mediterranean Plant Protection Organisation (EPPO) developed a risk assessment after the sweet chestnut gallwasp, *Dryocosmus kuriphilus*, was first recorded in Italy. To quarantine infected areas in terms of trade should have been an obvious suggestion for the risk assessment, yet it moved from one chestnut growing area to another and is now in France, Switzerland, Slovenia, and Croatia with Hungary expected to be the next country to become affected. In this case, the issue was not about being unaware, *but adequate response and enforcement was lacking.*

Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?

15. The UK currently imports biomass in different forms for power generation. This is likely to increase as coal-fired power stations are all moving to co-firing with biomass, or planning to close by 2015 due to the flue gas desulphurisation legislation. If there is an increase in wood imports up to and beyond 2015 to meet this demand, then UK plant health controls and their enforcement will become increasingly important. Awareness of plant health issues should be raised within the appropriate sectors as there is a tendency to view biomass as inert, and legislation/inspection regimes to be bureaucratic.

What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example on trade in plants, management of infected trees including saplings, and development of resistant trees?

16. If ash in the UK proves to be as susceptible to *Chalara* as in countries such as Denmark with the prospect of major mortality, then there could be a case for pre-emptive establishment of new trees of alternative species. This could be particularly useful for individual and hedgerow trees which have a large influence on the character of the landscape and the biodiversity of farmland hedgerow networks. (Pre-emptive replacement

[40] http://www.brc.ac.uk/irecord/
[41] http://planttracker.naturelocator.org/
[42] http://ashtag.org/
[43] http://www.opalexplorenature.org/
[44] http://www.cost.eu/TD1209/

of whole woods is unlikely to be practical and probably undesirable if it involved felling existing, currently healthy, trees). Financial support for farmers to establish new trees as a safeguard prior to evidence of infection could reduce the time required to replace mature trees. Information on suitable replacement species, and their management would also be required. Such a strategy might also be suitable for certain parkland, garden and other urban situations.

17. It can be noted that trees that are resistant to Dutch Elm disease have taken over 40 years to develop and their use is restricted by patents. Research to develop more rapid methods of identifying resistant individuals of plants, and associating genetic characteristics with resistance is required.

January 2013

Written evidence submitted by the Institute of Chartered Foresters

INTRODUCTION

1. The Institute of Chartered Foresters is the Royal Chartered body for forestry and ar-boricultural professionals in the UK. Our members practice in every branch of for-estry and arboriculture relating to forests, woodlands and trees. We provide services to members including support and promotion of the work of foresters and arboricul-turists; information and guidance to the public and industry; and training and educa-tional advice to students and professionals looking to build upon their experience. We also regulate the standards of entry to the profession and offer examinations for professional qualifications. We are regulated by our Royal Charter and maintain a Code of Ethics and Rules of Professional Conduct for all members.

SUMMARY

2. The ICF welcomes his important inquiry and would like to stress three points, which are elaborated further in this submission:

- the need for urgent and effective implementation of the recommendations of the Tree Health and Plant Biosecurity Expert Taskforce;
- the need to increase funding for research into tree health and plant biosecurity; and
- the need to reinforce links between the research community and those responsible for both policy development and the implementation of forestry practice on the ground. The ICF believes that it can play a valuable role in helping to make this happen.

IMPLEMENTING THE RECOMMENDATIONS OF THE TREE HEALTH AND PLANT BIOSECURITY EXPERT TASKFORCE

3. While the decision to convene the Tree Health and Plant Biosecurity Expert Taskforce was taken in the context of the high profile threat to ash from Chalara, its importance goes much wider than this. For a variety reasons—associated for example with greater international movement of plant materials and associated pathogens, as well as climate change—there appears to be an exponential increase in the tree health threats we are facing in the UK. The problems of Phytophthora ramorum on larch and Dothistroma Needle Blight on pine are well documented. Other pathogens of concern that are relatively newly arrived in the UK include a range of other Phytophthoras, including P. lateralis on Lawson cypress and related species, P. austrocedrae on juniper, P. alni on alder and P. kernoviae; oak processionary moth; acute oak decline; oak pinhole borer; the great spruce bark beetle; the western conifer seed bug; and the Gypsy Moth. Meanwhile, potential threats present in the EU include the 8-toothed Europe Spruce Bark Beetle, the Citrus Longhorned Beetle, the Asian Longhorned Beetle, the Pine Processionary Moth, the Pine Wood Nematode, Pine Pitch Canker, Brown Spot Needle Blight, Chestnut Blight, the Zigzag Elm Sawfly, the Red Oak Borer and the Redneck Longhorn Beetle. In addition, there are other threats globally such as the Emarald Ash Borer, the Spruce Budworm, the Bronze Birch Borer, and Oak Wilt.

4. In the light of these threats, we are pleased that—as recommended by the Task Force—work is now underway to develop a prioritised UK Plant Health Risk Register, based on the best available epidemiological evidence; and to improve governance arrangements to provide strategic and tactical leadership for managing these risks, as well as developing contingency plans. We also welcome proposals to strengthen biosecurity to reduce risks at the border and within the UK.

5. The Task Force also highlighted the need to develop a modern, user-friendly, system to provide quick and intelligent access to information about tree health and plant biosecurity, and to address key skills shortages. These important recommendations should not be overlooked or sidelined. The Task Force itself noted with concern that "there has been an erosion of capability, in the UK and internationally, to deal with some aspects of tree and other plant pests and disease". It said that while some issues can be addressed with the existing skills base, others require a longer-term strategic review involving the Research Councils, Higher and Further Education Institutions, and Government. As members of the Committee will know, a key point here is of course the need to increase funding for research into tree health and plant biosecurity.

The need to Increase Funding for Research into Tree Health and Plant Biosecurity

6. Evidence provided by Defra to the Committee[45] gives details of funds spent by Defra and FC over the past 5 years on plant health research, and that planned up to 2014–15. It appears from this that the total spending by Defra and the Forestry Commission on Plant Health and Plant Biosecurity is around £5 million per year. We understand that a further £2 million will be allocated under the Tree Health and Plant Biosecurity Action Plan 2015–16, and that this has attracted additional funding of up to £4 million from research councils under the Living with Environmental Change (LWEC) initiative.

7. While we fully appreciate the pressure on all public funding, we would argue that research expenditure on tree health remains very low when compared with the potential costs of addressing tree health problems: for example, in its latest Spending review, the Scottish Government had to allocate an additional £1 million for 2014–15 to cover the tree health issues associated with one pathogen (Phytophthora ramorum) on one species (larch) in one part of the UK.[46]

8. To put research funding on tree health and plant biosecurity in another context, we understand that the total UK Science and Research funding is around £4.5 billion per year.[47] This suggests that at present tree health and plant biosecurity attracts only about 0.1% of the UK's total science budget.

Reinforcing Links between Research, Policy Development and Forestry Practice

9. While the Forestry Commission has a strong tradition of knowledge exchange between its scientists, policy advisers and practitioners, this is based very largely on informal networks. Looking ahead, and given the scale of the problems we are now facing, this needs to be developed—and also to reach out, for example, into the arboricultural and nursery sectors as well as the traditional forestry sector.

10. The ICF has been pleased to be represented on the Scottish Tree Health Advisory Group, chaired by Forestry Commission Scotland. This brings together scientists, policy advisers (dealing with tree health, agricultural pests and diseases and the impact of plant health problems on natural ecosystems); foresters, arboriculturalists and nurseries. In addition to helping develop the Scottish Action Plans for Chalara, Phytophthora ramorum and Dothistroma Needle Blight, we have worked with other members of the Group to develop new ideas for reinforcing links. In particular, we are pleased that the Group is now seriously considering the idea of developing a Centre of Expertise. This could help address the knowledge gaps identified by the Tree Health and Plant Biosecurity Expert Taskforce in epidemiology, surveying and surveillance, detection, mitigation and adaptation strategies, social science, trade patterns, and environmental change. Building on the model of existing research Centres of Expertise in Scotland it would also connect research, policy and practice by delivering and effectively communicating objective and robust research and expert opinion. While the Scottish Tree Health Advisory Group only operates in Scotland, we consider that such an approach could usefully be considered on a UK-wide scale, where it could also provide a vehicle for effective and efficient dissemination of relevant information and result from international research.

11. Another idea that is being promoted by our representative on the Scottish Tree Health Advisory Group is that consideration be given to a nursery labelling or assurance scheme. The purpose of such a scheme would be to give customers reliable information about the genetic origins of the plants they are buying; critically, about where these plants have been grown; and about the acceptability of biosecurity standards in the nurseries where they have grown. We understand that further discussions are taking place about considering such a scheme on a UK-wide basis, and would welcome this.

12. The ICF is also pleased to be represented on the Forestry Commission's newly established Expert Committee on Forest Science, through its President as committee chair as well as through some of the committee's members. As the UK's professional forestry and arboriculture body ICF not only welcomes such involvements but considers them essential as bridging and linking research, policy and practice which professionals on the ground have to deliver.

13. Finally, we would mention that we have identified Tree Health as the topic for the ICF National Conference in Spring 2015 (to be held in Cardiff). This will provide a major opportunity to bring our members (both foresters and arboriculturists) into contact with key researchers, policy makers and those dealing with tree health and plant biosecurity problems in other parts of the world.

November 2013

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[45] See http://www.parliament.uk/documents/commons-committees/environment-food-rural-affairs/TREconsolifinal3.pdf

[46] Scottish draft budget 2014/15 (Rural Affairs & Environment, Forestry Commission): see http://www.scotland.gov.uk/Publications/2013/09/9971/8.

[47] The allocation of Science and Research funding, 2011/12 TO 2014/15, BIS 2010: see http://www.bis.gov.uk/assets/BISCore/science/docs/A/10–1356-allocation-of-science-and-research-funding-2011–2015.pdf

Written evidence submitted by Dr David Lonsdale

I welcome the opportunity to respond to the questions below. I am a tree pathologist with 26 years of service at Forest Research (the research division of the Forestry Commission) until early retirement in 2002. I have therefore concentrated especially on the questions concerning the need to maintain a core of specialists with the skills needed in order to assess and manage risks from tree "pests" and diseases. Now in semi-retirement, I believe that I can claim to have no current self-interest in arguing for improved research funding.

My responses to the Committee's questions are as follows.

1. *Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined*

1.1 I am not well qualified to answer this question but my impression is that there is some overlap between the roles of Defra and the Forestry Commission in presenting information and advice to tree owner and to the public. Any such overlap is, however, not necessarily a problem, given the connectivity between the websites of the different government agencies. I have far greater concern about a related matter; ie the co-ordination between the agencies (see below).

2. *Are the Defra, Forestry Commission and Food and Environment Research Agency (Fera) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?*

2.1 Owing to a lack of personal involvement, I am again not well qualified to comment. As a bystander, I have an impression that the agencies have worked well in mobilising resources for the management of various alien "pests" and pathogens now present in the UK. On the other hand, I am concerned that tree owners are not compensated for the compulsory destruction of affected trees. I appreciate that some importers might be accused of being risk-takers, albeit within the law. On the other hand, lack of compensation could discourage them from reporting suspected outbreaks to the authorities, quite apart from any question of "natural justice".

3. *How effective is co-ordination between agencies such as Natural England, the Forestry Commission and Fera?*

3.1 I will not comment on the tactical co-ordination between these agencies at times of emergency, of which I know little. I am, however, seriously concerned about the procedures for communicating specialist advice to decision makers (and to those who draft answers to Parliamentary Questions) in the relevant government departments. In my own experience, the lines of communication were too indirect and distant to facilitate a clear understanding of technical matters.

3.2 With specific regard to *Chalara fraxinea*, I understand that decision makers were being advised in 2009 and beyond that there was no need to ban the importation of potentially infected plants, since the fungus was already present in the UK. In reality, the native *Chalara* was not the same as the "look alike" species that was ravaging continental populations of ash. Although proof of this vital difference had not been obtained at that stage, there was extremely strong circumstantial evidence that a new and aggressive pathogen of ash trees was spreading on an advancing front across the Continent.

3.3 Any competent tree pathologist would have recognised that our ash trees were threatened by a fungal "wolf in sheep's clothing". I can therefore only assume that advice was obtained from someone other than a pathologist, or that the right questions were not asked. In any case, there is a need to ask why pathologists should have to wait to be consulted before feeling free to communicate their concerns.

3.4 Also on the subject of expertise, I would be seriously concerned about any merging of responsibilities that would further diminish the influence of tree pathologists. Tree diseases pose various difficulties that are not likely to be apparent to specialists in other fields; even the pathology of herbaceous plants.

4. *Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?*

4.1 Although it is difficult to judge what is "sufficient", I have a strong impression that current resources are woefully insufficient. In order to provide evidence of emerging threats and to be ready to manage them, we need a core of dedicated, well-motivated specialists. But despite a great increase in the overall level of risk (owing to increasing international trade in high-risk goods, coupled with climate change), we have seen a severe decline in the number of specialists in the universities and also some decline in the number of specialists at Forest Research. Some of the long-established specialists, who joined that organisation in the 1960s and 70s were replaced after retirement but their departure seems to have led to an overall loss of expertise.

4.2 The effectiveness of research organisations can be undermined in further ways by the need to operate internal markets. This can, for example, interfere with the provision of services between different units within an organisation.

4.3 Certain aspects of "management culture" have in my experience also helped to undermine the core of expertise that the nation requires in the face of new threats to trees. Specialists require freedom to pursue lines of research that develop naturally from their previous and current work. It is also necessary to realise that not every aspect of tree disease research can pay its way in terms of timber value. The value of the research will often lie in the resulting knowledge and skills, which will be needed in order to assess and manage emerging threats. Such knowledge and skills could, in my experience, be readily gained at Forest Research many years ago. Later, new policies for funding led to a requirement to ensure that an identifiable "customer" was paying for every aspect research, as identified on timesheets within an accuracy of 6 minutes per item.

4.4 Clearly, someone has to pay for research but core funding should be sufficient to maintain the expertise needed to address the serious risks that are posed by alien pests and pathogens. Also, the undeniable need to manage public funding prudently does not mean that accounting procedures should waste the time and emotional capacity of specialists, whose motivation and productivity stems from their zest for discovery; not from edicts handed down by senior managers.

4.5 As far as universities are concerned, their increased dependence on conditional funding seems to have inhibited the free exchange of ideas and information that can greatly assist the development of methods for assessing and managing risks from tree "pests" and diseases. Co-operation that was once freely available is often unachievable except through unwieldy and contrived multi-institutional projects that have to be laboriously cobbled together in order to meet requirements for potential funding.

5. *Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, biocontrols and chemical or management responses?*

5.1 This question is perhaps mainly relevant to pathogens that are already causing a problem in the UK. We should, however, also be ready to develop methods of control of other pathogens that might become established here in the future, perhaps through co-operation with colleagues overseas.

5.2 With regard to pathogens that have become established in the UK, such as various species of *Phytophthora*, I have seen very little evidence that sufficient resources are being provided for research. Unfortunately there can be no promise of success in the face of some of the most challenging pathogens but there is cause for hope if we can develop an adequate understanding of the interactions between the tree, the pathogen and the environment. This would involve "classic" pathological research of a kind that seems to take place very little in the UK nowadays. There is also a need for carefully targeted genome-based studies.

5.3 The development of resistant varieties is a very important strategy for the future, but many years of research could be required in order to establish a new generation of resistant saplings. Meanwhile, it is essential that genetic resources for a breeding programme, in the form of seeds and of other material for propagation (eg buds) are collected and maintained under storage. I am not aware of resources being made available for such work on any suitable scale.

6. *Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls?*

6.1 I suggest that the facts speak for themselves. Under the current system, we have seen an unprecedented number of very dangerous exotic pathogens occurring here in recent years, including several *Phytophthora* species, the Chestnut blight fungus (*Cryphonectria parasitica*) and *Chalara fraxinea* (although it is possible that the latter might have spread on the wind from the near continent, as well as via infected imports). Imported trees can harbour such pathogens in a virtually undetectable state until long after they have been planted out. The risks are clearly so high that there is justification for far more stringent controls than appear to be available under the current framework. There is therefore a need for a revised framework, which can enable us to defend our island status, whereby the natural barrier of the sea provides our trees with some degree of protection, provided that we do not unwisely allow infected trees to be imported.

7. *Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?*

7.1 I think almost certainly not. Trade in such products could remain as an Achilles Heel in our control measures, even if we can restrict trade in living plants. We need to assess the risks, using the best available expertise and to take action wherever the risks warrant the imposition of controls under whatever framework is currently in operation. In the case of low-value/high volume products such as biofuels, the risks would seem to be potentially high in relation to the value of the trade.

7.2 There is similar cause for concern about wooden packing materials, which can harbour exotic pests and pathogens, such as the so-called Asian longhorn beetle, which recently became established in Kentish woodland near a site where Chinese packing materials had been unloaded. Proper disposal of such materials should be required, given that inspection at ports of entry can probably never be sufficient to prevent the important of dangerous organisms by this means.

8. *What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example on trade in plants, management of infected trees including saplings, and development of resistant trees?*

8.1 The main lesson to be learnt about trade is that it spreads the fungus much farther and faster than would happen by the natural spread of spores.

8.2 A number of EU member states are testing trees derived from apparently resistant parents but not always with success. There has also been some work, for example in Sweden, on the rate of progression of disease in mature and veteran ash trees, which indicates that they can survive for at least several years. Pruning out infected parts of a tree might be helpful in theory but studies in Sweden indicate that it can do more harm than good, since the resulting loss of leaf area reduces the ability of the tree to produce sugars that are needed in its defence against other pathogens such as honey fungus.

January 2013

Written evidence submitted by Jim Pratt MBE

1. Your terms of reference and the request for views document asks a number of questions in relation to the nation's preparedness for dealing with threats from plant diseases. I will restrict my answer to tree health, and to a general statement because I am no longer familiar with the structure or management of the public bodies involved. When we are thinking about these issues, it is imperative to keep in mind that the "stakeholders" we should be considering are future generations yet to be born. We professionals and managers have a responsibility to protect our environment for their future use: in the case of *Chalara*, we have failed to do so regardless of ample warnings, and this inquiry provides a unique opportunity to rectify the mistakes that led to that catastrophe. My statement will cover the provision of staff, and plant import regulations.

2. Provision of Staff

(a) I joined the Pathology Branch of the Forestry Commission Research Division in 1967, and worked therein for 31 years until retiring in 2002 as head of the Pathology section of Forest Research at Roslin, Midlothian.

(b) When I joined, the Branch had a reputation second to none, and was highly respected throughout the world for the quality of its applied research, embodied in a number of text books written by staff which are now standard texts.

(c) The reason for this excellence was due, in my opinion, to the imaginative and energetic leadership of its first director, Dr Tom Peace, to the mix of staff (scientific, technical and industrial) and to a clear and achievable career structure within its parent organisation, namely the Forestry Commission. This national body (charged with protecting and increasing the nation's forest estate) fully appreciated and valued the advice it received from its Pathology Branch on a range of biotic and abiotic disorders of trees, including diseases of potential significance from overseas. At that time, our annual Pathology Group Meeting could muster up to 30 professional practitioners and students from Britain and Ireland.

(d) A key reason for the success of the Pathology Branch in dealing with the large numbers of queries that arose during the period of expansion of the Forestry Commission's new plantations (composed largely of non-native conifers on marginal ground, usually in exposed uplands) was that it had immediate access to other specialisms within Forest Research. These included genetics and dendrology, geology and soils, soils water management, climate, wildlife, insect pests, tree physiology, silviculture, and integrated services such as statistics and computing, economics, and a library. Elsewhere within the Forestry Commission we could get specialist advice on such matters as timber structure and strength, harvesting techniques, roads construction and the like. And, of course, we had access to forest pathologists at a number of British universities, most notably Cambridge, Oxford, Aberdeen and Edinburgh. Of course, each of those groups could take advantage of our knowledge and experience, which was freely shared.

(e) As I understand the current staffing levels, the numbers of forest pathologists working in that specialism today within Britain and Ireland can be counted on the fingers of two hands, and that only one University (Aberdeen) offers post-graduate study. This significant reduction in properly-trained staff has, I believe, occurred throughout Europe, and also to some extent in North America. It would seem proper for your committee to try to understand why our society no longer values the forest environment sufficiently to create a vibrant, effective and dedicated national tree disease research team, properly resourced and with a career structure that encourages forestry graduates to take up this profession. This would not seem unreasonable, even within a period of recession, given the queue of exotic diseases waiting to make an entrance into this country.

(f) Evidence for a paucity of specialists within the UK can be seen in the make-up of the Independent Task Force on Tree and Plant Health, set up in the wake of the *Chalara* outbreak, which numbers but one professional tree pathologist in its membership.

(g) The really important point to make is that forest pathology is a specialism very different from more general plant pathology, especially that related to annual crops. This is because in forestry the hosts' interrelationships with their environments is modified and varied over periods from decades to centuries, and the interplay of the effect of environment on host, and of host on environment, is subtle and surprisingly difficult to unravel.

(h) In my opinion, therefore, moves to subsume tree pathology into a wider DEFRA plant health body would be mistaken. Pathologists need access to other forest-related disciplines more than to those involved with the production of food. And, of equal importance, they need unfettered contact with other tree pathologists throughout the world.

(i) Finally, in relation to tree health, I think it would be appropriate to examine the qualifications of the Forestry Commission's staff in the Plant Health Service, since this is the unit ultimately responsible for advising ministers on matters of tree health. In my opinion, it should be staffed by a practising pathologist or entomologist.

3. Import Regulations

The uncontrolled spread of *Chalara* into and across Europe (including its arrival in infected planting stock in the UK) demonstrates that the regulations set out in the EU Directive 2000/29/EU* as amended have failed, and are in need of urgent and immediate revision. Until they are modified to become fit for purpose, the UK Government should consider replacing them with emergency legislation to restrict the import of any live trees or tree reproductive material unless they can be shown to be axenic (thus allowing entry to seeds and tissue cultures, with the normal quarantine conditions). In addition, and most importantly, all imports of trees or woody plants growing in any soil-based medium must be banned forthwith. (*Council Directive on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community (OJ L 169, 10.7.2000).)

4. Summary

(a) There is an urgent need to increase the numbers of properly trained and motivated specialist Forest Pathologists within the UK who are domiciled among other forestry specialists rather than among plant pathologists.

(b) The regulations on the imports of living trees into the UK needs urgent review leading to radical changes.

January 2013

Further written evidence submitted by Jim Pratt MBE

I was one of the respondents in your request for written evidence on Tree Health and Plant Biosecurity, which I submitted to your committee in January this year.

I have one small issue to draw to your attention which, whilst retrospective, should be set straight in the records. I refer to an entry in the background note written for you by DEFRA on the chronology of the events leading up to ash dieback discovery in the UK, in December 2012. I have only just seen it.

In the table of events, July 2010, it is noted that "Forestry Commission *commissioned* a survey of ash in Scotland by… (me) and Dr Iben Thomsen…" This is not strictly true. The FC had no part in the survey, made no contribution to it, and did not instigate it. It was set up because of my long-standing friendship with Dr Thomsen, my concern that insufficient action was being taken to exclude *Chalara* from the UK, and her desire to obtain samples of the saprotroph *Hymenoscyphus albidus*, an organism no longer available in Denmark where it had been dispossessed by the pathogen *Hymenoscyphus pseudoalbidus.*

What is not mentioned is that in April 2012, as part of her annual leave, Dr Thomsen came to Scotland and delivered a seminar which I arranged for her to give to interested parties here in the Scottish Borders on the findings of the survey and on her concerns for the future of Ash in Britain. Because her visit coincided with a forestry conference in Edinburgh, we were not able to attract the wide range of forest managers which I hoped would come. However, the head of plant health at the Forestry Commission did manage to come, and to him and others her message was unequivocal. She urged an immediate ban on imports of all ash from Europe.

The confusion over the nomenclature of the pathogen which led to the fatal delay in restricting imports of ash should not have happened. It is worth bringing the subject up again because, in my opinion, it reflects the folly of having officials in post who, though effective administrators, are not qualified in forest pathology. The same criticism can be made of staff at FERA who are advising the Secretary of State on research and control of forest diseases without having had relevant involvement in forest pathology.

Some of us with experience of this particular area of expertise but who are now retired have not, in my opinion, been used as we would have wished in a national emergency such as this. There are few enough with practical familiarity of tree diseases, in the UK or more widely in Europe, for that wealth of knowledge to be ignored. We may not be familiar with the latest laboratory techniques, but some of us have epidemiological

knowledge of potential value. Perhaps just as significant, we can express our concerns and put forward our ideas without fear or favour. For my part, I feel strongly about the need to preserve for the long-term (say 50 years) as wide a range of genetic material from our existing ash population as is possible in case future techniques would enable that material to be drawn back into breeding programmes. To ensure those views are at least considered, I have been in touch with the Millennium Seed Bank at Kew, with the USDA who are undertaking similar precautionary work in the USA and have written a paper on the matter which will be published in *Scottish Forestry* within the next few weeks. But I very much doubt my proposals will be taken seriously.

June 2013

Written evidence submitted by Dr Claire Sansford

PREAMBLE

This document identifies areas that could be addressed to help improve the delivery of plant health, particularly in managing the risks posed by exotic plant pathogens.

It is my personal opinion based upon my 24 years' experience as a plant pathologist, firstly from 1988–1996 with ADAS in advisory, research and diagnosis, then till 2012 with CSL/Fera as a Pest Risk Analyst and plant health consultant for statutory plant health.

Responses to the eight questions posed by the Select Committee on their website[48] are given below, along with some additional related points.

1. *Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?*

(a) Some roles and responsibilities are not clearly defined.

(b) The term "*plant*" includes trees. In the case of diseases (caused by pathogens) and invertebrate pests of trees (collectively known as "*pests*" in statutory plant health and referred to collectively as such), the assignment of responsibility for "*monitoring incidences*" (see 1.c.) between the Forestry Commission (FC) and its agency Forest Research (FR), and Defra and its agency Fera,[49] is not clearly-defined. In this respect, "*Pests"* of amenity (urban) trees have sometimes been dealt with by FC (and FR) and sometimes by Defra (Fera). Trees grown for timber have normally been dealt with by FC and FR. Saplings on nurseries have normally been dealt with by Defra/Fera but may have some input from FR. During my employment with CSL/Fera I was advised that the rationale for determining who takes responsibility for trees was (historically) based upon the height of the tree and the current or end-use. However, this is anecdotal and the boundaries were not clear to all staff.

(c) It is not clear what is meant by "*Monitoring incidences*". From my working perspective it could be split into the theoretical and broad monitoring of current and future risks; and practical on-the-ground monitoring of plants and related material.

(d) Theoretical monitoring of current and future risks to plants including trees is the responsibility of a few scientists in Fera and in Forest Research. This involves proactive scrutiny of published reports which are in the public domain such as: scientific literature, grey literature, websites eg:

— IPPC reports https://www.ippc.int/

— New Disease Reports—http://www.ndrs.org.uk/index.php

— EPPO Alert List http://www.eppo.int/QUARANTINE/Alert_List/alert_list.htm.

Internal systems (available only to those belonging to and in some cases nominated by the National Plant Protection Organisation) such as Circa—managed by the European Commission, and the Plant Health Information Warehouse (internal to Fera in full), are also used.

(e) Currently in Fera, several entomologists have the responsibility outlined in 1.d. for invertebrate plant pests, primarily within the Plant Health Consultancy Team. For pathogens, I was the lead plant pathologist from 1996 (then CSL) to 2012. Since 2007, I had no support because the one person working with me was transferred into another team and not replaced. Consequently, there was less proactive monitoring of potentially threatening plant/tree pathogens by CSL (latterly Fera). In early 2012, my post was removed during a Fera "*restructuring exercise*" and I left Fera in July 2012. Fera has recently advertised for two more junior staff to do similar work on the pathology side. However, it will take some years before the newly recruited staff become fully competent in this specialised field.

FR has several pathologists and entomologists but I do not know how they operate to formally monitor pest risks. Nevertheless, the responsibility for monitoring the "*literature*" (electronic and

[48] http://www.parliament.uk/business/committees/committees-a-z/commons-select/environment-food-and-rural-affairs-committee/news/tor-tree-health—plant-biosecurity/

[49] Fera is formerly CSL, the Plant Health and Seeds Inspectorate (previously part of Defra) and Defra Plant Health Policymakers—in Fera but recently returned to Defra

paper) for incidences of current and new pathogen threats to trees was not clearly defined *between* FR and Fera. However, in my employment period we did have an ongoing dialogue particularly after the emergence of *Phytophthora ramorum* (2000/2001 onwards). Responsibility for plants other than trees resides with Fera. On occasion FR staff have taken an interest in non-tree plant diseases ie in my experience *Phytophthora* infection on *Vaccinium myrtillus* (bilberry).

(f) For on-the-ground monitoring, Fera employs a reasonable number of Plant Health and Seed Inspectors (PHSI) with broad responsibility. On suspicion or detection of a known plant pest or pathogen which falls within their remit ("*quarantine pests*" listed as A1 or A2; certification *"pests"*; or possible new threats) at ports, airports and at places of production (nurseries, farms etc.), they are charged with submitting samples for diagnosis to Fera. Diagnosis of a new threat should lead to communication of this threat through a logical series of steps to those needing to know, governed by the Plant Health Risk Management Workstream (PHRMW: a committee led by Fera and incorporating Fera/FC/FR and the Devolved Administrations—DAs). I cannot comment on the practical monitoring done by FC/FR.

(g) Non-listed *"pests"* of plants including trees which are considered to be present and established in the UK (ie *"non-quarantine"*) do not fall under the auspices of statutory plant health. The responsibility for monitoring these in Government agencies is not clearly defined. Some are monitored by survey eg arable crop surveys funded by Defra. If a plant "*pest"* that was suspected of being absent is assessed and declared to no longer be a "*quarantine pest*" then it cannot fall under the auspices of statutory plant health. As such it should (in theory) no longer be monitored under that budget. An example of this is *Phytophthora pseudosyringae* on bilberry. Staffordshire County Council took responsibility for this pathogen on Cannock Chase before and following the Pest Risk Analysis[50] (PRA) and the consultation on risk management options,[51] which recommended no statutory action because of the pest status. However, there can be occasions when on-the-ground monitoring continues from a research perspective (which happened in this instance to help inform the *Phytophthora* programme). Explaining the rationale for stopping monitoring a plant "*pest*" when it becomes declared "*non-quarantine*" should be clear-cut. However, stakeholders can struggle with this concept as they continue to see the damage that is being done.

2. *Are the Defra, Forestry Commission and Food and Environment Research Agency (Fera) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?*

(a) A generic contingency plan existed during my time in CSL/Fera (1996–2012). However, by the time a disease outbreak has been diagnosed it is often too late to control the spread and mitigate the impact. The best *modus operandi* for plant pathogens is to prevent their entry in the first instance. In my opinion, the only situation where a disease outbreak might be managed effectively is under protected cropping conditions. Managing outbreaks of invertebrate pests is not my specialism but this might be more effectively undertaken because these organisms are often visible (depending upon the life stages and their dispersal means).

3. *How effective is co-ordination between agencies such as Natural England, the Forestry Commission and Fera?*

It depends what is being co-ordinated.

(a) Production of Pest Risk Analyses (PRAs) is commented on under 4.

(b) The Science Advisory Group (SAG) for the *Phytophthora* Programme (2009 onwards) on which Natural England (NE), FC, and Fera (amongst others) were represented inputted advice for the commissioning of research, with the exception of the modelling work led by Cambridge University, which was commissioned without input from the SAG.

(c) Natural England is a stakeholder and as such is able to feed in to consultations on risk management options for plant pests and pathogens (run by the PHRMW[52]).

4. *Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?*

(a) This question is multifactorial and is slightly confusing because of the use of the word "*research*", which can be interpreted differently depending upon the perspective of the reader. From my point of

[50] Sansford C (2009). *Phytophthora pseudosyringae* —first findings on bilberry in the UK. http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/documents/phytophthoraPseudosyringae0609.pdf
Sansford C (2011). Rapid assessment of the detailed need for a Pest Risk Analysis. Fera document. 16pp. (2nd of 3 versions put out for consultation—no longer on web).
Sansford C (2012). Rapid assessment of detailed need for a Pest Risk Analysis. Fera document. 19pp. (Updated in response to comments received during the consultation).
http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/documents/phytophthoraPseudosyringae0312.pdf

[51] See entry at http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/praTableNew.cfm

[52] See http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/praTableNew.cfm

view, the definition of "*research*" on the emergence of new threats to trees (including plants) is as described above (1.d.). In the UK, the expertise and number of individuals responsible for alerting the policy makers in Fera (now back in Defra) and FC to these new threats to plants (including trees) is limited. See earlier comments, particularly regarding plant pathogens.

(b) Co-ordination of "*research*" effort on the emergence of new threats to trees (including plants) has been by co-operation between individual scientists. On the pathology side, the effort on trees was done by discussion between FR and me and through the PHRMW. I undertook a number of PRAs (and related documents) for plant pathogens affecting trees (and many affecting non-tree plants) requesting input from FR either as authors, or in the form of provision of specialist advice and in reviewing the documents where appropriate. I have also reviewed some documents produced by FR. The decision as to who undertook the PRAs was normally agreed through the PHRMW. In the case of *Chalara fraxinea*, the responsibility for the UK PRA was taken by FR (see written evidence submitted by Defra, dated December 2012; .pdf on the Select Committee website[53]). An EPPO meeting to produce a PRA for the EPPO region was convened for 2009 and then cancelled and replaced by a workshop. See further comments under 8.

(c) PRAs identify the status of the pest ("*quarantine*" or "*non-quarantine*") and the risk management options (statutory controls or not) for consideration by the PHRMW. PRAs and the risk management options are put out for consultation[54] following discussion at the PHRMW. Feedback from the consultation exercise (usually 12 weeks) is considered at the PHRMW and a decision is then taken as to how to proceed with risk management.

(d) Co-ordination of *practical* "*research*" effort on management of threats to trees and non-tree plants has existed under (eg) the *Phytophthora* programme and should happen under the Tree Health Action Plan. Such research is done by laboratory and field-based scientists in Fera and FR, and by laboratory-based scientists in the DAs. There can be some duplication of effort.

5. *Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, biocontrols and chemical or management responses?*

(a) For Government agencies such as FR or Fera, this varies with the threat and whether the target organism is considered to fall under the statutory plant health remit.

(b) The most recent *Phytophthora* programme (2009 onwards) had the largest financial resource (£25 million) ever recorded in the UK for two organisms that fell under the statutory plant health umbrella (*P. ramorum* and *P. kernoviae*). However, this is not the normal level of funding for threats of this nature. Statutory (and non-statutory) plant health funding is normally tiny relative to human and animal health. The problem is, relatively speaking, that there is a much higher number of organisms posing a threat to plant health, with many having more than one host.

(c) Improving resistance in plants (including trees) is a specialist area and not the remit of scientists in Fera/FR, because this is a long-term non-statutory strategy and usually done by plant breeders.

(d) Biocontrol is not normally appropriate for pests and pathogens that are under statutory control since the remit is to eradicate or contain the threat. Conventional biocontrol (the use of an organism that feeds on the target organism) can only work by maintaining a population of the target. There are very few examples of successful biocontrol for plant pathogens globally so it is unlikely that there would be a successful biocontrol for an introduced plant pathogen. Biocontrol is more appropriate for controlling invertebrate pests as part of an integrated pest management strategy incorporating other controls.

(e) Chemical strategies for control can in theory be investigated by FR and Fera, such as happened under the *Phytophthora* programme. Commercial companies have a vested interest in this so care must be taken to ensure that the range of chemicals tested is appropriate for the target organism and that there is a likelihood of obtaining the appropriate legal approval for use. Using chemicals to control diseases of trees is not my specialism but is not appropriate (practical or safe) on a large-scale; protection of valuable ornamental specimen trees might be considered

(f) Again, once an organism is considered to be present and established ("*non-quarantine*"), the responsibility for investigating control strategies does not normally fall under the statutory plant health remit. FR and Fera have the capability to investigate controls for such organisms but this would rely on funding from other sources (eg levy bodies for commercial crops—HGCA/HDC; other parts of Defra, etc.) and staff having the time to do this. Other organisations can also do this work.

6. *Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls?*

(a) *"No"* and *"yes"* respectively.

[53] http://www.parliament.uk/business/committees/committees-a-z/commons-select/environment-food-and-rural-affairs-committee/news/tree-health-ev-1/

[54] See http://www.fera.defra.gov.uk/plants/plantHealth/pestsDiseases/praTableNew.cfm

(b) Part of the problem is that some EU Member States (MS) do not tackle plant *"pests"* that are not "*listed*" (in the EC Plant Health Directive* 2000/29/EC, as amended) Unfortunately, the only way a plant *"pest"* can become listed is for a PRA to be undertaken (and that is only the start of the process—see 6c). Under Article 16.2 of the Directive*, there is a requirement for each MS to notify new findings of harmful organisms considered not normally present, and to tell the EC of any measures the MS has taken or intends to take. In addition, few MSs employ staff to assess such risks, so the onus falls on a few (the UK in particular but there are others), or on EPPO. Another difficulty is that not all MSs consider that organisms affecting plants other than those grown as conventional crops (agricultural/horticultural) are important, so environmental threats may be ignored.

(c) If the organism of concern is subject to a PRA and is deemed to fulfil *"quarantine pest"* status, a case for listing (with appropriate associated regulation of pathways of entry etc.) is made to the EC Committee on Plant Health. The case is discussed, sometimes over a lengthy period, before the members of the Committee decide whether it should be sent to the EC Annexes Working Group for the determination of risk management options, to be listed in the EC Plant Health Directive.

Sometimes emergency legislation can be implemented relatively quickly, but this is unusual. It happened for *Phytophthora ramorum* in September 2002—see summary in the EU (RAPRA) PRA.[55] Often the process can take years, meeting a plethora of obstacles on the way. This can occur when a pest/pathogen is present in the EU with limited distribution and where there are consequences for trade. This is especially pertinent for countries where the pest is present and which trade in the known host material. This happened with the review of the emergency legislation for *P. ramorum, which* was meant to be taken in light of the completion of the EU PRA. When presented to the EC Committee in February 2009 it was met with challenges from some Member States representatives. I was not present to defend the PRA (as first author), but had already done so in writing jointly with the RAPRA Project Co-ordinator (from FR), to those concerned. Rather than use the PRA to take forward the revision of the emergency legislation for *P. ramorum* as had been intended (last updated in 2007), it was sent off to EFSA (another EC-funded institution) to address the points raised by those who had concerns, along with some additional points. The PRA had been funded by the EC and had been signed-off by the Directorate-General for Research as one of the Deliverables of the project. The majority of the EU expertise on *P. ramorum* (and some key US scientists) had contributed to the project. The EFSA opinion on the PRA was published in June 2011.[56] The PRA was accepted but by this time, the pathogen had been detected in larch in the UK. EFSA recommended that "*Regulatory work should keep updated with research results on* P. ramorum *and further development of the Japanese larch outbreaks.*" By the time I left Fera, the review of the legislation had not occurred.

(d) Sometimes PRAs are produced but not fully-used to implement measures. The EPPO PRA for *Phytophthora lateralis* produced in September 2006 (following the UK PRA) led to A1 listing by EPPO but it was not (as far as I am aware) considered by the Annexes Working Group. In 2007, the UK requested that the pathogen be added to Annex IIAI of the EC Plant Health Directive on relevant host plants, and for the pathogen to be taken into account when reviewing measures on soil. This did not occur. The UK reported the first outbreaks of *P. lateralis* in November 2010. See footnote.[57]

(e). The other issue is that the quarantine status of a pest can be unclear or not apparent, depending upon what has been investigated and published by scientists. This was the case with *C. fraxinea* which in 2009, was considered to be present and widespread in the EU (including the UK) as the teleomorph *Hymenoschyphus albidus*, before the recognition that the teleomorph was in fact a new species *H. pseudoalbidus*. The latter new species was considered absent from the UK at the time of the publication of the paper by Queloz *et al.* (2011)[58] (online March 2010, cited as 2011). Before the publication we (FR/Fera/EPPO) had considered the facts as presented but were at a loss to explain why there were no apparently symptomatic trees in the UK given we felt that the organism was already here. Because of this, listing was not considered possible.

(f) The molecular techniques that allow differentiation of an organism from another (even if there appears to be one organism) and deployed in the identification of *H. pseudoalbidus* are not used routinely as a taxonomic tool, except by those with the necessary expertise and resources.

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[55] http://rapra.csl.gov.uk/pra/index.cfm. Sansford CE, Inman AJ, Baker R, Brasier C, Frankel S, de Gruyter J, Husson C, Kehlenbeck H, Kessel G, Moralejo E, Steeghs M, Webber J, Werres S, 2009. Report on the risk of entry, establishment, spread and socio-economic loss and environmental impact and the appropriate level of management for *Phytophthora ramorum* for the EU. Deliverable Report 28. EU Sixth Framework Project RAPRA. Final version dated 26/2/2009.

[56] http://www.efsa.europa.eu/en/efsajournal/pub/2186.htm

[57] Woodhall J, Sansford C (2006). UK Summary Pest Risk Analysis for *Phytophthora lateralis*. CSL internal document. 13pp.; Woodhall J, Sansford C (2006). UK Datasheet for *Phytophthora lateralis*. CSL internal document. 20pp. ; EPPO (2006). Pest Risk Analysis for *Phytophthora lateralis*. 33pp. http://www.eppo.int/QUARANTINE/Pest_Risk_Analysis/PRA_intro.htm ; Sansford (2011). *Phytophthora lateralis*: A serious threat to Lawson' cypress (*Chamaecyparis lawsoniana*). Fera factsheet. http://www.fera.defra.gov.uk/plants/publications/documents/factsheets/phytophthoraLateralis.pdf.

[58] Queloz, V., Grünig, C. R., Berndt, R., Kowalski, T., Sieber, T. N. and Holdenrieder, O. (2011), Cryptic speciation in *Hymenoscyphus albidus*. *Forest Pathology*, 41, 133–142.

(g) If we see a threat on the horizon but are uncertain about the cause and the status of the organism, in light of the ash dieback outbreaks I now consider that the precautionary principle[59] should prevail. Even in the absence of a PRA an emergency ban on imports of material that might carry a new threat would reduce the threat, if it later turned out that this was a new organism (as happened in the case of *H. pseuodalbidus*). This would buy some time whilst the PRA is produced.

7. *Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?*

I do not know. However, my experience with the production of an EPPO PRA for the bronze birch borer (*Agrilus anxius*) in 2010 shows that the process of implementing controls can be slow. The main pathways of entry of this lethal pest of birch (*Betula* spp.) to the UK/EU/EPPO region include the following:

— Wood chips originating from where the pest occurs in Canada and in the USA.

— Plants for planting of *Betula* spp. originating from where the pest occurs in Canada and in the USA.

— Wood with or without bark of *Betula* spp. originating from where the pest occurs in Canada and in the USA.

Fera and the FC recommend a two-stage approach to the introduction of measures.

In the short term:

— A publicity/awareness raising campaign.

— Possible national measures (based on the PRA)

Longer term:

— Push for EU wide measures based on the PRA.

I am not aware of the outcome of the consultation on this pest and understand it is part of the Tree Health Action Plan so I hope that it is being addressed (no further information on this could be found).

8. *What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example on trade in plants, management of infected trees including saplings, and development of resistant trees?*

Emergency management theory emphasises that the vital final stage in the management of an incident is *debriefing*, which aims to identify what has been done well, and what needs to be altered or improved for the management of future incidents. This is my interpretation of question 8. The Select Committee with Defra, the FC and stakeholders are already investigating the events that lead to the findings of ash dieback in the UK and in support of this I offer the following interpretation:

(a) EPPO added *C. fraxinea* to their Alert List in 2007 and as I recall they recommended controls on planting material of *Fraxinus* spp. to limit movement. In 2008, the fungus was proven pathogenic to ash. A provisional meeting to conduct a PRA for the EPPO region was arranged by email (EPPO/FR/CSL) during 2009.

This was an appropriate response.

(b) However, when the teleomorph (the sexual stage of *C. fraxinea*) was identified later in 2009 as *Hymenoschyphus albidus*, which is a ubiquitous fungus known to occur in the UK/Europe, a decision was taken by EPPO not to complete the PRA. EPPO decided to convene a Workshop instead to be held in 2010.

This decision not to conduct a PRA is consistent for an organism with apparently widespread distribution in the region.

*However, there was awareness that the organism purported to be the teleomorph form at that stage (*H. *albidus, later disproven) in countries where the disease was being observed was behaving differently to what was known for* H. *albidus in the UK. That is to say, despite the presence of . albidus, we had not observed any diseased trees. The possibility that the dieback was caused by a fungus similar to* H. *albidus, either the same species under differing climatic conditions, or related but with a differing pathogenicity, may have been considered. In hindsight, with formal scientific justification, the implementation of procedures to reduce the risk of importing the fungus would have been consistent with international protocols, until the biology of the organism causing ash dieback was clarified.*

(c) Subsequently, *H. albidus* was differentiated into two species, *H. pseuodalbidus* and *H. albidus* (online March 2010; Queloz *et al*., 2011) and the situation changed. *H. pseudoalbidus was* a new species and is the true sexual stage (teleomorph) of *C. fraxinea*. *H. pseuodalbidus* was not known to occur in the UK so the risk to our ash trees became apparent. The authors of this paper consider that the pathogen had been introduced into Europe. They stated that "*We assume that the ash dieback pathogen is transmitted by airborne ascospores at the continental scale. In addition susceptible* Fraxinus *species have a very large and continuous distribution area in Europe. Therefore we do not believe that costly phytosanitary campaigns can stop the epidemic on the European mainland.*

[59] http://europa.eu/legislation_summaries/consumers/consumer_safety/l32042_en.htm

However, long-distance dispersal, eg with infected plant material, to yet disease-free countries which are clearly separated from epidemic regions by natural barriers, might be prevented by quarantine measures".

This publication would have confirmed the hypothesis raised in 8b and helped justify phytosanitary controls to limit the risk to the UK. If no action had been taken at 8b, then it would usefully have been implemented at this point. However, it needs to be recognised that the true pathogen might already have been present here, but remained undetected. In either case, controls on ash planting material from affected countries would have potentially limited the introduction of inoculum.

(d) The EPPO Workshop for *Chalara fraxinea* was held in July 2010. No-one from the UK attended although I had expressed a wish to attend, albeit informally. Critical information and pointers to put controls on planting material for countries outside of mainland Europe where the disease was absent (ie the UK) emerged at this meeting. Unfortunately for the UK, the meeting papers which stated this were not published until 2011. In early 2012, the first findings of ash dieback were made here.

There should have been UK representation at this meeting. In the absence of UK representation at EPPO Workshops I suggest that in future, a transcript of the meeting should be provided to scientists involved in PRA as soon as practical after the meeting.

(e) Earlier PRA-type documents exist; the EPPO Alert Listing of 2007 has equivalent status, the USDA produced a document in 2009. Both of these preceded the recognition of *H. pseudoalbidus* however, but both recognise the risk from planting material of *Fraxinus* spp..

(f) There is some discussion around the hypothesis that the entry of *H. pseudoalbidus* to the UK was in the form of windblown ascospores from the continent. There is recognition that ascospores are viable for only a limited period of time (see eg the Government publication POSTBox, December 2012, "*Transmission of ash dieback"*). There is also recognition that we do not know what concentration of ascospores is required for infection of ash. Nor do we know currently whether this threshold of viable spores would be achieved by wind movement from mainland Europe. Entry of the pathogen on infected plants would be expected to be a high-risk pathway and as mentioned already, the 2007 EPPO Alert (as I recall) recommended control on the movement of planting material of *Fraxinus*. The FR Rapid Assessment of August 2012 also recognised this as the most likely pathway of entry to the UK.

Further investigation of the behaviour of ascospores and trade movement of living plant importation will help elucidate the main pathways for entry to the UK.

However, phytosanitary controls can only be implemented on tangible pathways (ie not on wind-blown spores). This means that unless pathogens with windblown spores are controlled at an early stage, there will always be a risk of movement across a continent such as Europe, or if proven as a pathway, from mainland Europe to the UK.

(g) Before regulation can occur the current rules require that the causal organism of a disease be clearly identifiable as a unique species and that is has "*quarantine*" status (absent from the PRA area and damaging; or present but limited in distribution and under official control).

As mentioned in 8b., in the case of the ash dieback pathogen, before the recognition of *H. pseudoalbidus*, there was some debate as to why the UK was not suffering from the disease given that the ubiquitous fungus *H. albidus* was known in the UK.

It is important to realise that you do not need a lot of evidence to produce a PRA. The more you have, the less the uncertainty. However, provided the causal organism is considered unique and deemed to be the cause of the symptoms on the plant/tree(s) then a PRA can proceed.

For background, in 2004, I led a PRA on an unknown Phytophthora[60] *affecting beech and rhododendron, which was later named as* Phytophthora kernoviae. *Similarly, FR did the same in 2000 with what later became known as* Phytophthora ramorum.[61] *Very little was known about either but they were both considered to have quarantine pest status and national regulation ensued, with EC legislation following for* P. ramorum.

If our debate (8b.) had been documented in the form of a PRA, along with the earlier EPPO recommendations on controls for planting material, this would have helped justify the imposition of phytosanitary controls until the full identification of the causal organism was made. Future action might be for risk analysts to document novel situations formally for policymakers until the true situation is known, or until a structured PRA can be produced.

(h). For ash dieback, the identification of *H. pseuodalbidus* could have led to an earlier PRA but experience shows that the time taken to implement measures (at least at the EC level) may still have been lengthy.

[60] Sansford C, Brasier C, Inman AJ (2004). Pest Risk Analysis: *Phytophthora* taxon C sp. nov. (*P.* taxon C). (5 versions—February, March, September x 3).

[61] Brasier CM, (2000). Summary Pest Risk Assessment for an unknown *Phytophthora.* Forest Research, UK, 25 September 2000. 26pp.

There needs to be a rapid response to impose phytosanitary measures once a threat is suspected. If a pest has not already entered (or has entered, but remains undetected) a rapid response would buy time until a PRA is produced.

In the case of ash dieback, two options were possible—an emergency import ban pending a PRA or a PRA with a timely response to proposed measures. This had the potential to reduce the entry of inoculum.

For the future, where there is a threat that cannot be defined pending further investigation, I suggest that where policy allows, we should implement the precautionary principle based upon the evidence.

(i) A summary of needs is:

— adequate appropriate resource;

— a clear division of responsibilities;

— clear co-ordination of actions; and

— a timely response—including, where appropriate, implementation of the precautionary principle.

January 2013

Written evidence submitted by the Scottish Forestry Trust

1. I am pleased to submit evidence from The Scottish Forestry Trust to the Environment and Rural Affairs Committee Inquiry on Tree Health and Plant Biosecurity. The Inquiry has been established to examine the adequacy of the Government's approaches for detecting and managing potential threats to tree and plant health, particularly in respect of the latest outbreak of *Chalara fraxinea* affecting Ash.

2. By way of introduction, The Scottish Forestry Trust is the leading Charitable Trust providing funds for research, education and training in support of UK Forestry. Established in 1983 by a gifting of share capital, the Trust has a remit to provide private sector funds to support research, education and training throughout UK forestry. Since 1983, we have provided in excess of £2 million in support of 140 projects ranging from support towards postgraduate education through to contributing towards industry-applied research and assisting policy formulation and development.

3. We are currently supporting a portfolio of projects with a total value in excess of £1m and within them; we are supporting research into *Dothistroma septosporum*, a tree disease affecting many of the pine species in the UK. We recognize and support the need for continued funding into tree diseases generally and particularly because of their major impact on the environment, landscape and wider economy.

4. Turning to the questions posed by the Committee, our response to them is as follows:

1. *Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?*

4.1 We believe that there is confusion between the roles of DEFRA, the Forestry Commission and Forest Research in terms of the boundaries delimiting their responsibilities. Part of this problem arises because of the lack of a solid definition of a "tree". DEFRA takes responsibility for woody shrubs and young trees whilst the Forestry Commission and Forest Research for more mature trees. It is often not clear as to where the responsibility changes from one to the other and we suggest that further clarification of this definition is required.

2. *Are the Defra, Forestry Commission and Food and Environment Research Agency (FERA) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?*

4.2 Although contingency plans may be adequate where an organism is relatively restricted in distribution and in its ability to disperse (eg the Asian Longhorned beetle outbreak in Kent, 2012), containment is almost impossible *once* the organism has entered a given territory where dispersal is via spores produced in vast numbers.

It took a long time to issue the import and movement banning order for ash trees and although the order has now stopped the import and UK internal movement of ash for woodland planting, we have little idea as to how many larger ash were brought into the UK over recent years or of how many have been imported for ornamental purposes. Such plants might include the weeping ash (*Fraxinus excelsior* pendula), the yellow-stemmed variety "aspidea" or the single-leaf ash (*F. excelsior* diversifolia).

3. *How effective is co-ordination between agencies such as Natural England, the Forestry Commission and FERA?*

4.3 The Forestry Commission and FERA showed excellent coordination during the Asian longhorned beetle outbreak, and again after *C. fraxinea* was found in ash woodlands.

4. *Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?*

4.4 The simple answer to each of these questions is "NO". In the last 20 years, it has become increasingly difficult to source UK funds for research on tree health issues; any proposals that did go forward had to be adapted to make them appear focused on purely ecological issues; a straightforward proposal on the biology of a disease or a pest would, as a rule, be rejected with little consideration. Funding has, however, been forthcoming from EU sources. The lack of interest in tree health in the UK from a funding perspective has had the added consequence of reducing the numbers of people in the UK with real knowledge of pests and diseases in forests and woodlands. The total number of tree pathologists in the UK is probably now about five or six, and the age range of these people is heavily weighted towards the "over 55s". The situation with forestry pests is similar. This does not bode well for the future robustness of tree pathology in the UK and we believe that there needs to be much better education and training in the ecological impacts of tree pests and diseases.

5. *Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, biocontrols and chemical or management responses?*

4.5 The answer to this question is also, unfortunately, "NO". Without adequate research funding, it is almost impossible to carry out this sort of work. The possibility of resistant ash emerging from the destruction wrought by the *Chalara* outbreak is very optimistic, particularly with additional threats from, for example, the emerald ash borer, which is currently heading into Europe from the east. Selection and breeding for resistance in any tree species must take into account multiple biotic hazards, both pest and pathogen and to carry out such research and development work requires time and sustained funding.

6. *Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls? Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?*

4.6 With the current revisions to the EU plant health regulations, it is difficult to answer this question directly. Certainly the current regime does not allow sufficient flexibility. There are many flaws in the regulations, basically because they are there to protect trade, not the environment. There is now an additional huge threat as wood fuel is considered for firing power stations: the amount of wood required to replace fossil fuels is immense and could never be covered by UK production alone. Any imported fuel wood is very unlikely to be treated to reduce threats from pests and pathogens. This problem must be considered before we start importing fuelwood for any purpose from other EU countries.

7. *What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example, on trade in plants, management of infected trees including saplings, and development of resistant trees?*

4.7.1 It appears that other EU member states have done little to try and contain the Chalara outbreaks. Some interesting research is now emerging on the relative resistance of different ash genotypes to Chalara, but there is no real work on developing resistant lines of ash for outplanting as yet. Moreover, the emerald ash borer MUST be taken into consideration in any selection programmes that are (eventually) funded, as outlined above.

4.7.2 The main positive outcome from the Chalara issue has been the enormous public interest; this process suggests that tree health is considered to be a major issue by the public at large. The consequence of this interest is that tree health has attained a higher political profile, and, perhaps, more research, more training and better import controls will ensue. It is also very important to note that ash dieback is just one of hundreds, if not thousands, of biotic threats to forest and woodland ecosystems in the UK: perhaps if nothing else, this outbreak has been a wake up call both politically and amongst the general public.

5. I trust that this response is helpful to the Committee. I also confirm that The Scottish Forestry Trust has no objection to this submission being published in the Committee papers.

8 January 2013

Written evidence submitted by Scottish Natural Heritage

1. *Are the roles and responsibilities of public agencies for monitoring incidences of plant and tree diseases or pests sufficiently clearly defined?*

1.1 The roles and responsibilities of public agencies are clear where the plant pathogens impact on economic interests. Responsibilities are less clear where the impacts are on other interests such as landscape and biodiversity. Information on who does what is scattered across various agencies' websites and there is no single resource where the public can go to find this out.

1.2 A partnership approach is required because plant diseases and pests often cover the remit of several agencies. For example, the plant disease *Phytophthora ramorum* was originally found in Britain on

rhododendrons and other ornamental shrubs, before affecting commercial larch plantations and the native shrub, bilberry. Control measures usually require the cooperation of land owners, industry and the public.

1.3 Creating a single Scottish Government portal for information on plant pathogen information would also help.

2. Are the Defra, Forestry Commission and Food and Environment Research Agency (Fera) contingency plans for managing a disease outbreak, such as Chalara fraxinea, adequate and appropriate to control its spread and mitigate the impacts of disease?

2.1 The contingency plans for managing disease outbreaks are fit-for-purpose. However, as the Chalara fraxinea outbreak highlights, controlling the spread of diseases once they become established is costly and challenging. Priority needs to be given to disease prevention—Pest Risk Analysis and biosecurity measures to help prevent the establishment and slow the spread of diseases. It the case of Chalara fraxinea, little could have been done to prevent the spread of wind-borne spores to south-east Britain, but measures may have been put in place sooner to slow the spread to other parts of the country. Lessons could also be learned from public awareness campaigns such as *Check, Clean, Dry* aimed at encouraging the public to take steps to prevent the spread of non-native species.

3. *How effective is co-ordination between agencies such as Natural England, the Forestry Commission and Fera?*

3.1 We are unable to comment on the effectiveness of co-ordination between English-organisations. However, the UK Joint Nature Conservation Committee (JNCC) support company played a vital role in connecting the statutory nature conservation bodies (SNCBs) with the Defra-led response. Through JNCC we could have more input at the GB level, for example, to help with identifying future research priorities.

3.2 Within Scotland coordination between the agencies with lead responsibility for plant health seems to have been effective. Scottish Natural Heritage's involvement in plant health issues has, mainly been advising Outbreak Management Teams on potential natural heritage impacts. Cross-cutting groups such as the Tree Health Action Group in Scotland should improve wider coordination and communication in future.

4. *Are there sufficient resources for research to provide effective evidence on the emergence of new threats to trees and plants and for management of existing threats? Is there sufficient coordination of research effort and does the UK have an adequate pool of the right skills to draw upon?*

4.1 New threats to trees and plants, especially fungal diseases, are emerging with increasing regularity. The expansion in global trade and travel brings plant pathogens into contact with potential hosts which have little or no resistance to them. There is also evidence to suggest that bringing together similar micro-organisms from different continents may be increasing the rate of disease mutation. Scottish Natural Heritage would support an increase in resources for research and to develop expertise in this area.

4.2 We are concerned that Pest Risk Analysis focuses mainly on plant health issues with economic impacts interests and not enough on plant diseases and pests with potentially high ecological impacts. There needs to be more research effort in this area and better coordination between the plant health regime and non-native species control mechanisms.

4.3 Early detection systems, including sharing information across countries, also need to be resourced more effectively.

5. *Are sufficient resources being put into developing effective responses to plant health threats, such as improving resistance, biocontrols and chemical or management responses?*

5.1 Scottish Natural Heritage supports the development of effective responses to plant health threats. However, it is important that biocontrols and chemical or management responses take account of harmful effects on the environment and native species and avoid these where possible, or mitigate them where it is not. There are also risks associated with breeding resistant strains, including reducing genetic diversity by selecting for single traits, which may lead to reduced fitness in relation to other environmental threats. Resistant plants could also act as a vector and spread disease to previously unaffected areas.

5.2 The primary focus should be on prevention rather than control. Attention should be given to enhancing the resilience of our woodlands to pests and pathogens by:

- reducing pressures, such as herbivore impacts and invasive non-native species;
- promoting greater a greater diversity of tree species (including exotic species where appropriate); and
- restoring natural woodland processes, such as regeneration, to encourage natural selection for resistant strains.

6. *Does the international regime for trade in plants and the EU plant health framework provide a sufficiently flexible and responsive framework to respond to newly identified pests and diseases or to those that are spreading? Can these regimes impede stronger import controls?*

6.1 Pest Risk Analysis is robust and flexible process, which allows for a rapid response to emerging threats from harmful organisms. Delays are more likely to be caused by the requirement to gather evidence that the harmful organism is not endemic or established in the member state. A more flexible, risk-based approach to establishing the level of evidence necessary to set up Protected Zones might avoid such delays in the future.

7. *Are plant health controls sufficiently broad to cover trade in tree and plant products such as biofuels?*

7.1 The tools provided by the EU plant health framework are adequate to cover trade in tree and plant products such as biofuels. However, before these tools can be used, research is needed to establish the level of risk from plant diseases and pests being transmitted via this pathway.

8. *What lessons are being learnt in the UK from the management of Chalara dieback of ash in other EU Member States: for example on trade in plants, management of infected trees including saplings, and development of resistant trees?*

8.1 The DEFRA evidence plan (under development) and the *Fraxback* initiative demonstrate that lessons are being learnt from other EU member states. Knowledge exchange about threats and how to manage of plant pathogens, and non-native species more generally, plays a vital role in supporting responses to emerging threats.

January 2013

Written evidence submitted by Sir Richard Storey

Preface: I see that you had three witnesses before you in November 2012 and I have looked at their expertise:

i. Professor Ian Boyd (new Chief Scientific Advisor to Defra): he specialises in sea mammal research, marine science in Scotland, the oil and gas industry, polar science, whales and military sonar, Scottish fisheries, the effects of sound on marine life, and has received a medal from The Zoological Society and another from the Royal Society of Edinburgh for polar science.

ii. Mr Martin Ward: he specialises in plant health, seeds, and plant produce. He covers plant health, bee health, plant varieties and seeds.

iii. Mr Roger Coppock seems to be an administrator. He has worked a lot in Forestry Commission admin as a district forester, head of business development, research into purchasing and overall responsibility for tree health.

My conclusion: there seem to be nobody among these three Defra witnesses who appear to have any knowledge or experience on how to protect the United Kingdom from pathogens from abroad and, more specifically, any understanding of how it might be possible to protect the UK Ash forest from Chalara fraxinea.

It astonishes me that the Chief Scientist at Defra is wholly unversed, according to his credentials, in anything relevant to this Inquiry. These three Defra scientists would appear to be devoid of any relevant scientific skills or experience.

I find this gravely disappointing, very worrying, and most surprising.

My Evidence in Rsponse to your Inquiry

Whilst that I note that the Committee would like my paragraphs to be numbered, it would also have been helpful if the invitation to give evidence had also been numbered! Accordingly I have numbered them 1–7 and will comment as appropriate below in accordance with those numbers.

1. I cannot say whether the *roles and responsibilities* are *sufficiently clearly defined*… but it appears obvious that, however defined, they were ineffective in monitoring Chalara fraxinea that has been known about in some detail since it was first fully investigated by Polish scientists in Poland and Lithuania in 1992.
2. Contingency plans: the contingency plans for Chalara fraxinea should have included work since 1992 in preparation of an antidote since it was detected and it would seem that no work at all was done on this and, indeed the thought of such work may even have been rejected by Defra and/or Fera. In my opinion Government should have taken the lead in developing an antidote and have had it ready by the time any infection was discovered in the UK. By antidote I mean not only a fungicide that would safeguard the trees but one that could be used with aerial spraying in a woodland in the same way as farmers spray their crops and bracken has been sprayed in this country for 50 years. Instead of that, all I have received from the Department of the Environment is information on how to monitor my dying trees…
3. I cannot say how effective was the *co-ordination* but it appears obvious that nothing was done to save UK Ash forestry.

4. With regard to *sufficient resources*, it appears obvious that the resources are either wholly insufficient or in the wrong place at the wrong time in the wrong way.

   Likewise it would seem that there are not proper skills in the silvicultural departments in the Ministry of Environment and it is said that these forestry resources were pared down when Mr Hilary Benn and Mr Miliband were at the Department of the Environment and resources for tree diseases and health were diverted to *social forestry*—whatever that may mean. It would seem, according to an article that appeared in The Times on 22nd January 2013 page three that the Secretary of State was advised by the *deputy in charge of zoonoses* (animal diseases) when he sought advice on forestry. It would appear that there is wholly insufficient research effort, knowledge, and certainly research results for silviculture in the Department.

5. Are sufficient resources being put into *developing effective responses*? It would appear: patently not. The responses seem to be futile.

6. *International regime*: it would seem that the European Union did nothing for 20 years to protect this island country or any country or allow us to protect ourselves from the arrival of Chalara fraxinea. This disease spread slowly across Europe to Denmark where ten years ago it arrived and it has killed, or is in the process of killing, 95% of Danish Ash. Meanwhile nothing was done to save us in this country. Whether it was the fault of the European Union or of our own resources, I cannot tell, but what I can tell is that in New Zealand it is forbidden to import even a muddy pair of shoes and certainly not a wooden walking stick. New Zealand is an island that protects itself ferociously against the arrival of anything that could bring in a speck of plantlife, disease, or infection, in any shape, form, or kind. Great Britain is also an island. (It is not certain how Chalara fraxinea arrived in Great Britain. It was definitely widely imported on infected saplings. While it may also have arrived *on the wind*, Mr Terry Mabbett in his article in Forestry Journal December 2012 *Blowing in the Wind* explains how this is most unlikely so, perhaps, it is being used as an alibi.)

   Of course, Chalara fraxinea is only one of any number of pathogens and insects putting our forestry at risk. Millions of trees have been cut down in the USA trying to get rid of the Emerald Ash Borer and what are we doing, one wonders, in preparation for that? (It is now on our last mass west of Moscow.) Have any steps been taken to prevent diseased or infected timber being imported? It was possible to import Elm disease from America. We appear to have learned nothing from that.

7. With regard to the importation of infected plants, our policy could be summarised as *very much too little and late*. To allow Ash to continue to be imported in the way that it was ever since 1992 appears, at best, delinquent.

In conclusion, a few points in summary:

i. I believe that Great Britain has 126 million Ash trees in our woods (source recent Forestry Commission survey) and not the 80m quoted in the Select Committee announcement.

ii. I further believe that there are 13 million ash hedgerow trees.

iii. It appears that the authorities in this country have been grossly negligent for 20 years well aided and abetted by the European Union authorities.

iv. I believe we should have a strict import control like New Zealand and not allow in anything without proper quarantine.

v. I think we should be prepared to produce, and have ready for use, prophylactics against infections that do arrive and not just simply witness the effect of death and disease upon our treasured forestry.

vi. A person whose opinion I much respect, have known for many years, and is in an ideal position to comment, has described Defra to me as:

   "The causes of the disaster (Chalara fraxinea) are simple. Firstly, trees and forestry are a low priority behind farming, water, and nature conservation in one of the weakest departments in Whitehall. That Department, DEFRA, is weak because, as a society, we think we are in control of nature and human priorities, like free trade, come first."

vii. You will be familiar with the European Co-operation meeting held in Vilnius last year. This was attended by plant health *experts* from all over Europe. I found instructive two paragraphs from which I quote you excerpts:

   ..there was universal agreement that the action in the UK and Republic of Ireland to attempt to control the disease will prove to be futile ...

And a second little nugget: under the heading *Communications with UK authorities:*

…the questions posed directly by DEFRA and the FC to national experts throughout the EU has suggested that either there was little understanding about Ash dieback among researchers in the UK or that there was a low level of confidence in the advice available from the scientific community in the UK…

February 2013

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