



Ash dieback disease: *Chalara fraxinea*

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Chalara fraxinea is a fungus which is causing a serious disease of ash trees known as ash dieback. The infection causes wilting leaves and crown die back and it usually leads to tree death.

The ash tree is a significant part of the UK landscape and one of Britain's few native, tree species with important conservation value. There are approximately 80 million ash trees in the UK representing 5% of Britain's woodland cover.

Ash dieback was confirmed in the UK in February 2012 and a ban on ash imports introduced on 29 October 2012 after a voluntary moratorium by the industry. The Horticultural Trades Association asked for a ban back in 2009, having seen the impact of the disease in Denmark. Much of the immediate debate on the issue therefore focussed on how the UK Government reacted to these early warnings and why it did not act sooner to ban ash imports.

Now that the disease has been confirmed in established trees in the UK, the focus has shifted to informing and developing action plans to deal with the disease in the short and longer term. In addition, a Tree Health and Plant Biosecurity Taskforce has been established to review the UK's strategic approach to tree health and biosecurity. Its final report is due in January 2013. The Task Force published an [interim report](#) on 6 December 2012 along with Defra's [Interim Chalara Control Plan](#). This note will be updated to provide more detailed analysis of these in due course.

The current scientific understanding is that the disease only spreads in the summer (the period of spore release) so the Government is seeking to develop its response whilst there is a window of opportunity for action. Overall, the current approach is to try and slow the spread of the disease and to minimise its impact to gain time to find those trees with genetic resistance and to restructure our woodlands to make them more resilient.

POST Note No 394 [Invasive Tree Pests and Diseases](#) (October 2011) provides further detail on the UK plant health regime in general.

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1 Chalara fraxinea and ash dieback

A serious disease of ash trees known as ash dieback has been spreading across northern Europe since 1992 when it was first reported in Poland. Scandinavia has been particularly affected with Denmark having an estimated 90% of its ash trees infected.¹

Unfortunately, it was only in 2010 that the pathogen causing the disease was properly identified as the fungus *Chalara fraxinea* (*C.fraxinea*) and its fruiting body *Hymenoscyphus pseudoalbidus* (*H. pseudoalbidus*). Its origins are still uncertain but it is thought to have been introduced to northern Europe on nursery stocks from Asia, probably Japan or Korea. The fungus may have lived on a different species of ash tree and caused no damage but then found the European ash to be more vulnerable.²

Identification of the causative pathogen was not straight forward and there has been some confusion over the years regarding the form of the disease. Scientists have only fully understood the development of the stages of the infection in the past six years. This uncertainty has affected the UK response and that of other countries (see sections 3 and 4 below). In the UK, until 2010, it was assumed that the organism responsible for the outbreak of ash dieback in Continental Europe was one that was already present in the UK but was not causing harm.

The UK Government is leading on the response to ash dieback as an international issue although forestry is a devolved matter. The key Government agencies involved are the [Forestry Commission](#) and the [Food and Environment Research Agency](#). Together, with the devolved administrations they form the UK Plant Health Service and work with other EC Member States and the European Commission to agree appropriate plant health rules for Europe and co-ordinate their implementation. The Government has said that daily contact has been made with the devolved administrations on the issue.³

1.1 The nature of the disease

C.fraxinea, along with its sexual (fruiting body) stage *Hymenoscyphus pseudoalbidus*, causes wilting leaves accompanied with shoot, twig and branch dieback and bark lesions.⁴ Infection is via spores from fruit bodies on leaf litter and leaf infections are thought to play a key role in the disease cycle. The leaves act as both an infection site from which the fungus grows into shoots and twigs and, after they are shed, by supporting the growth of the fruiting bodies of *Hymenoscyphus pseudoalbidus*.⁵

The tree can continue with a diminished crown but the infection will lead to tree death.⁶ The Forestry Commission has produced a [pictorial guide](#) which shows the effects of the disease on

¹ Forestry Commission website, [Chalara dieback: Key scientific facts](#), 7 November 2012

² HL Deb 5 November 2012 c.862 and presentation from Dr Peter Freer-Smith, Chief Scientific Adviser Forestry Commission at Parliamentary Science Committee on 27 November 2012

³ HC Deb 9 November 2012 c.790W

⁴ Forest Research, [Rapid Risk Assessment: Rapid assessment of the need for a detailed Pest Risk Assessment for Chalara fraxinea](#), Version 3.1 revised 9 August 2012, Table 2, p.4

⁵ Forest Research, [Rapid Risk Assessment: Rapid assessment of the need for a detailed Pest Risk Assessment for Chalara fraxinea](#), Version 3.1 revised 9 August 2012, p.4

⁶ Forestry Commission, [Ash dieback disease](#) page on 27 November 2012

different ages of tree. As leaf loss is the main symptom it is difficult to identify affected trees during the autumn and winter months.

The fungus has infected many species of ash, but with differing intensities. Common ash (*Fraxinus excelsior*), which is the species native to the UK, is the most severely affected species including its 'Pendula' ornamental variety. Narrow-leaved ash (*Fraxinus angustifolia*) is also susceptible.

Government scientists have set out the most up-to-date understanding of the disease in a [key scientific facts](#) document about *C.fraxinea*.⁷ Their assessment agreed with the earlier Pest Risk Analysis carried out in August 2012 (see section 4), and concluded with various degrees of confidence (according to the level of experimental and observational evidence currently available):⁸

- the spores are unlikely to survive for more than a few days;
- spore dispersal on the wind is possible from mainland Europe;
- trees need a high dose of spores to become infected;
- the spores are produced from infected dead leaves during the months of June to September;
- there is a low probability of dispersal on clothing or animals and birds;
- the disease will attack any species of ash;
- the disease becomes obvious in trees within months rather than years;
- wood products would not spread the disease if treated properly;
- once infected, trees can't be cured; and
- not all trees die of the infection, and some are likely to have genetic resistance.

There is no evidence, as yet, that *C. fraxinea* can spread to other tree species or that it is harmful to the health of people or animals.

Tree survival rates

The disease is particularly destructive of young ash plants, killing them within one growing season of symptoms becoming visible. Older trees can survive initial attacks, but tend to succumb eventually after several seasons of infection.⁹ As some ash species show very few symptoms after infection, they may act as undetected carriers.

It is thought that some trees have or are capable of developing genetic resistance to the disease and Swedish research suggests that this number might be significant.¹⁰ There is particular evidence of low susceptibility to disease in some Asian ash trees.¹¹ This may be important in developing resistant strains of ash (discussed below in section xx as part of Chalara control measures) especially as the fungus is thought to have originated in Asia.

Estimates of how long trees are likely to survive with *C.fraxinea* are as follows:

- Trees under 10 years of age are likely to die from *C.fraxinea* in 2-10 years

⁷ Forestry Commission website, [Chalara dieback: Key scientific facts](#), 7 November 2012

⁸ Forestry Commission, [Chalara dieback of ash \(Chalara fraxinea\)](#) page on 28 November 2012

⁹ Forestry Commission

¹⁰ HC Deb 5 November 2012 c.862

¹¹ Forestry Commission website, [Chalara dieback: Key scientific facts](#), 7 November 2012

- Trees under 40 years old will die in 3-5 years if also infected with honey fungus¹², and likely more rapidly if the tree is already debilitated
- For mature trees more than 40 years old, there is no direct evidence of tree deaths just from *C. fraxinea* to date, but there is little comprehensive survey data from Europe on which to base firm conclusions¹³

1.2 Current spread in the UK

C. fraxinea is believed to have entered Great Britain in February 2012 on plants for planting imported from nurseries in Continental Europe. However, infected older trees have since been found in East Anglia, Kent and Essex with no apparent connection with plants supplied by nurseries. This clustering on the East Coast has meant that UK plant health authorities (Food and are therefore also investigating the possibility that it might have entered Britain by natural means. These include being carried on the wind or on birds coming across the North Sea, or on items such as footwear, clothing or vehicles of people who had been in infected sites in Continental Europe.¹⁴

The Secretary of State for Environment, Food and Rural Affairs, Owen Paterson, has recently stated that “whilst the evidence on *C. fraxinea* has developed rapidly over the past few weeks, a significant level of uncertainty regarding its spread and impact remains.”¹⁵ Defra has commissioned state-of-the-art modelling of the spread of the disease and its impact of the disease across Great Britain to help inform the Chalara control plan (see section 5).

There has been some speculation that extreme wet weather may have been a contributory factor to the spread but the Government has said that there is no evidence of this although there is scientific recognition that *C. fraxinea*, like other fungal pathogens is more likely to produce fruiting bodies in moist conditions.¹⁶

A full history of the discovery of *Chalara* in the UK is provided in Section 4.

The Forestry Commission regularly updates information about the spread of the disease on its [website](#) and provides a map of confirmed findings.

Confirmed findings as at 5 December 2012 were:¹⁷

Nursery sites	17
Recently planted sites	119
Wider environment e.g. established woodland	155
Total:	291

The confirmed findings are steadily rising in the wider environment and recently planted sites but the nursery figures are the same as the previous findings update at 28 November 2012.

¹² One of the ways that Chalara fraxinea causes tree death is that the lesions which it causes in tree bark form a site for infection by other harmful fungi such as Honey fungus

¹³ Forestry Commission website, [Chalara dieback: Key scientific facts](#), 7 November 2012

¹⁴ Forestry Commission, [Chalara dieback of ash \(Chalara fraxinea\)](#) page on 4 December 2012

¹⁵ Letter to Anne McIntosh MP, Chair of the House of Commons EFRA Select Committee from The Rt .Hon Owen Paterson MP, Secretary of State for Environment, Food and Rural Affairs, 5 December 2012

¹⁶ HC Deb 12 November 2012 c.8W

¹⁷ Forestry Commission, [Chalara dieback of ash \(Chalara fraxinea\)](#) page on 4 December 2012

2 The importance of ash in the UK

The ash tree is of economic, environmental and social importance in the UK. The Government has estimated that reducing the annual rate of spread of *C.fraxinea* by 1% over 25 years would generate public welfare benefits of £40-130m over that period.¹⁸

2.1 A common, native tree

The ash tree is a significant part of the UK landscape and one of Britain's few native, tree species. There are approximately 80 million ash trees in the UK representing 5% of Britain's woodland cover.¹⁹ If the disease were to follow the same progress in the UK as in Denmark, where only 5-10% of trees remain without symptoms, it would mean infection in up to 72 million trees. This would be more than double the amount of elms (approx 30 million) lost to Dutch Elm Disease in the 1970s.

The Common or European Ash, *Fraxinus excelsior*, was the third most commonly recorded broadleaved species in Great Britain in 2011 after oak and birch and the second most widely planted broadleaved tree.²⁰ It is native to much of continental Europe and the British Isles and is considered to be an intermediate between a pioneer species (i.e. the first to establish in a new territory) and a permanent forest component. It tends to occur in groups within mixed broadleaf woodland with pure stands or scattered trees being less common.²¹ However, it is still the most numerous tree species outside woods with 10% found in a non-woodland landscape e.g.in hedgerows.

An important habitat

Ash has a high conservation value providing a habitat as a general, woodland tree and component of hedgerows and a specialised habitat in its own right providing a home for up to 29 invertebrates and various fungi and lichens. The loss of ash in woodland will have knock-on effects to the wider ecosystem. Light levels will increase perhaps favouring flora and fauna associated with open woodland. It may also allow other trees to dominate a woodland in the longer term, such as beech and sycamore which have denser canopies than ash and again bring species changes. The loss of ash as hedgerow trees will have a visual and ecological impact and it will be hard to re-establish hedgerow ash because of the widespread practice of mechanical cutting of hedges.²²

The reliance of certain species on the ash tree also brings the risk of local extinctions if ash numbers fall dramatically. According to the Woodland Trust, modelling based on data on the disease in Europe suggests that once infection and decline of ash trees reaches 60-65% coextinction risk accelerates significantly.

The Woodland Trust has prepared a [Conservation Response](#) to the Chalara outbreak which it will keep under review. This details the potential ecosystem impacts of a decline in ash trees as well as suggesting appropriate conservation responses.²³ Overall, the Trust is suggesting a response which concentrates efforts on areas with high resistance and conserves ash through selective

¹⁸ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.5

¹⁹ HL Deb 5 November 2012 c.877

²⁰ ²⁰ Forest Research, [Rapid Risk Assessment: Rapid assessment of the need for a detailed Pest Risk Assessment for Chalara fraxinea](#), Version 3.1 revised 9 August 2012, p.6

²¹ ²¹ Forest Research, [Rapid Risk Assessment: Rapid assessment of the need for a detailed Pest Risk Assessment for Chalara fraxinea](#), Version 3.1 revised 9 August 2012, p.6

²² Hillary Allison, Director of Policy, Woodland Trust speaking at the Parliamentary Office of Science and Technology event, A Sleeping Canker? Tree Disease Biosecurity, 28 November 2012

²³ Woodland Trust, [The common ash tree \(Fraxinus excelsior\) and ash dieback disease \(Chalara fraxinea\): A Conservation Response](#), 16 November 2012

breeding but avoids the use of chemical fungicides (due to their impact on non-target species) and counter-productive sanitation felling (which may remove a source of genetically resistant trees as well as being high cost and logistically difficult).

2.2 Imports and Exports

The UK was the third largest net importer of forest products in 2010, behind China and Japan.²⁴

[Confor](#), a membership organisation for those involved in forestry and forestry products, offers the following information on UK tree imports:

- Over 70 million plants for forestry planting are annually produced in the UK currently (by both Forestry Commission and private nurseries), whilst approximately 10 million plants are imported for forestry planting annually. Some plants are exported by UK nurseries however the bulk is planted within the UK.
- Confor's Nursery Producers Group represents the seven largest forest nurseries in the UK and they collectively produce 47 million trees per year and import 10 million. Membership rules insist that seed provenance information is made available to customers, as well as details of which country the plants were grown in.²⁵

The UK imports high volumes of ash for forest reproductive purposes (several hundred thousand) and landscaping and substantial volumes for non-forestry purposes.²⁶ Ash wood is tough and flexible making it useful for furniture and tools and sports handles. Ash can also be grown as coppice producing good firewood and charcoal due to its high calorific value. Approximately half of ash saplings and young trees planted in the UK are imported.²⁷

The HTA estimate that nearly 1.5 million ash trees have been imported by the nursery trade over the last 12 months and nearly 4 million since January 2009. This doesn't take into account imports by the landscape and construction market which could well increase import numbers to nearer 3.5 million trees per year which could make imports as high as 60% of the market.

Ash trees are becoming increasingly popular in landscape design and different species may be sought for different ornamental and structural attributes. However, it seems that no official records are kept of the numbers of semi-mature specimens imported into the UK for landscape purposes. The Forestry Commission's Forest Reproduction Database shows that in 2011, 560,000 bare-rooted ash trees were imported to the UK for forestry purposes. These came principally from Germany, the Netherlands and Belgium, with a smaller number coming from France.

Seeds of the native *Fraxinus excelsior* ash are frequently sent abroad from the UK, to larger nurseries to be "grown on" and then the trees grown from these seeds imported back and sold as having UK provenance.²⁸

This large movement of ash material and import from a range of countries with ash dieback means that the potential for the spread of *C.fraxinea* is high in the UK. This is why the UK has implemented restrictions on the import and movement of ash trees (see section 4.1 below).

The [Horticultural Trades Association \(HTA\)](#) has suggested that UK imports would not be so high if the process of tree procurement and agreement of grant funding in the UK took place earlier to provide stability in the market and gave UK growers the confidence to grow trees for the home

²⁴ <http://www.forestry.gov.uk/forestry/infid-8xfcwy>

²⁵ *Confor welcomes Government proposal to boost plant health resources*, [Confor](#), 1 November 2012

²⁶ FERA, *Cover letter on Chalara Fraxinea*, October 2012

²⁷ Defra, Interim Chalara Control Plan, 6 December 2012, p.2

²⁸ Woodland Trust calls for ban on ash imports, [The Landscape Institute](#), 8 October 2012

market.²⁹ Confor agrees and believes that the way that planting grant applications work causes uncertainty, meaning that foresters are mostly unable to order plants years in advance. The only way that nurseries can provide sufficient stock on demand is by topping up from imports.³⁰ Defra's Interim Chalara Control Plan acknowledges this issue and this policy area is going to be reviewed.³¹

3 Early warnings - *C.fraxinea* in Europe

Ash trees were first recorded dying in large numbers from what is now believed to be this newly identified form of ash dieback in Poland in 1992, and it spread rapidly to other European countries. At the time little was known about the pathogen which made it hard to control and, according to Defra, for the most part no action has been attempted in Europe to slow the spread of the disease.³²

In some countries, such as Poland and Norway, the dieback was first attributed to frost damage and this delayed the response. In Poland, they noticed that the leaves of young ash trees were turning brown at the wrong time of the year but no-one knew why. As ash is very sensitive to frost, they thought the damage was caused by the last frost of the year in spring, rather than by disease.³³ In Norway, it is likely that extensive winter damage in 2007 also camouflaged the dieback damage and it was only later picked up through the testing of infected nursery stock.³⁴

The maps below illustrates the spread of Chalara across Northern Europe and its timeline. The timings are those now recognised with hindsight rather than when the disease was actually recorded.

Maps showing European spread (retrospective confirmed presence) of *Chalara fraxinea*

Cases - 1990s



²⁹ Horticultural Trades Association, [Ash growers count the cost of Chalara](#), 26 November 2012, See also [Devon nursery burns all of its 7,000 ash saplings to help prevent disease](#), *Western Morning News*, 6 November 2012

³⁰ Confor, [Confor gives qualified welcome to Chalara control plan](#), 6 December 2012

³¹ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.14

³² Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.4

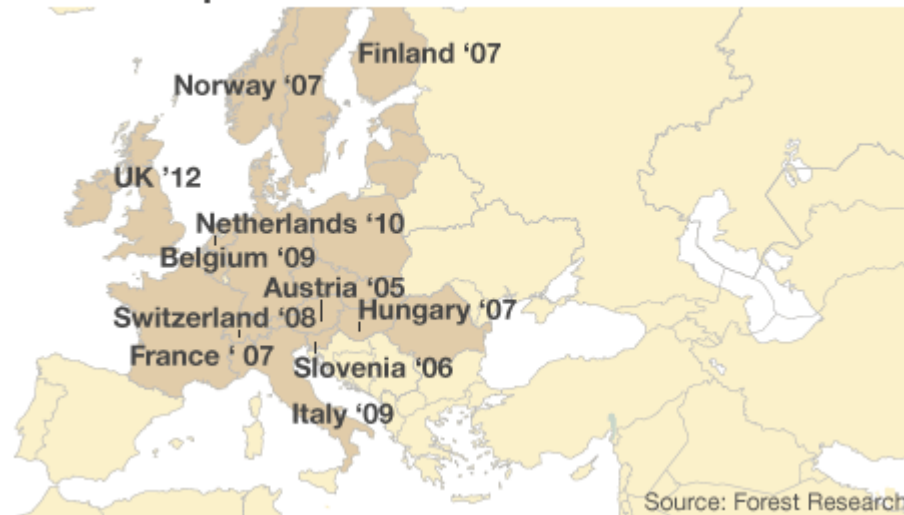
³³ Ash dieback - the ruined Polish forest where deadly fungus began", [The Telegraph](#) 11 November 2012

³⁴ Solheim, H; Timmermann, V; TalGø, V; and Røsberg, I, [Ash dieback in Norway](#), *Forstschutz Aktuell* 55, 2012

Cases - 2000-2004



Cases - 2005-present



Based on map provided by Euforgen.

Prior to 2010, the scientific evidence in Europe indicated that the organism responsible for ash dieback disease was a form of one that was already widespread and native in Great Britain, *Hymenoscyphus albidus*. *H.albidus* was identified in the UK in the mid 19th century as a natural, symbiotic Speeding up the decomposition of leaves on the forest floor it increased the release of nutrients to the wider environment. The UK also has the natural phenomenon of ash dieback which you would expect to see in dry year.³⁵

In 2006 the fungus's asexual stage, *C. fraxinea*, was first "described" by scientists, and it was added to the [European and Mediterranean Plant Protection Organisation \(EPPO\)](#) alert list when the thinking was that it was an asexual form of the benign *H.albidus*. However, in 2010 its sexual stage, *Hymenoscyphus pseudo-albidus*, was described.³⁶ This confirmed that scientists were

³⁵ Dr Peter Freer-Smith, Forestry Commission Chief Scientific Adviser speaking at Parliamentary Science Committee meeting on 27 November 2012

³⁶ Forestry Commission News Release 15/11, [Efforts stepped up to tackle disease of ash trees](#), 24 October 2012

dealing with a different organism, closely related to *H.albidus*. This was a "turning point in the science".³⁷

Much has been made of the fact that the Horticultural Trades Association wrote to the Forestry Commission in 2009 to request a ban on the import of ash to the UK having seen the situation with Ash dieback in Denmark. At this time, the Forestry Commission thought it was dealing with a pathogen already present in the UK and this precluded the UK from initiating an emergency response under the EU Plant Health Directive and World Trade Organisation phytosanitary rules. and using import restrictions as a means of control. The Head of Plant Health therefore **responded** that "our hands are tied" but explained that nevertheless the Forestry Commission had initiated a survey of ash trees to try and better understand the distribution of *H.albidus* in the UK and was exploring whether other avenues of action were possible.³⁸

4 Response to *C.fraxinea* in the UK

Table 1 sets out the key events relating to the discovery of *Chalara fraxinea* (*C.fraxinea*) in the UK. The UK Government is responsible for forestry in England and international matters and is therefore leading on the *Chalara* outbreak.

4.1 Initial discovery and action

The presence of *C. fraxinea* was first confirmed on 7 March 2012 having been discovered in February 2012 during a routine inspection of a nursery in Buckinghamshire. The case involved young plants only recently circulated to customers.³⁹ It was not until 29 October 2012 that ash imports to the UK were then restricted to slow the spread of the disease (see section 4.1).

The Government said that at the initial confirmation of *Chalara* it had:

"no reason to believe that this was anything other than an isolated incident, requiring trace forward and action to destroy any potentially infected plants that had been circulated".⁴⁰

Many have wondered why it took so long for Ministers to be informed of the finding. In a recent Lords Written Answer, Lord De Mauley said that many interceptions of imported plants and plant products are made each month involving unregulated, as well as regulated, organisms. Statutory action is taken regularly against such potentially damaging pests and pathogens and it is not normal practice to inform Ministers immediately about all such incidents.⁴¹

The Government has said that there was also no reason to suspect that *Chalara* was present in the wider environment. As part of the **National Forest Inventory**, the Forestry Commission had inspected 15,000 individual ash trees across the country between 2009-2012 in more than 8,000 groups. Of these 103 were discovered to be in ill health and none were due to *Chalara*.⁴²

Over the summer, 1000 at risk sites were identified and 100,000 saplings were destroyed.⁴³ Plant Health Authority staff have since been inspecting ash in the vicinity of the infected sites and

³⁷ Dr Peter Freer-Smith, Forestry Commission Chief Scientific Adviser speaking at Parliamentary Science Committee meeting on 27 November 2012

³⁸ [Letter from Roddie Burgess, Head of Plant Health, Forestry Commission to Steve Ashworth, Chair of the Tree and Hedging Group, Horticultural Trades Association \(HTA\) on 26 October 2009](#) . This is available with the initial letter from Mr Ashworth, 15 September 2009, on the [HTA website](#).

³⁹ HL Deb 19 November 2012 WA 328

⁴⁰ HL Deb 19 November 2012 WA 328

⁴¹ HL Deb 19 November 2012 WA 328

⁴² HL Deb 5 November 2012 c.878

⁴³ HL Deb 5 November 2012 c.878

checking the sites from the National Forest Inventory where symptoms have previously been seen which could now suggest the possibility of Chalara infection.

At the same time, as the rapid survey, The Food and Environment Research Agency consulted on a rapid assessment for the need for detailed Pest Risk Analysis (PRA) for *Chalara fraxinea*. A PRA summarises evidence on the risk of an organism being introduced, spreading, establishing, causing economic or environmental damage and the prospect of controlling it.⁴⁴ There are international standards for PRA set by the [European and Mediterranean Plant Protection Organisation \(EPPO\)](#) and these help to determine whether a pest should be regulated and the strength of measures to be taken against it.⁴⁵ This PRA was the first in the world for ash dieback despite its spread across Europe. The consultation was "fast-tracked" and ended on 26 October 2012.⁴⁶

During the consultation period, Chalara was confirmed in the wider environment in East Anglia, These trees had no apparent connection to nurseries and suggested the presence of Chalara in Great Britain for "quite some time".⁴⁷

In September 2012, the Horticultural Trades Association called for an "immediate and voluntary moratorium on ash imports" whilst the true extent of the spread of Chalara was determined. The HTA suggested that:

...The forestry and landscape sectors should consider alternative planting schemes, which the Forestry Commission should endorse by supporting percentage increases in other species to safeguard this season's Grant Aid planting schemes and mitigate the commercial ramifications for UK industry.⁴⁸

4.2 Restrictions on ash imports

On 29 October 2012, on the basis of the "industry's overwhelming support and following discussions with the Forestry Commission", the Government introduced new requirements on the import and movement of ash seeds, plants and trees under the [Plant Health \(Forestry\) \(Amendment\) Order 2012](#), with equivalent legislation in Northern Ireland.⁴⁹ The UK legislation was introduced in accordance with Article 16.2 of the [EU Plant Health Directive \(2000/29/EC\)](#).⁵⁰

C. fraxinea is now a "quarantine" pest under national emergency measures which means that the Plant Health Authorities can take legally enforceable action to contain or eradicate the fungus when it is found. These emergency measures are intended to prevent further infection of infected stock and to slow the spread of the disease.⁵¹

The legislation only allows the import of ash trees from pest free areas established in accordance with the standards of the [International Plant Protection Convention \(IPPC\)](#). As no such pest free areas have been designated, no imports of ash trees can take place in the UK. ⁵² It is therefore effectively a ban on imports. This ban has been implemented before the main planting season

⁴⁴ HC Deb 1 November 2012 c.350W

⁴⁵ EPPO website, [Pest Risk Analysis page](#) as on 6 December 2012

⁴⁶ [Letter from Owen Paterson, Secretary of State for Environment, Food and Rural Affairs to MPs](#), 16 November 2012 as reproduced on Sir George Young Bt MP's website.

⁴⁷ HL Deb 5 November 2012 c.878

⁴⁸ HTA, [Industry calls for a voluntary moratorium on imports of ash and compensation for any UK destruction notices](#), 18 September 2012

⁴⁹ [Letter from Owen Paterson, Secretary of State for Environment, Food and Rural Affairs to MPs](#), 16 November 2012 as reproduced on Sir George Young Bt MP's website.

⁵⁰ [HL Deb 19 November 2012 WA330](#)

⁵¹ [Letter from Owen Paterson, Secretary of State for Environment, Food and Rural Affairs to MPs](#), 16 November 2012 as reproduced on Sir George Young Bt MP's website.

⁵² [HL Deb 19 November 2012 WA 329](#)

starts at the end of November and will remain in place until Defra reviews the arrangement with the nursery and horticulture sectors in early spring 2013.⁵³

The legislation continues to permit:

- the import of logs, woodchips and firewood from EU countries (as this is thought to pose a very low risk of disease but destruction can be ordered if infection is found in any of this material)
- movements within Great Britain of all ash timber
- imports of sawn timber from certain countries if accompanied by the required phytosanitary (plant health) certificates.⁵⁴

Movement of all ash material off an infected site under a Statutory Plant Health Notice is prohibited. The Government has said that it will review the measures for controlling the movement of wood from infected trees once it has fully assessed the national disease situation. At the present time, wood may only be used as fuel if it remains in the site covered by the Plant Health Notice.⁵⁵

Commercial impact of the restrictions

The HTA has estimated that ash dieback could cost the horticultural industry £2.5 million following a [survey](#) of 62 growers with 8% believing that they may go out of business without financial support. There is an estimated £2.5 million worth of ash trees currently on UK nurseries with the majority being 1-2 year old seedlings, although the total market values is spread quite evenly across all tree sizes.⁵⁶

The survey found that:

95% of businesses state that the current situation will have a negative effect on their business

58% predict cash flow problems over the winter period

87% expect reduced business profitability.

13% of nurseries have already destroyed ash stock in response to the disease (either due to destruction notice or market failure)

8% of those surveyed believe they may go out of business without financial support.

As well as loss of earnings from ash stock that now has no market, nurseries also face the threat of incurring costs in destroying diseased stock. The HTA has submitted this survey to Defra as evidence for the need for the government to assist growers. However, so far no Government financial assistance has been forthcoming. Unlike livestock disease outbreaks, with plants the cost of control measures, such as destroying material that could spread the disease, falls on stakeholders.

A recent answer to a Parliamentary Question on ash dieback advice and compensation stated:

Advice to landowners and anyone with ash trees is set out on the Forestry Commission website, which is regularly updated and includes a question and answer

⁵³ Defra, Interim Chalara Control Plan, 6 December 2012, p.5

⁵⁴ Forestry Commission website, [Q&A: Legislation on Chalara](#) as on 6 December 2012

⁵⁵ HC Deb 12 November c.8W

⁵⁶ HTA, Ash growers count the cost of Chalara, 26 November 2012

section, a symptoms video, pictorial guide and a “Chalara” helpline number and e-mail address.

With regard to compensation, at a time when our trees face increasing threat from a range of harmful diseases and when we are seeking to maintain tight controls on spending and reduce the deficit, it is our view that resources are best spent on surveillance and other preventative disease management activities to limit the potential damage from ash dieback and other diseases.⁵⁷

The Forestry Commission website echoes this position in offering advice to those having to destroy ash plants:

Unfortunately we are unable to offer compensation for plants destroyed to comply with a Plant Health Notice. It is felt that the available resources are best used for surveillance, research and eradication work. Plants are therefore purchased and planted at buyers’ risk, and any questions about recompense would be between the customer and supplier of the plants involved.⁵⁸

Table 1: Timeline of UK action on Chalara fraxinea in context of key events

Date	Event	Background/Reasoning
1992	Extensive Ash dieback in Poland and subsequent rapid spread across Europe	
2006	Fungus’ asexual stage, <i>C. fraxinea</i> , was first “described” by scientists	
2007	Chalara added to the EPPO list as an asexual form of <i>H. Albidus</i>	
2009	Horticultural Trades Association wrote to Forestry Commission seeking an ash import ban	Based on a visit to Denmark

⁵⁷ [HC Debate 19 November 2012 c.326W](#)

⁵⁸ Forestry Commission, [Chalara dieback of ash – Questions and Answers](#) as on 29 November 2012

	Forestry Commission agreed that the situation was worrying and that trees would be surveyed	However, explained that there were no grounds for a ban of imports within WTO and EU rules as the ash dieback pathogen was a new form of a fungus already present in the UK.
2010	New scientific evidence was published which correctly identified the pathogen that caused Ash dieback. Its sexual stage, <i>Hymenoscyphus pseudo-albidus</i> , was described.	This was not the form native in the UK and was a turning point in the science.
2012		
7 Feb 20 Feb ⁵⁹	Investigation of suspect symptoms during a routine inspection at a nursery in Buckinghamshire by the Food and Environment Research Agency's Plant Health and Seeds Inspectorate.	Believed to be an isolated finding, as "no history of the disease in the UK, nor in traded plants." ⁶⁰
7 March	<i>C. fraxinea</i> first confirmed in the UK	Nursery had voluntarily held the plants which were destroyed when Chalara was confirmed. ⁶¹
3 April	Ministers informed of the finding ⁶²	Via usual monthly update on plant health issues/ potentially significant ones.
Sept-26 October	Pest Risk Analysis undertaken and consultation launched. (Outside of the planting season)	To establish the scale of the problem in the light of the scarcity of information about the trade in ash plants. ⁶³
Sept	Voluntary moratorium on ash imports called for by the industry ⁶⁴	
	Defra's Chief Scientific Adviser asked to convene a tree health and biosecurity expert taskforce.	
22 Oct	Disease found in mature trees in East Anglia	
29 Oct	Government introduced new requirements on the import of ash trees under the Plant Health (Forestry) (Amendment) Order 2012, with equivalent legislation in Northern Ireland. Imports are allowed from pest free areas but this is effectively a	Government acted to introduce legislation "when it became clear that "restrictions on ash imports were necessary and supported by those involved in the industry".

⁵⁹ HL Deb 7 November 2012 WA 218

⁶⁰ HC Deb 21 November 2012 c.503W

⁶¹ HL Deb 19 November 2012 WA 328

⁶² HL Deb 7 November 2012 WA 218

⁶³ HL Deb 19 November 2012 WA 328

⁶⁴ HTA, [Industry calls for a voluntary moratorium on imports of ash and compensation for any UK destruction notices](#), 18 September 2012

	ban as no such areas have been designated.	
2 Nov	Meeting of COBR (Cabinet Office Meeting Room A) to discuss response to Chalara	Agreed a series of immediate actions including survey of the presence of Chalara ⁶⁵
7 Nov	UK plant authorities complete rapid, week-long, "unprecedented" survey to establish 'Chalara's' presence in the UK in partnership with the Devolved Administrations. ⁶⁶ This was prepared in time for the Tree health summit where Over 100 experts gathered to advise on Chalara action plan	129 confirmed sites, 15 in nursery stock, 50 in recently planted sites and 64 in the wider environment. ⁶⁷
9 Nov	Immediate plan of Government action agreed at COBR meeting informed by summit and survey. ⁶⁸	
12 Nov	Opposition Day Debate in Parliament	
6 Dec	Publication of Defra's Interim Chalara Control Plan and Interim Report of the Tree Health and Plant Biosecurity Expert Task Force.	

⁶⁵ Defra News, [Government action on ash tree disease Chalara](#), 2 November 2012

⁶⁶ HC Deb 9 November 2012 c.48WS

⁶⁷ HC Deb 9 November 2012 c.48WS

⁶⁸ Defra Press Release, [Government Action on Ash tree disease Chalara](#), 9 November 2012

5 Government action plans for *C.fraxinea*

The Government convened a summit of over 100 experts on 7 November 2012 to advise on Chalara action and this Summit was informed by the results of a rapid survey of the UK to identify the extent of Chalara. Staff were redeployed to enable over 500 people (including volunteers) per day to take part covering around 2,500 10 kilometre squares - with four wooded sites inspected in each square to give a preliminary indication of the disease's extent and distribution.⁶⁹

The Government then stated that the evidence of the survey and the summit indicated that the Chalara infection had been present in the natural environment in the Great Britain for some years.⁷⁰

Defra's Chief Scientific Adviser convened a group of experts who compiled an evidence summary published on 7 November 2012 (after a week's work). This advised that where the disease is present in the natural environment, this is likely to be due to spores blown on the wind from continental Europe. Their advice was that it would not be possible to eradicate Chalara.⁷¹

5.1 Short-term actions

On 9 November 2012, Defra Secretary of State, Owen Paterson set out the Government's short-term plan for beginning to address the Chalara problem quickly. This plan was agreed by the Government's emergency committee COBR, and built on the ideas discussed at the Chalara and Tree Health Summit on 7 November 2012. Mr Paterson announced that the Government's immediate objectives were to:

- reduce the rate of spread of the disease;
- develop resistance to the disease in the native UK ash tree population;
- encourage citizen, landowner and industry engagement and action in tackling the problem; and
- build resilience in the UK woodland and associated industries.

He also set out an immediate plan of action to meet those objectives:

- Newly-planted diseased trees and diseased trees in nurseries will be traced and destroyed, as once young trees are infected they succumb quickly.
- 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. Infection does not occur directly from tree to tree.
- 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 genetic resistance to Chalara, to help identify genetic strains resistant to the disease.
- 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.
- Foresters, land managers, environment groups and the general 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.⁷²

⁶⁹ HC Deb 9 November 2012 c.48WS

⁷⁰ HC Deb 9 November 2012 c.50WS

⁷¹ HC Deb 9 November 2012 c.50WS

⁷² Defra Press Release, [Government Action on Ash tree disease Chalara](#), 9 November 2012

The current scientific understanding is that the disease only spreads in the summer (the period of spore release) so the Government is seeking to develop its response whilst there is a window of opportunity for action. Overall, the current approach is to try and slow the spread and minimise the impact to gain time to find those trees with genetic resistance to the disease and to restructure our woodlands to make them more resilient.

The import ban (see above) is intended to reduce the speed of spread as such imports would be one of the key means of spreading the disease this winter. Infected mature trees are being left at the moment as infection does not spread directly between trees but only in the leaf litter.⁷³

The Forestry Commission's Chief Scientific Adviser, Dr Peter Freer-Smith, has highlighted that the lack of scientific information about Chalara is a hinderance to future action. Speaking at a meeting of the Parliamentary Science Committee, he said " we don't have all the answers we need to design a control strategy as we would like to".⁷⁴ The Defra Secretary of State has acknowledged that there remains question marks over the pathology of the organism and its means of transmission which need to be explored more fully.⁷⁵

As ash leaves fall to the ground, there is also a low risk of the spread of disease through the long distance movement of leaf litter on, for example boots and tyres. Hence, the Forestry Commission is currently advising visitors to woodlands to scrape mud and leaves from their boots, pushchairs, dogs and horses before leaving an area. Advice has also been issued to a range of public bodies about the disposal of ash leaves and material.⁷⁶

The Forestry Commission has sent out letters to customers whose trees or woodlands may be at risk and a range of contact numbers have been provided on the Forestry Commission website to report a diseased tree. A smart phone app has also been developed by the University of East Anglia, [Ashtag](#), to help the public report sightings of the disease to the Forestry Commission.

5.2 Interim Chalara Control Plan

On 6 December 2012 Defra published its [Interim Chalara Control Plan](#) setting out proposed actions to tackle Chalara fraxinea over the next few months. The plan reports on progress in delivering the initial actions set out in Section 5.1 above.

The key actions are:⁷⁷

Objective 1 - reducing the rate of spread

- Maintain the ban on import and movement of ash trees
- Explore options for a targeted approach to management of infected trees by end March 2013
- Initiate research on spore production at infected sites
- Work with partners to publish targeted advice on movement of leaf litter

Objective 2 – developing resistance

⁷³ Defra Press Release, [Government Action on Ash tree disease Chalara](#), 9 November 2012

⁷⁴ Parliamentary Science Committee, 27 November 2012

⁷⁵ HC Deb 29 October 2012 c.31

⁷⁶ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.6

⁷⁷ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.2

- Work across Europe to share data and experience on resistance to Chalara
- Work with research councils and other bodies in the UK to identify and prioritise research needs on resistance and ensure those needs are met.

Objective 3 – encouraging citizen, landowner and industry engagement in surveillance, monitoring and action in tackling the problem

- Fund a pilot study to accelerate the development of the ObservaTREE, a tree health early warning system using volunteer groups
- Develop a plant health network of trained people to support official surveillance and detection
- Support work by industry groups to develop a charter mark for plants of UK origin
- Continue to work with the OPAL consortium to develop the OPAL survey on tree health for launch in May 2013
- Support a biosecurity themed show garden at next year's Chelsea Flower Show

Objective 4 – building resilience in woodland and associated industries

- Publish silvicultural guidance on adapting to Chalara
- Publish maps showing the distribution of important ash across Great Britain
- Work with the horticulture and nursery sectors on long-term resilience to the impact of Chalara and other plant health threats

Key up-dates provided in the plan

Import and movement restrictions

The Government has considered whether it will be feasible to introduce protected zones which are free of Chalara and within which businesses can issue "plant passports" to free up trade in ash trees. However, the interim control plan states that it is not yet clear whether some areas will be able to demonstrate the necessary "disease free" or "low disease prevalence" status required and therefore be able to resume trading in ash trees.⁷⁸

Action on infected trees

UK plant health authorities are continuing to inspect material traced forward from the infected nurseries and to monitor ash trees in the wider environment in the vicinity of infected sites. The exercise to trace sites is to remain as an interim measure and infected stock will only have to be destroyed where it represents a significant threat of spreading the disease to uninfected ash trees.⁷⁹

The decision to take no action with infected mature trees remains but the Government is now considering whether the felling of some mature trees e.g. isolated trees a long way from other areas of infection might be appropriate.⁸⁰

⁷⁸ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.5

⁷⁹ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.6

⁸⁰ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.6

However, the scale and complexity of the task of tracing sites means that it could take many months, if not years to identify all the sites that could be affected so the Government is now considering how best to assess where the decision to trace and destroy will be most effective.⁸¹

Developing resistance

The interim control plan states that:

Our best hope of securing the future of the British ash tree lies with understanding the genetic variability in ash and identifying resistance to Chalara. This may take several years.⁸²

Reports from Europe have indicated that there is the potential for long-term natural selection producing offspring with increased resistance to dieback and that cross-breeding may accelerate the production of more resistant ash species.

Defra's Chief Scientific Adviser, Professor Ian Boyd is convening a scientific workshop on 13 December 2012 to further define and prioritise research needs for Chalara. This will focus on identifying and breeding for resistance and ensuring that research needs are being met.⁸³

Engaging others in action

The interim control plan sets out a number of new initiatives to engage landowners, voluntary organisations and the general public in the control of *C.fraxinea*. There are now a number of measures allowing stakeholders and the wider public to report information which links directly to the Forestry Commission's national plant health database.⁸⁴

Commercial impacts

The Government has assessed the impact of *C.fraxinea* on the forestry industry as a whole to be very small although locally important. Defra is currently not intending to require the repayment of grant funding where full establishment of a woodland is prevented through the loss of trees by *C.fraxinea*.⁸⁵

There will also be a review of policy measures that influence forest planting grants and planting decisions to identify mechanisms that minimise threats from imported plant material and maximises opportunities for stock to be grown domestically.⁸⁶

Governance changes

To bring plant health policy "closer to the heart of Government", Fera's plant health policy team will transfer to Defra along with the UK Chief Plant Health Officer from 31 December 2012.⁸⁷

5.3 Longer term strategy

The Government is now working with scientific experts and other interested groups to further develop and implement the measures in the action plan and to set a longer term approach to tackling Chalara. COBR agreed that this approach will also consider:

- Designating protected zones, to free up trade in ash from areas free of the disease through authorising businesses to issue "plant passports".

⁸¹ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.5

⁸² Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.8

⁸³ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.9

⁸⁴ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.10

⁸⁵ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.14

⁸⁶ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.14

⁸⁷ Defra, [Interim Chalara Control Plan](#), 6 December 2012, p.16

- Establishing a tree health early warning network to provide advice, screening and initial diagnostics.
- Developing advice on protecting saplings and responding rapidly if the disease is found.
- Developing advice on sustainable management of mature trees on sites affected by Chalara.
- What additional equipment is needed to diagnose tree disease.
- Improved biosecurity including import controls.
- More public engagement in helping diagnose and tackle disease through “citizen science” including an OPAL (Open Air Laboratories) citizen science project.⁸⁸

The Government is also urgently bringing forward actions in the Tree Health and Plant Biosecurity Action Plan (see section 5.4 below) particularly aimed at keeping out serious pests and pathogens not currently present in the UK.⁸⁹ These include a review of the UK’s protected zone status under the EU Plant Health Directive, to determine if additional protection is needed in relation to specific tree health threats.⁹⁰

6 UK plant health and biosecurity resources

The Chalara outbreak caused many to question whether the plant health authorities have been sufficiently resourced to anticipate and respond to plant health threats such as Chalara, particularly the Forestry Commission whose budget has been cut by 26%.

The Government has been keen to stress that plant health funding had not been reduced despite these overall cuts. However, prior to 2010 there were progressive cuts in Forestry Commission spend on research on monitoring and biosecurity. The Woodland Trust has said that the Chalara outbreak is “symptomatic of the lack of priority given to the protection and safeguarding of our natural woodland resources.”⁹¹

[Forest Research](#) and the [Food and Environment Research Agency](#) (Fera) are the two key government organisations with funding for plant (including trees) research.

Forest Research is the Forestry Commission's main source of research and scientific advice and receives approximately 90% of the Commission’s science budget to support its activities in this role. Forestry Research's overall budget was £9m in 2011-12 orientated around its corporate plan objectives for 2012-13 as agreed with Defra.⁹² The Forestry Commission deploys the remaining 10% of its science budget to:

- promote understanding of sustainable forest management in the wider research community;
- engage in partnerships with other funders;
- secure specialist expertise and competencies not available from Forest Research;

⁸⁸ Defra Press Release, [Government Action on Ash tree disease Chalara](#), 9 November 2012

⁸⁹ HC Deb 19 November 2012 c.338W

⁹⁰ [HL Deb 19 November 2012 WA330](#)

⁹¹ Woodland Trust, [Statement from the Woodland Trust following Owen Paterson announcement of ash import ban](#), 29 October 2012

⁹² Forestry Research Annual Report 2011-12, p.46 Section 3a

- maintain expertise in external centres of excellence where key competencies and facilities are of strategic importance to UK forestry and woodland management; and
- benefit from alternative perspectives.⁹³

Fera is responsible, on behalf of Defra, for implementing the plant health regulations in England and Wales, The Scottish Government is responsible for implementation in Scotland whilst similar but separate arrangements apply in Northern Ireland. Fera leads on policy development in plant health, bee health, and plant varieties and seeds, including regulation and inspection. It also provides surveillance, science evidence and analysis in support of policy outcomes for other parts of Defra, such as land use assessment and biodiversity.

Fera, together with the devolved administrations and the Forestry Commission (FC) forms the UK Plant Health Service and works with other EC Member States and the European Commission to agree appropriate plant health rules for Europe and co-ordinate their implementation.⁹⁴

These key organisations in plant health have clearly been facing resource challenges. Forest Research is losing 60 out of 222 staff over the CSR period, a cut of 28% and that 38 of these have already left.⁹⁵

Meanwhile, in October 2011, Fera [consulted](#) on a new charging regime for inspections setting out how it had not been recouping the full costs of the services which it was providing to business:

The government has charged for plant health services for many years. However, the fees charged to businesses using these services have not been revised for some time, in some cases for over a decade. The total annual income received from business users of the five statutory services is around £2m which falls considerably short of the £5.6m costs of provision (forecast for 2012/13), i.e., about 36% of the cost of provision. This shortfall of around £3.6m is currently being met from public funds.⁹⁶

A new charging regime was subsequently introduced in April 2012. This is now enabling Defra funding, previously subsidising inspection costs, to be used for other measures to improve plant health security⁹⁷.

The Forestry Commission itself seems to have flagged up an issue with its ability to respond to crisis as highlighted by Lord Knight of Weymouth in a recent Lords debate on the British Ash Tree:

The subject of other species takes us on to the capacity of the Forestry Commission to deal with this threat. The commission's February 2011 staff consultation document on redundancy, following its 25% cut in funding, said, under high-level risks on page 24:

"There is no capacity to deal with costs of disease or other calamity. (e.g. Phytophthora is currently an unfunded pressure for 2011/12.) Mitigation: ensure full awareness of this loss of capacity".⁹⁸

⁹³ Forestry Commission, [Science and Innovation Strategy for British Forestry 2010-2013](#), 1 April 2010, p.v Executive Summary.

⁹⁴ Defra website, [Plant and Tree Health page](#) on 4 December 2012

⁹⁵ [HL Deb 5 November 2012 c.875](#)

⁹⁶ Defra, [Consultation on proposed increases in fees for statutory plant health services](#), October 2011, para 14

⁹⁷ Defra, [Tree Health and Biosecurity Action Plan: Progress Report](#), June 2012, p.3

⁹⁸ [HL Deb 5 November 2012 c.875](#)

6.1 Research priorities and spend

In November 2012, during a House of Lords debate on the “British Ash Tree”, Defra Minister Lord de Mauley was keen to stress that whilst the Forestry Commission’s overall budget had decreased since 2010, it was “not true” to say that funding for plant health had decreased. He provided a range of funding figures for the key organisations involved in plant health research which are incorporated into Table 2.

Table 2: Summary of plant health budget information

Financial Year	Forestry Commission GB/England ⁹⁹ Resource Departmental Expenditure Limit (DEL) /£ million (at start of year)	Forestry Commission GB/England Funding for Plant Health Research ¹⁰⁰ /£ million	Fera Budget for plant health research /£ million	Defra * Allocation for the tree health action plan	Defra* Living with Environmental Change (tree health research)
2010-11	47.454 (initial budget)	1.4	0.667		
2011 -12	45.592 (initial budget)				
2012-13	42.328 (initial budget)			1.3	0.8
2013-14	39.241 (indicative)			1.3	0.8
2014-15	36.253 (indicative)	2.1	1.45	1.3	0.8

Source: HC Deb 7 November 2012 c.646W and HL Deb 5 November 2012 c.880

*This funding will go one year beyond the current spending review period and will total £8 million over four years

Tree Health and Plant Biosecurity Action Plan (Oct 2011)

Much of the plant health funding is directed at delivering the actions set out in the Tree Health and Plant Biosecurity Action Plan agreed in October 2011. The Forestry Commission, Fera, and Forest Research corporate and business plans reflect this.¹⁰¹ The plan states that "Government has made preparing for and managing risk from plant disease a top priority".¹⁰²

The Action Plan was developed through a series of workshops with stakeholders following concerns raised about reports of increasing numbers of deaths of trees. It sets out an integrated approach towards dealing with serious tree and plant pests and diseases, focusing on four key areas of activity: import controls, practical actions, research, communications and public engagement.

⁹⁹ HC Deb 7 November 2012 c.646W

¹⁰⁰ HL Deb 5 November 2012 c.880

¹⁰¹ See for example Fera business plan 2012-2013 and Forest Research Corporate and Business plan 2011-2015 which set out their respective roles in supporting the plan

¹⁰² Defra, [Tree Health and Plant Biosecurity Action Plan](#), October 2011, para 3

At the time, Defra allocated £7 million from existing resources for new research into tree health over three years as part of this plan.¹⁰³ This funding came on stream in April 2012 and on 16 November 2012, Defra Secretary of State Owen Paterson confirmed that the Government had allocated a further £1 million so that the funding will total £8 million over four years.¹⁰⁴

He stated that this money was on top of the Forestry Commission's existing plant health budget which was protected at pre-2010 Spending Review levels.¹⁰⁵ In addition, to support the plan, the Forestry Commission also increased its investment in tree health research, from its existing resources, by some 30% over the next 3-4 years.¹⁰⁶

As a result of implementation of the plan, 18 new import inspectors were deployed in 2012 increasing the level of plant inspections. A range of more immediate and applied research has been commissioned to support the action plan including research to support the development of a Great Britain forest health surveillance system and there have been a number of new initiatives to engage the public and stakeholders in plant health issues. A [June 2012 progress report on the plan](#) provides further details.

In 2012, the [Independent Panel on Forestry](#), set up to advise the Government on the future direction of forestry and woodland policy in England, called for the Government to speed up the delivery of the Tree Health and Plant Biosecurity Action Plan by additional investment in research on tree and woodland diseases, resilience and biosecurity controls. The Panel acknowledged that Government funding in this area had increased but highlighted that so had the threat from pests and pathogens.

One particular challenge is that many pathogens which threaten our species may be harmless in their home environment, and only become dangerous and visible when exposed to English flora and climatic conditions. New and appropriate funding for ongoing research into a range of new pests and pathogens is needed, that recognises the scale of the threat and the value of what is at risk.

We need to develop adaptation solutions for our woodlands and forests so they become more resilient to such threats, and climate change. Much of the knowledge and expertise underpinning this research is held within Government, in Forest Research (an agency of the Forestry Commission) and Food and Environment Research Agency (an agency of the Department for Environment, Food and Rural Affairs). Section D on organisational arrangements recommends a continuation of this important role.

The House of Commons Environment, Food and Rural Affairs Committee has recently launched an enquiry to examine the UK preparedness to tackle health threats to trees and plants. This will look at whether the Action Plan on Tree Health and Plant Biosecurity is fit for purpose. It will also ask whether there are sufficient resources and adequate management plans to effectively prevent disease outbreaks and, where necessary, to mitigate impacts.¹⁰⁷

¹⁰³ HL Deb 5 November 2012 c.863

¹⁰⁴ [Letter from Owen Paterson, Secretary of State for Environment, Food and Rural Affairs to MPs](#), 16 November 2012 as reproduced on Sir George Young Bt MP's website.

¹⁰⁵ [Letter from Owen Paterson, Secretary of State for Environment, Food and Rural Affairs to MPs](#), 16 November 2012 as reproduced on Sir George Young Bt MP's website.

¹⁰⁶ Defra website, [Tree Health and Plant Biosecurity Action Plan](#) as on 7 November 2012

¹⁰⁷ House of Commons Environment, Food and Rural Affairs Committee News Release, [MPs to examine UK preparedness to tackle health threats to trees and plants](#), 20 November 2012

Monitoring and Biosecurity Research

In 2010 the Forestry Commission set out how it would increase its budget for monitoring and biosecurity research over the next five year period, particularly with regard to tree health, to 15% of its research spend. This was at the expense of spend on ecosystems and biodiversity which was reduced by 5%. This acknowledged the increasing importance of the impacts of climate change in terms of new pests and pathogens.¹⁰⁸ Ironically, prior to 2010, the priority of climate change had actually led to a reduction in the spend on monitoring and biosecurity as resources were redistributed.¹⁰⁹

Table 3 below illustrates this. It shows the Forestry Commission research spend by theme since 2000. There is a downward trend for monitoring and biosecurity from 2000/01- 2009/10 from 20% of the research spend to 12%, representing an overall fall of almost 40% in real terms. Research on climate change and social, economic development and urban greening increased as the Commission clearly had to spread its resources across an increasing range of high priority issues.

Table 3: Forestry Commission research spend by theme since 2000

Research theme	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	Trend
Monitoring and biosecurity	20%	22%	20%	19%	23%	22%	20%	16%	13%	12%	↓
Biodiversity and ecosystems	18%	19%	19%	20%	18%	17%	17%	16%	20%	19%	↔
Climate change	4%	4%	4%	4%	4%	5%	5%	8%	10%	14%	↑
Sustainable forest management	19%	18%	18%	19%	17%	17%	16%	17%	14%	14%	↓
Forest products	18%	17%	16%	15%	15%	14%	17%	16%	15%	14%	↓
Social, Economic Dev. & Urban Greening	8%	9%	9%	10%	9%	10%	11%	11%	13%	12%	↑
Inventory and forecasting	11%	11%	12%	12%	10%	11%	10%	8%	11%	11%	↔
Miscellaneous	2%	2%	2%	2%	4%	4%	5%	7%	5%	4%	↑
Total Research Spend	11280	10942	10845	10945	11172	11675	11679	11329	11419	11434	↓*

* In real terms

Source: Forestry Commission, Science and Innovation Strategy for British Forestry 2010-2013

In 2010, ash die-back was not the main concern but other, new tree health outbreaks had highlighted capacity needs. The Forestry Commission, [Science and Innovation Strategy for British Forestry 2010-2013](#) noted:

Recent tree health outbreaks caused by Phytophthora species, Red band Needle Blight, and Oak Processionary Moth have underlined the need to maintain an experienced team of pathologists and entomologists capable of carrying out both strategic research and 'fire brigade' investigation of new problems. This capacity will be maintained in Forest Research and its effectiveness enhanced by seeking opportunities for collaboration with other experts experienced in this area. The Phytophthora programme with the Food and Environment Research Agency (Fera) to contain and eradicate the two new diseases has clearly demonstrated the value of partnership at all levels. We recognise that emerging threats, such as this, may

¹⁰⁸ Forestry Commission, [Science and Innovation Strategy for British Forestry 2010-2013](#), 1 April 2010, para 2.1

¹⁰⁹ Forestry Commission, [Science and Innovation Strategy for British Forestry 2010-2013](#), 1 April 2010, para 2.3 p.15

demand immediate reallocation of resources and impact on planned strategic shifts in the balance of resources.¹¹⁰

As recently as the Forestry Commission's [annual report](#) for 2011-12 it was clear that Chalara was not on the radar and a budget priority was protecting trees from *Phytophthora ramorum*.¹¹¹

Annual spend in the 2011-12 financial year: £5.3m applied across the full range of national priorities as well as local area partnership activities encompassing all the new Forest Services Areas. Larger investment items included contributions to protecting trees from *Phytophthora ramorum* tree disease (nearly £1m), expansion schemes at Newlands in the new North West and West Midlands Area (604k), and £231k for the Mayor of London's street trees, as well as woodland improvements via the Big Tree Plant (£695k), Woodfuel East (£389k) and the Deer Initiative (£278k). Other investments included contributions towards the Woodland Trust's visitwoods.org.uk, short rotation forestry, red squirrel conservation and forestry apprenticeships.

Skills shortage

The British Society for Plant Pathology (BSPP) recently reported a serious decline in teaching and research on plant diseases in British Universities and colleges just as the Forestry Commission describes UK forests as facing an "unprecedented threat" from foreign pests and diseases.

[Plant Pathology Education and Training in the UK: An Audit](#) (November 2012) found that British Universities have appointed very few plant pathologists in the last 20 years and many of those who remain are over 50. The report highlighted that the age profile of HEI plant pathologists was of "major concern" with staff retiring and not being replaced indicating that plant pathology was not considered a priority. As a result, plant pathology has been lost completely or greatly reduced at 11 universities and colleges while fewer than half the institutions which teach biology, agriculture or forestry offer courses in plant pathology.¹¹² These courses could be as little as 1-2 lectures with students able to opt out of plant based modules.¹¹³ In addition, only one in seven universities now provide practical classes which give students hands-on experience of plant disease.¹¹⁴

Professor James Brown, President of the BSPP has called the job losses severe and has said that:

... Britain is not producing graduates with the expertise needed to identify and control plant diseases in our farms and woodlands.¹¹⁵

The report also highlighted that the Impact Factor (IF) of scientific publications drives a lot of recruitment and funding and the highly specialised nature of much plant pathology research means that many publications are low IF. Overall the BSPP concluded that:

¹¹⁰ Forestry Commission, [Science and Innovation Strategy for British Forestry 2010-2013](#), 1 April 2010, para 2.2.2

¹¹¹ HC55, [Forestry Commission Great Britain/England Annual Report and Accounts](#), p.30

¹¹² British Society for Plant Pathology (BSPP), [Shortage of plant disease experts threatens tree and crop health](#), 1 November 2012

¹¹³ British Society for Plant Pathology (BSPP), [Plant Pathology Education and Training in the UK: An Audit](#), November 2012, Executive Summary

¹¹⁴ British Society for Plant Pathology (BSPP), [Shortage of plant disease experts threatens tree and crop health](#), 1 November 2012

¹¹⁵ British Society for Plant Pathology (BSPP), [Shortage of plant disease experts threatens tree and crop health](#), 1 November 2012

...A vicious circle is developing which must be challenged. A clear and constructive case must be made to policy makers of the importance of plant pathology and the need to teach and train the next generation of plant pathologists.¹¹⁶

7 New strategic approach to plant health

The *C.fraxinea* outbreak has been described by many as a wake-up call to the wider issue of plant health. It comes at a time when the UK is dealing with an increasing number of other serious tree diseases. The increase is exacerbated by global trade (a significant path for entry), climate change (affecting the range of pathogens and health of the host) and the trend for "instant landscaping". The latter means that fully grown trees are increasingly being imported, often with up to 1000-1500 litres of soil containing a range of organisms from their country of origin.¹¹⁷

The Forestry Commission [lists](#) 15 top pest and disease threats already present in Britain along with four threats that are not yet present caused by a variety of insects and a nematode worm.¹¹⁸ At least eight important tree pests, e.g. the Asian Longhorn Beetle, have been newly detected or become more damaging in the UK in the last decade. Other potentially harmful pests, e.g. the Emerald Ash Borer, are expanding their range closer to the UK.¹¹⁹

7.1 Expert Taskforce on Tree Health and Plant Biosecurity

In October 2012, the Secretary of State for Environment, Food and Rural Affairs, Owen Paterson, asked Defra's Chief Scientific Adviser, Prof.Ian Boyd, to convene an [expert taskforce](#) to rapidly review the Government's strategic approach to plant health and to prevent pests and diseases from entering the country.¹²⁰ Chaired by Professor Chris Gillegan, Head of the School of Biological Sciences at the University of Cambridge, its remit is to:¹²¹

- To review domestic and international risks presented from new and emerging tree and plant pathogens
- To provide an independent perspective on costs and benefits to inform priorities and resource allocation
- To identify potential barriers to improve tree health and plant biosecurity, and suggest ways of resolving them
- To make use of best international practice in tree health and plant biosecurity management
- To produce a rapid evidence assessment and make recommendations for next steps including identifying crucial knowledge gaps
- To consider whether the current plant health policy and delivery infrastructure and risk mitigation framework is fit for purpose and make recommendations for change, if required

¹¹⁶ British Society for Plant Pathology (BSPP), *Plant Pathology Education and Training in the UK: An Audit*, November 2012, Executive Summary

¹¹⁷ Dr Steve Woodward, University of Aberdeen at the Parliamentary Office of Science and Technology event, A Sleeping Canker? Tree Disease Biosecurity, 28 November 2012

¹¹⁸ Forestry Commission website, [Pests and diseases](#) page on 26 November 2012

¹¹⁹ [Letter from Owen Paterson, Secretary of State for Environment, Food and Rural Affairs to MPs](#), 16 November 2012 as reproduced on Sir George Young Bt MP's website.

¹²⁰ HC Deb 19 November 2012 c.503W

¹²¹ Defra website, [Expert Task Force on Tree Health and Plant Biosecurity](#) page, on 4 December 2012

- To review the current contingency planning and emergency response arrangements and recommend changes, if required

POST Note No 394 *Invasive Tree Pests and Diseases* (October 2011) provides further detail on the current UK plant health regime which centres around the [World Trade Organisation Phytosanitary Agreement](#), [EU Plant Health Directive](#), and [Plant Health Act 1967](#).

Mr Paterson has said he is "prepared to consider radical proposals to protect the woodland environment".¹²² He expects the Taskforce to have a key role to play in ensuring that disease in trees and plants is given the same priority as that in animals. Defra Minister, David Heath admitted that he and the Secretary of State had felt that for many years that the UK had not been as well equipped to deal with plant health as it had with animal health and he wanted the UK to be prepared for all eventualities at all times.¹²³

UK negotiators are already participating in the review of the existing EU Plant Health regime with a view to improving the pace of decision making and risk targeting, as well as increasing general co-operation across the EU between plant health inspectorates and between plant health and customs services.¹²⁴

The Taskforce published its interim proposals on 6 December 2012 and its final recommendations are expected in February 2013.

The key recommendations so far are to:¹²⁵

- Develop a prioritised UK Risk Register for tree health and plant biosecurity
- Strengthen biosecurity to reduce risks at the border and within the UK
- Appoint a Chief Plant Health Officer to own the UK Risk Register and provide strategic and tactical leadership for managing those risks
- Review, simplify and strengthen governance and legislation
- Maximise the use of epidemiological intelligence from EU/other regions and work to improve the EU regulations concerned with tree and plant biosecurity
- Develop and implement procedures for preparedness and contingency planning to predict, monitor and control the spread of disease
- Develop a modern, user-friendly, expert system to provide quick and intelligent access to data about tree health and plant biosecurity
- Identify and address key skills shortages

The Taskforce aims to continue to develop its advice further to:

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

¹²² HC Deb 9 November 2012 c.50WS

¹²³ HC Deb 29 October 2012 c.26

¹²⁴ Fera website, [Review of the plant health regime](#) as on 4 December 2012

¹²⁵ [Tree Health and Plant Biosecurity Expert Taskforce, Interim Report](#), 30 November 2012 p.8

produce a strategic evidence assessment and make recommendations for next steps including resolving crucial knowledge gaps.¹²⁶

¹²⁶ *Tree Health and Plant Biosecurity Expert Taskforce, Interim Report*, 30 November 2012 p.9