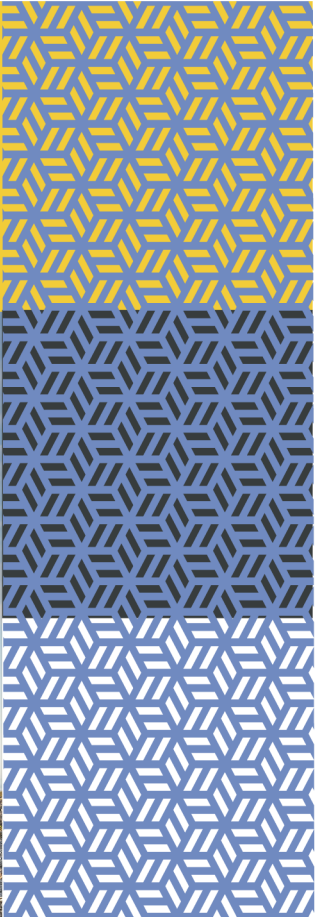


rmp

Risk control
Ash Dieback



In partnership with



Ash Dieback

Introduction

"Ash Dieback is a catastrophe for nature. Our landscapes and woodlands are irrevocably changing before our eyes, and this year's combination of a dry spring and late frost may have dramatically sped up the spread and severity of ash dieback. There needs to be some recognition of this as a nationwide issue and an understanding of what is being lost. Lockdown has meant we weren't able to undertake regular conservation work and many of our rangers who have returned are now forced to spend time tree felling to manage safety." The words of the National tree and woodland advisor for the National Trust, Luke Barley¹.

Ash Dieback, *Hymenoscyphus fraxineus* (formerly known as *Chalara fraxinea*), is the most significant tree disease to affect the UK since Dutch Elm Disease. It will lead to the decline and possible death of the majority of Ash trees in Britain and has the potential to infect more than two billion Ash trees (over 1.8 billion saplings and seedlings to more than 150 million mature trees) across the country.

Ash Dieback will lead to changes to our landscape and tree populations, changes to biodiversity and landscape character and potentially increase effects such as flooding caused by the way water interacts with the environment².

What is Ash Dieback?

Ash Dieback, formerly known as *Chalara*, affects Ash and other *Fraxinus* species of trees and is caused by a fungal pathogen. The fungus, *Hymenoscyphus fraxineus* (formerly *Chalara fraxinea*), arrived from Asia to Europe during the 1990s and spread rapidly across Europe. Although the first official record in Britain was in 2012, evidence suggests it arrived in 2004.

It doesn't cause much damage on its native hosts of the Manchurian Ash (*Fraxinus mandshurica*) and the Chinese Ash (*Fraxinus chinensis*) in its native range. However, its introduction to Europe about 30 years ago has devastated the European Ash (*Fraxinus excelsior*) because our native Ash species did not evolve with the fungus and this means it has no natural defence against it^{2&3}.

Legislation came into effect on 29th October 2012, banning the movement of Ash plants and seeds within the UK with immediate effect⁴.

This invasive fungus causes a range of symptoms from foliar leaf spots to branch dieback to the death of Ash trees and some other *Fraxinus* species. A few Ash trees

may survive the infection because of genetic factors which can give them tolerance to the disease, but the majority of trees will die once infected.

In non-woodland situations such as urban areas, where trees tend to experience greater stress, the percentage of UK Ash that are likely to be tolerant to the fungus is not yet well understood.

The environment also has a role in how trees decline from Ash Dieback, with trees growing outside of optimal conditions declining more quickly. The precise speed of decline of any individual tree is currently impossible to predict and will be influenced by other factors including soil type, soil moisture levels and topography.

A 10%-15% decline in the canopy in a single season is a typical rate of decline. However some individual trees can decline much more rapidly depending on their health and condition, particularly if mature and infected with other pathogens, like honey fungus. Consequently these will need to be monitored more closely³.

Business as usual?

With current consensus being that up to 85 - 90% of Ash trees will die or be severely affected over the next 5 – 15 years the scale of health and safety risks caused by Ash Dieback alone will mean that it will not be 'business as usual' for any organisation managing Ash trees. Tree failures could translate into an increase in the number of people harmed by trees and a potential increase in property claims. Organisations will need to review, and where necessary, make changes to tree safety management regimes and practices^{2 & 3}.

This will have major resource implications to make safe those Ash trees close to roads, public rights of way, public spaces, railways, and telephone and electricity cables.

The expected costs

The National Trust has concluded that 6 out of 7 Ash trees in Dovedale are likely to die from Ash Dieback in the next few years, with a significant increase in the felling of affected Ash trees. While all Ash trees along a 20-30 metre stretch of the A6 Highway and within 20 metres of the road adjacent Taddington Wood, and Chatsworth Estate will be felled as a risk control measure, requiring the road to be closed for 5 nights¹.

This is likely to have a significant impact on resource requirements for organisations, with a study by researchers from the University of Oxford, Fera Science, Sylva Foundation and the Woodland Trust calculating that the total economic cost of Ash Dieback is likely to reach £15 billion in public safety costs and the loss of 'ecosystem services', £7 billion of which will be incurred in the next 10 years and the cost of addressing the health and safety implications of affected roadside trees nationally could cost £5.3 billion alone. However they suggest that a national replanting scheme could reduce the total cost by £2.5 billion, while improved biosecurity measures could help prevent an additional £1 billion costs from the 47 other known tree pests and diseases that could arrive in this country^{1 & 2}.

How it spreads

Initially identified in South East England the disease is fanning out across the UK, spread by the wind through spores produced from fruiting bodies on principally the central stem of fallen leaves and in some cases on small, moist pieces of infected shoots. Infection mostly occurs through spores landing on leaves or twigs but, importantly, can also occur at the base of trunks. Where such root collar infection occurs, the affected trees can, if infected by honey fungus, rapidly become unstable and dangerous, without any obvious dieback symptoms in the canopy. Basal infection seems to occur mainly in forests and woodlands, including coppice.

As it grows, the fungus destroys the infected tree's phloem and xylem, which results in the tree being unable to move water and nutrients around its structure. This lack of water and nutrient movement will cause the branches of the tree to fail and the tree 'dies back', hence the name. Repeated loss of nutrition and water, the depletion of energy reserves because of the lack of leaves, and the invasion of secondary root killing pathogens (e.g. *Armillaria*), causes the tree to become brittle, lose branches and eventually succumb to the disease^{2 3 4 & 5}.

The Initial Impact

There is no cure for the disease, no immunity exists and while trees exhibit varying degrees of resilience any treatment to prevent infection is likely to be prohibitively expensive.

In Denmark, 10% of trees have been found to be moderately resistant to the disease, with 1-2% having high resistance. Even the long term fate of highly resilient trees is not known since they can continue to be

re-infected each year and this may over time lead to reduced vigour and increased susceptibility to other pathogens such as honey fungus *Armillaria*.

A small proportion of trees, young and old, are highly susceptible to the disease and are severely affected soon after the disease arrives in any area².

Ash Dieback Action Plan (ADAP)

To determine the likely impact of Ash Dieback a strategic and co-ordinated local response is required to deal with the multiple issues that Ash Dieback presents and The Tree Council Ash Dieback; An Action Plan Toolkit is one resource that has been specifically designed to assist Local Authorities and other regional or local agencies to take effective action to address the risks & resource demands from Ash Dieback^{2 & 6}.

As well as information and guidance it provides a 4 step approach to managing the risks from Ash Dieback, these being;

- 1 Raising Awareness
- 2 Preparing an Ash Dieback Action Plan
- 3 How to take action and respond to Ash Dieback
- 4 Recovery and Adaption

The aim of the 4 step approach is to:

- Increase understanding of the implications of Ash Dieback
- Provide a local/regional framework for preparing an ADAP
- Work at the county level, while being adaptable to any scale
- Provide focus around the tactical issues that an organisation may face while incorporating the need to deal with the strategic impact of tree pest and disease on the wider treescape.

It is only by taking such an approach that local authorities and other agencies can formulate and implement an effective & adequately resourced risk control plan^{1 & 2}.

Biosecurity in the short term

In the shorter term biosecurity containment actions are being implemented by many local authorities, such as Kent County Council who provide this advice when visiting or working in areas of Kent with confirmed records for the fungus:

- do not remove any plant material (firewood, sticks, leaves or cuttings) from infected woodland / countryside
- where possible, before leaving the infected woodland/countryside, clean soil mud and leaves from footwear, wheels and tyres
- before visiting other countryside sites, urban green space, garden centres and nurseries thoroughly wash footwear, wheels and tyres and
- follow instructions on any official signs⁷.

In Summary

Ash Dieback is a developing and ongoing risk to all landowners that will most likely result in the loss of all native Ash trees within the next 30 years, with a corresponding impact on how outside spaces and their trees are managed. While there is still a degree of uncertainty on just how Ash Dieback will impact our society, it is foreseeable that it will result in a loss of current amenity, while elevating risk and the costs of managing these. Due to the prevalence of Ash trees in parks and roadside verges this is an issue that needs to be addressed and action taken by organisations to understand the scale of the issue, the risks it presents and how those risks can most effectively be controlled and mitigated.

References

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<https://www.nationaltrust.org.uk/ilam-park-dovedale-and-the-white-peak/features/tackling-ash-dieback-in-dovedale>
- 2 The Tree Council, Ash Dieback webpages, online at;
<https://treecouncil.org.uk/science-and-research/ash-dieback/>
- 3 The Woodland Trust, Ash Dieback webpages, online at;
<https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/tree-pests-and-diseases/key-tree-pests-and-diseases/ash-dieback/>
- 4 The Forestry Commission publication – Managing Ash Dieback in England. Available online at;
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- 5 Forest Research Ash Dieback information pages, online at; <https://www.forestryresearch.gov.uk/tools-and-resources/pest-and-disease-resources/ash-dieback-hymenoscyphus-fraxineus/>
- 6 Devon Ash Dieback Resilience Forum - Ash Dieback in Devon, tacking action together. Available online at;
<https://www.devonashdieback.org.uk/>
- 7 Kent County Council, Managing Ash Dieback in Kent. Available online at;
<https://www.kent.gov.uk/about-the-council/strategies-and-policies/environment-waste-and-planning-policies/countryside-policies-and-reports/managing-ash-dieback-in-kent>

Additional Information

- Government publication - Managing ash trees affected by Ash Dieback – Operations Note 46a, Supplementary guidance for land managers who are responsible for individual and small groups of ash trees that are likely to be infected by ash dieback. Available online from;
<https://www.gov.uk/government/publications/managing-ash-trees-affected-by-ash-dieback-operations-note-46a>
- Highways Agency Interim Advice Note 172/13 Ash Dieback – Chalara fraxinea. Available online at;
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Further information

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