Trees Outside Woodland and Ash Dieback Toolkit update

Louise Hill – Defra
Jon Stokes – The Tree Council
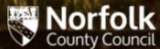
Trees Outside Woods

3.2% of Britain

Nearly 4.3% of England

Almost 20% of our total tree canopy cover

50% of TOWs disappeared since 1850

Trees Outside Woodland

Department for Environment Food & Rural Affairs

NATURAL ENGLAND

fera
Original thinking... applied

the tree council

Shropshire Council

Norfolk County Council
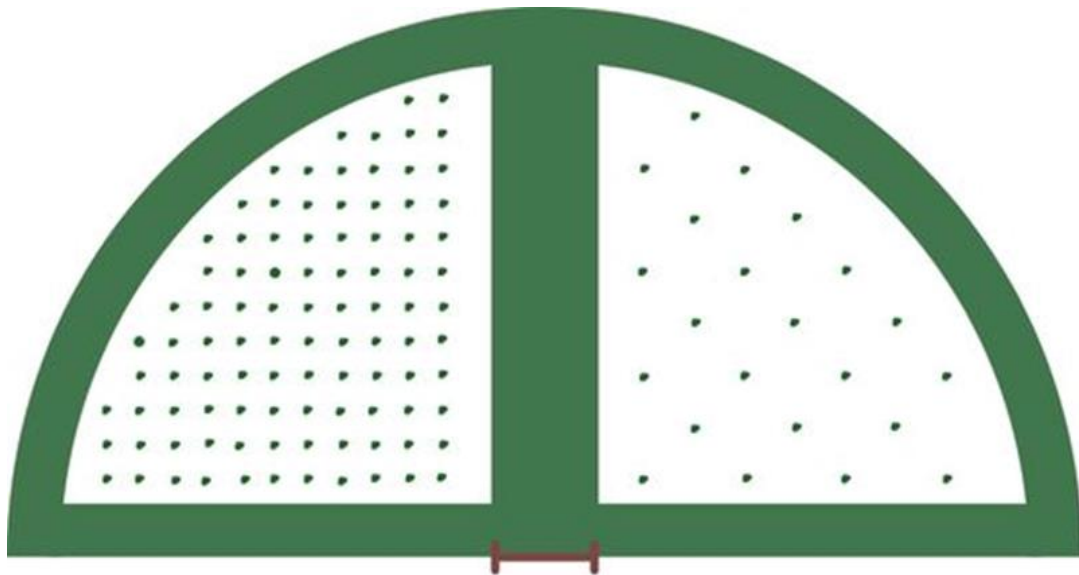
Chichester District Council

Cornwall Council

Kent County Council

Miyawaki Method Trials

Could this method be a cost-effective way to increase the success rate and enhance the benefits of tree planting in urban areas?

Miyawaki plot   **Comparison plot**

Miyawaki method planting vs Local Authorities' typical planting method in comparison plots

	Miyawaki Plot	Comparison Plot
Tree density	3 trees per square metre	1 tree per square metre
Soil works	Decompaction to 1 metre	No
Bio-enhancements	Yes	No
Mulch	Yes	If standard practice
Watering	Yes	Yes

Kent County Council
kent.gov.uk

Park Wood, Kent - February 2021

September 2021
7 months post planting

Comparison

Miyawaki

April 2022
1 year 2 months post planting

Comparison

Miyawaki

May 2023
2 years 3 months post planting

Miyawaki

Comparison

October 2023
2 years 8 months post planting

Miyawaki

Comparison

August 2024
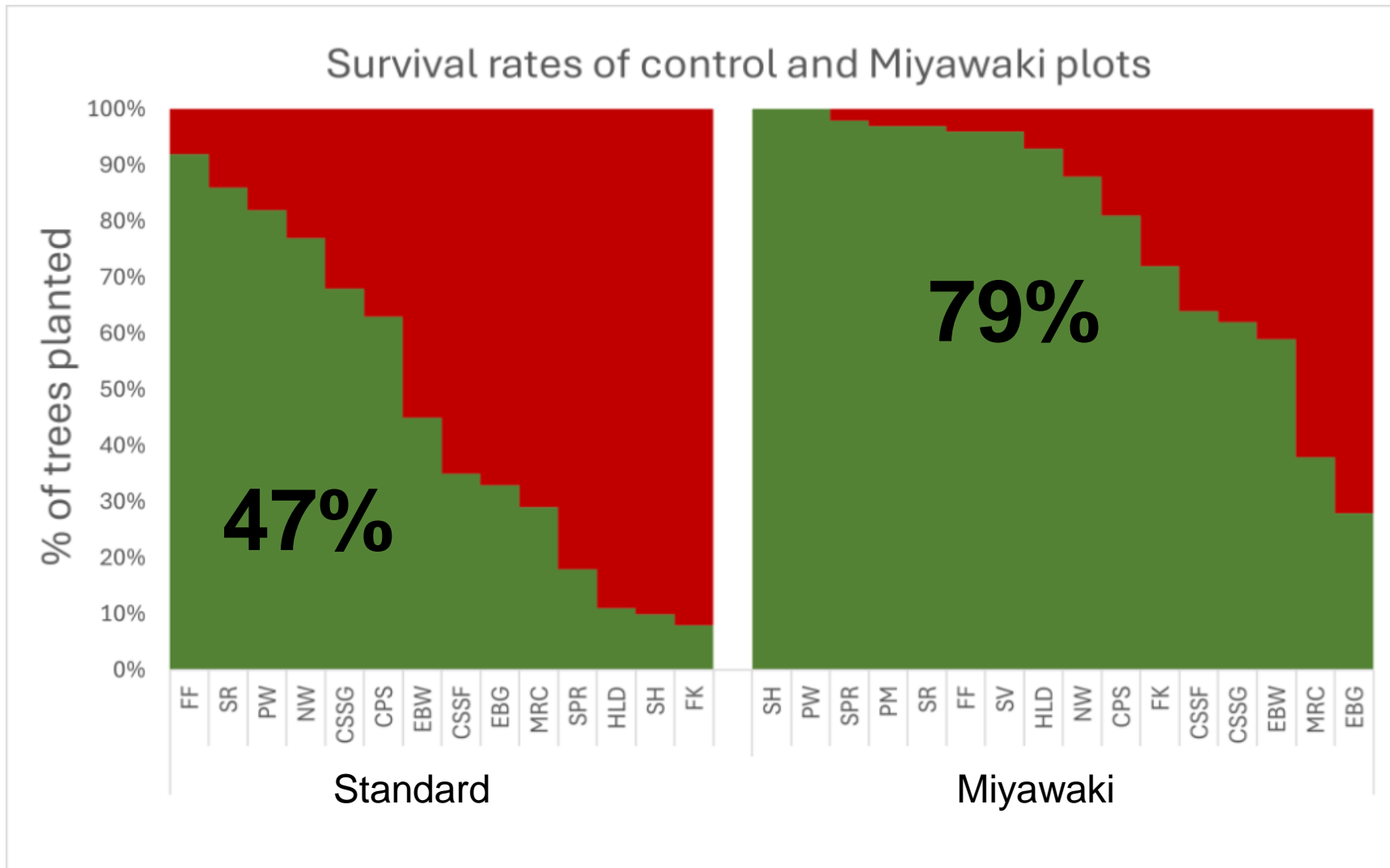3 years 6 months post planting

Miyawaki

Comparison

Miyawaki

Comparison

Results - Survival

Survival rates of control and Miyawaki plots

Alive   Dead or missing

Boughton-Under-Blean, Kent

Cornwallis Park, Kent

Decompaction Trials 2023/24
Excavation vs Auger vs Rotavation vs No Dig vs Standard

Community Tree Nurseries

- CTNs have the potential to make a valuable contribution to tree supply

- Often supporting TOW planting - supplying small planting projects with broadleaved trees

- Retain regional genetic diversity

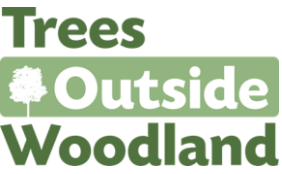- CTNs offer wider benefits : health, wellbeing and education
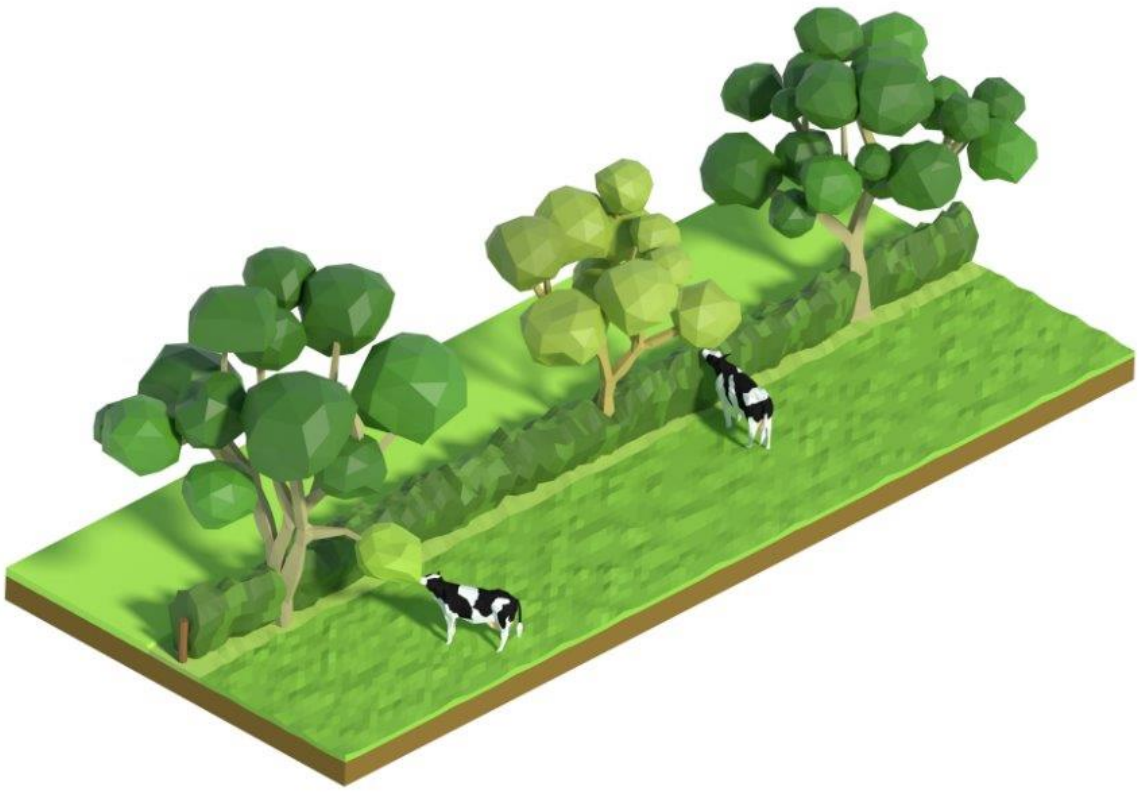
Trees on Farms

- Trees in hedges and field corners (marginal land)
- Shelterbelts
- Parkland
- Alley cropping
- Orchards
- Forest garden

Increasing tree cover

Trees in the Farmed Landscape

Trees on farmland is an alien concept for many farmers so marginal land is a good starting point

Biodiversity benefits and carbon sequestration without taking up productive land

Tree Schemes

Why did we run the pilot?

Tree schemes

➢ Distribute large numbers of trees

➢ Little evidence on success of tree schemes

This pilot investigates the survival rate of trees and cost effectiveness for tree establishment

Hypothesis

➢ Asking applicants to pay a proportion of the cost of trees increases survival rate

➢ This would represent better value for money than giving trees away for free.

➢Tree pack distribution

Tree Schemes in Numbers

- 144,650 trees planted in schemes in Chichester, Kent, Norfolk and Shropshire. Demand for both free and subsidised trees

- The subsidised scheme was £1 less expensive per survived tree and £2 less expensive per planted tree

- Cost per survived tree for the free tree scheme: £3.59

- Cost per survived tree for the subsidised tree scheme: £1.58

Brighter Future

- Lessons from this project could help us to vastly increase numbers of non-woodland trees

- We hope that the ideas learnt from this project inspire a new focus on these neglected tree communities – securing this vital part of our treescape for future generations.
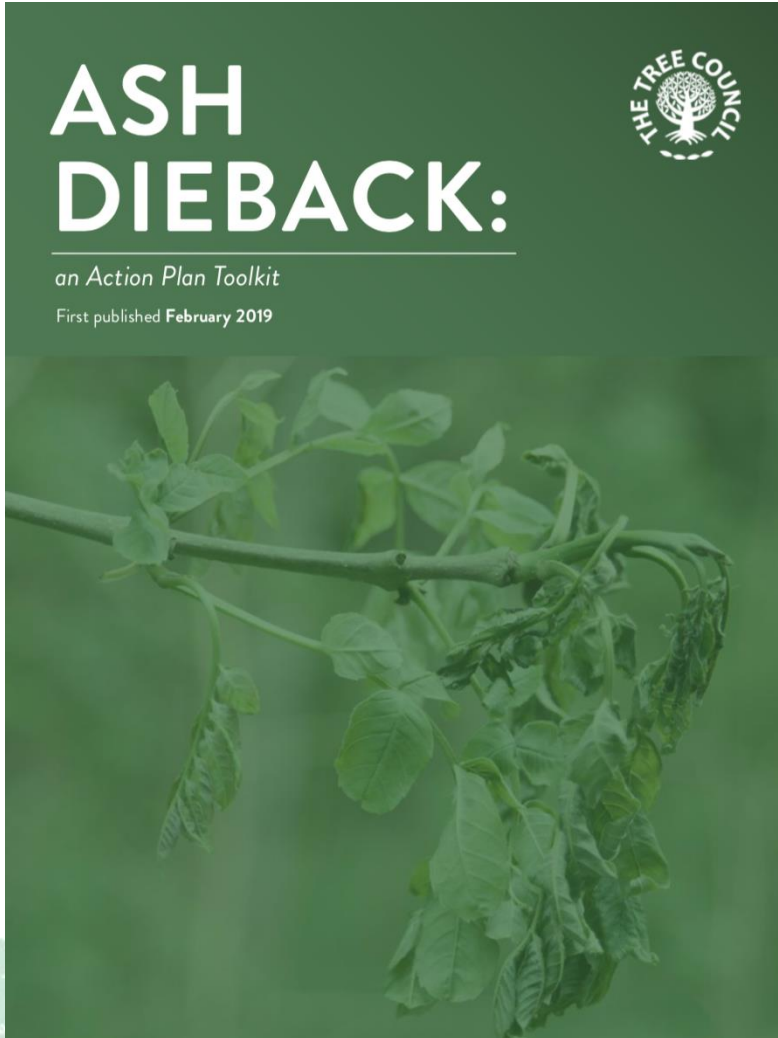
# Ash dieback Toolkit: update and look ahead

The Ash Dieback Toolkit – 2019

ASH DIEBACK:
an Action Plan Toolkit
First published **February 2019**

This Toolkit is based upon discussions with Local Authorities who felt *'unprepared for the impacts of ash dieback'*.

This Toolkit is designed to assist Local Authorities and other regional or local agencies to prepare an **Ash Dieback Action Plan** (ADAP) to respond to the problems that the affected trees will create.

KEY

PHASE 1: Awareness

PHASE 2: Planning

PHASE 3: Action

PHASE 4: Recovery
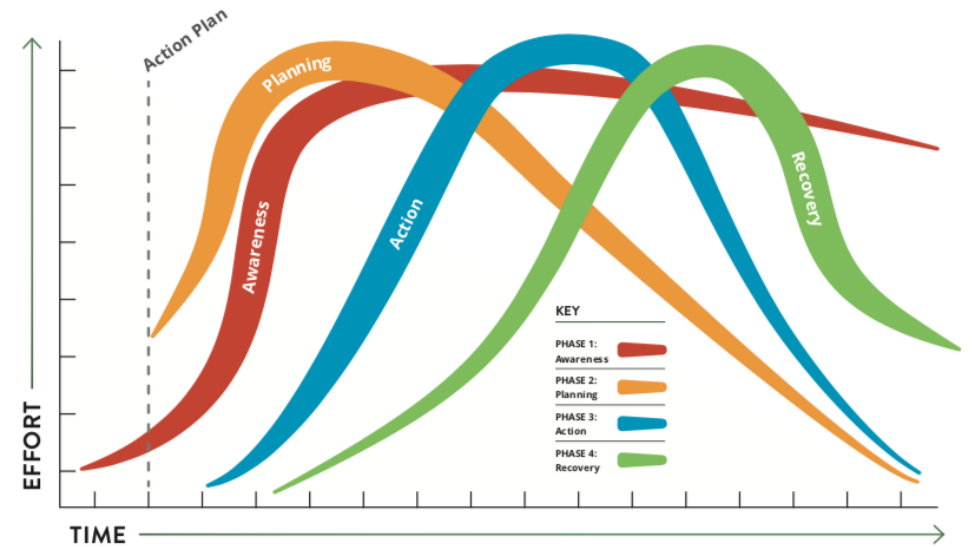
Awareness/anticipation: raising awareness about ash dieback

Planning/assessment: preparing and developing a Plan to help manage the problems.

Action/response to ash dieback: undertaking actions to remedy problems
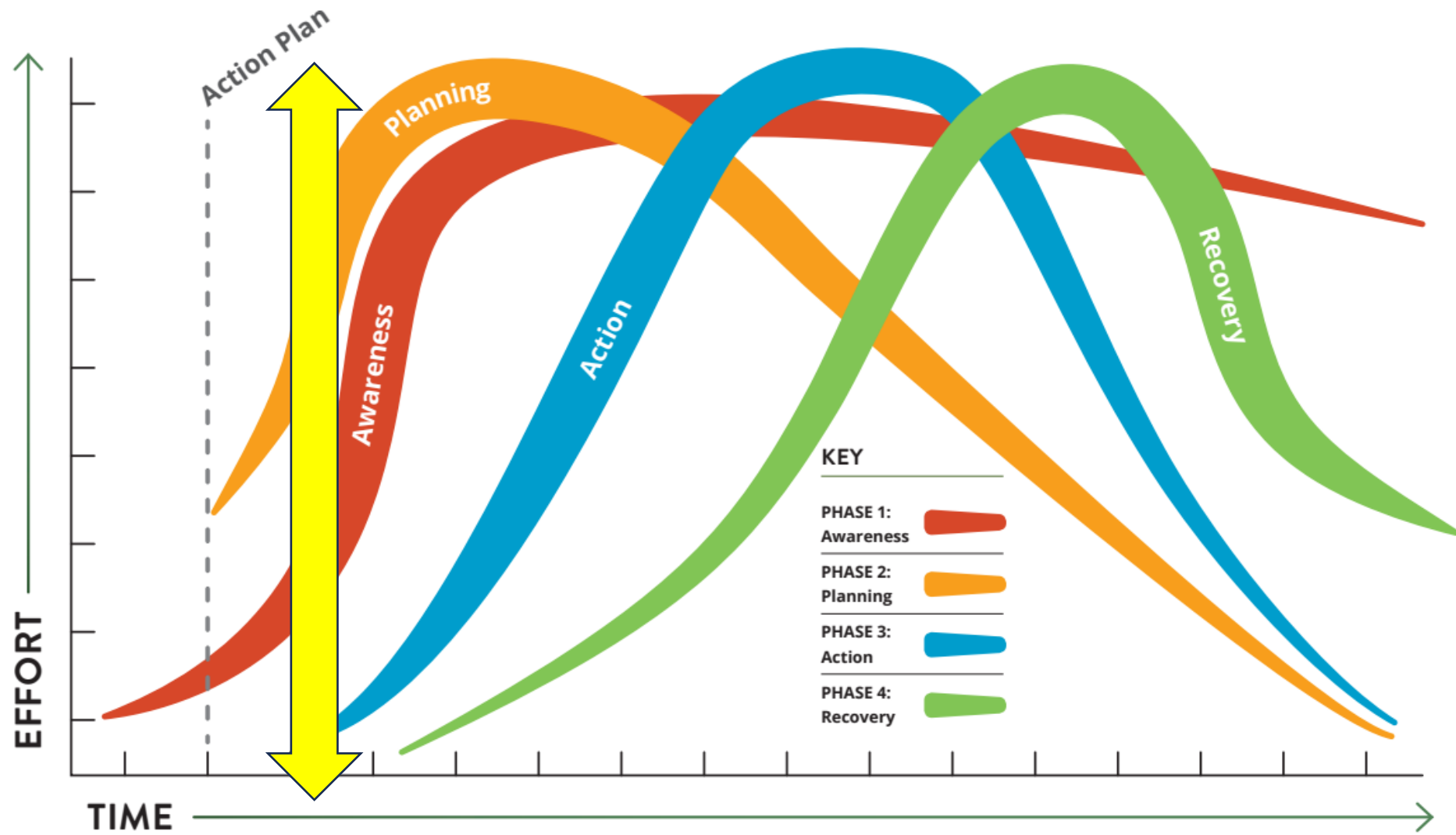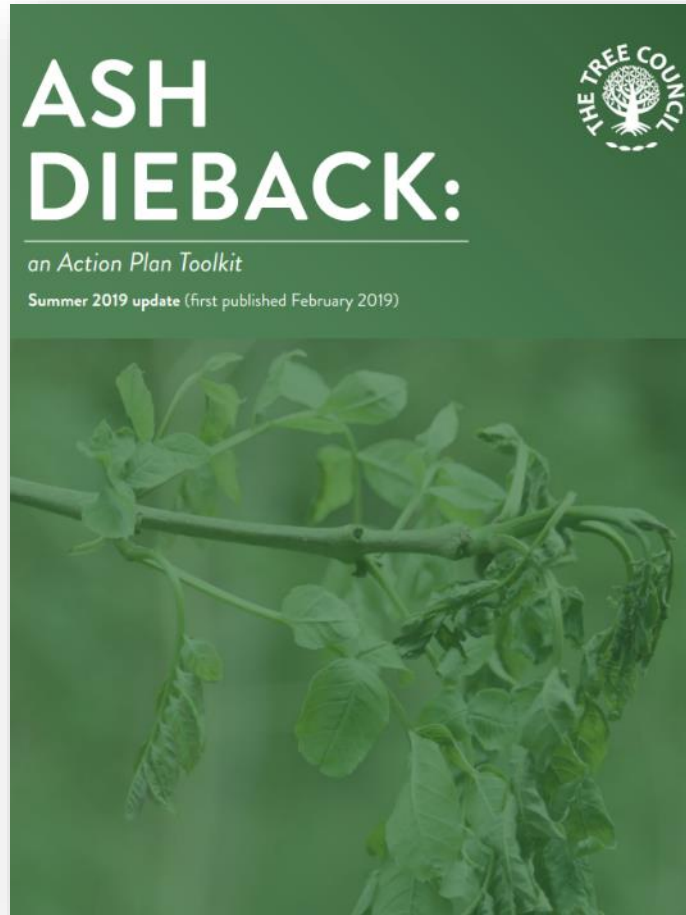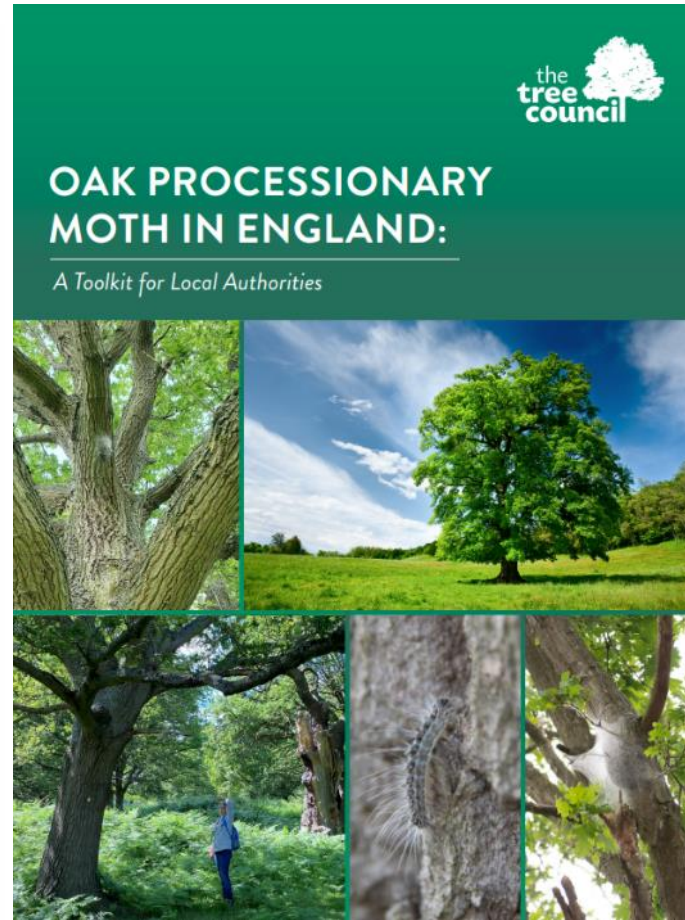
Adaptation and recovery from ash dieback

Figure 1: Phases of a tree pest/disease response

Co-design of toolkits for local authorities

2019

2022

2023

Where are we now?

Figure 1: Phases of a tree pest/disease response
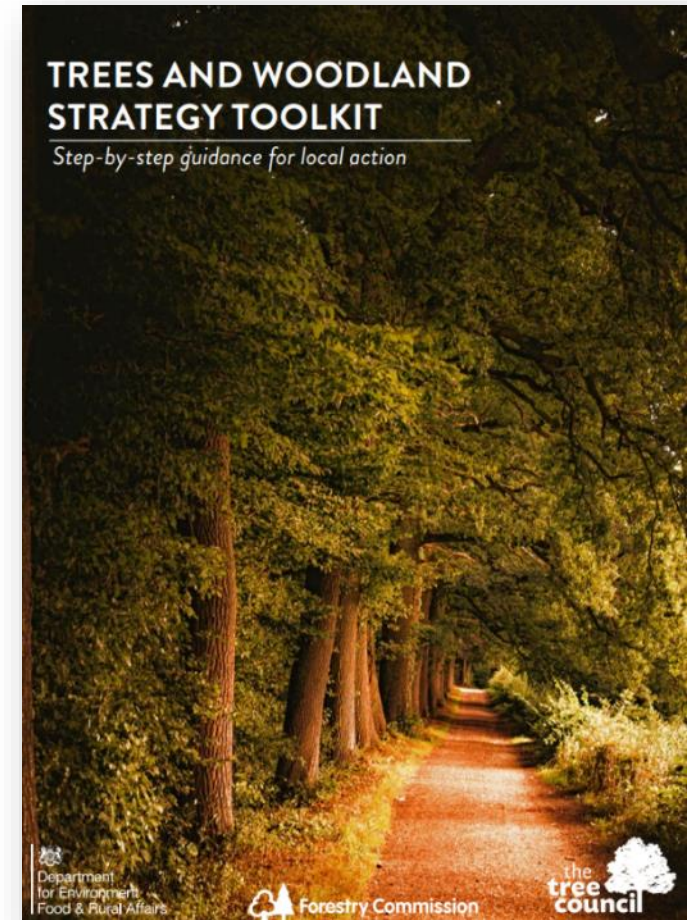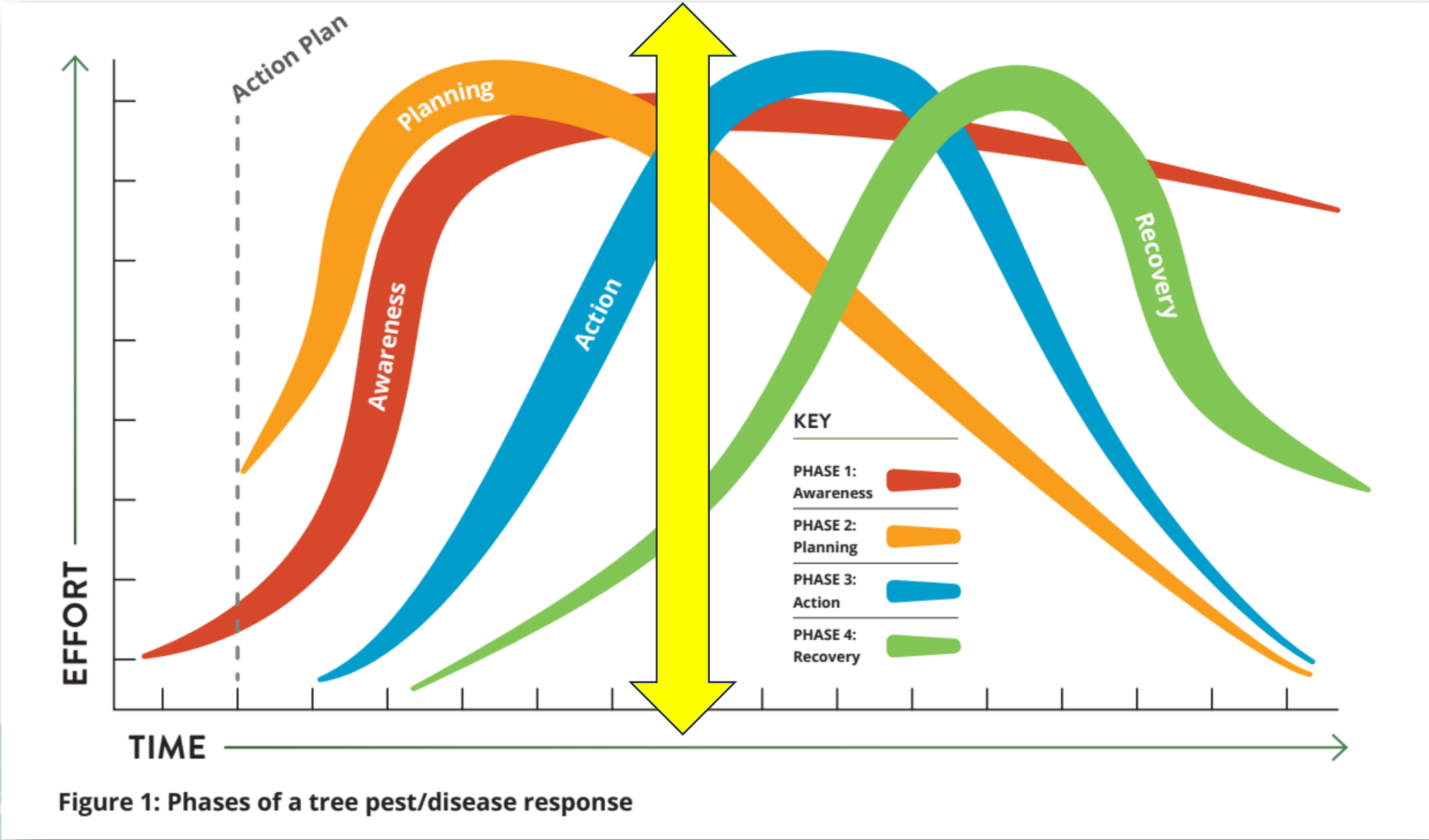
Current areas of work

Guidance for contractors

- TTC are helping to pull together a briefing note for contractors on risks to consider when planning and undertaking work on ash.

Review and update the toolkits

- Changing emphasis from preparation to action phase and looking towards recovery.
- We have looked to include additional case studies that reflect the real-world experience in England, Scotland and Wales.
- We have reviewed the toolkit for England, and will make any useful updates to the Scottish guides.

Understanding disease progression

- It's clear that disease progression is not linear, with some trees appearing to improve visually, though overall trend is of decline – what does this mean for risk assessment and response planning?
- A PhD student at the University of Birmingham is looking into methods for investigating ash wood destabilisation.

ASH DIEBACK
AN ACTION PLAN TOOLKIT FOR LOCAL AUTHORITIES

Second Edition

the tree council

If you are...	How to use the toolkit	Key highlights
Learning about ash dieback	Head to Part 1 - this provides you with key information about the disease and its impacts. For your ease, information from the original toolkit has been brought across to this document and updated using recently published research.	- Introduction to ash dieback - Updated distribution map - Cost implications - New research on genetic resistance and rates of decline
Developing an action plan	If you are looking to develop or update an action plan the entire toolkit will be relevant, with Part 2 being particularly useful. You should also refer to the original toolkit, which contains comprehensive guidance, tools, and templates for this stage.	**Updated toolkit** - Links to action plans published by a range of LAs **Original toolkit** - How to make the case for an action plan - Case studies with using lessons learnt - How to assess and understand risks - Guidance on survey techniques
Implementing an action plan	If you are focussed on action, you may wish to head straight to Part 3 for a wealth of new guidance relevant to you, illustrated by a series of real-world examples. However, do also check out Part 1 for the latest science if this interests you.	- Support with communication strategies - How to carry out systematic monitoring - Advice for minimising impacts on wildlife - Detailed advice for large-scale ash works - Insights into managing ash along roads and footpaths - Important considerations for protecting tree workers
Looking towards recovery	Every decision made throughout the response to ash dieback can affect recovery. Part 4 will help you approach this holistically, with useful tips and insights. From retaining ash where appropriate to replanting for resilience, there are steps that you can take to support recovery of healthy treescapes.	- A round-up of the latest scientific evidence - Tips for leveraging funding - An inspiring approach to recovery from the Saving Devon's Treescapes initiative

Updated the technical information

A local authority survey of declining ash trees using the four category system set out on

EVIDENCE OF GENETIC RESISTANCE AND FACTORS AFFECTING DISEASE PROGRESSION

Despite the spread of ash dieback, some trees appear to be demonstrating degrees of genetic resistance to the fungus and there is also evidence that progression of the disease may be affected by other factors. One of these may be the position of the tree in the landscape. Work in France has suggested that ash trees growing in a less dense canopy structure – either because of low stocking densities or as a result of being an isolated tree in an urban area or a tree in a hedgerow – are less susceptible to the disease and experience slower progression (Grosdidier et al 2020)[5]. This may be linked to the microclimate experienced by the trees, as high moisture levels (which are found for example in shaded woodland) are correlated with increased severity of ash dieback (Grosdidier et al 2020; Cracknell et al 2023[6]), and higher temperatures are correlated with lower levels of ash dieback (Grosdidier et al 2020). Notably, this evidence was gathered in a region with higher summer temperatures than are currently experienced in the UK, and so may not be replicated in our treescapes. As well as the possible impact of temperature, isolated trees may experience lower exposure to fungal spores as there are fewer neighbouring sources of the fungal infection.

Individual tree physiology also influences severity of infection, with larger trees and those with faster growth rates experiencing lower levels of crown dieback (Cracknell et al 2023; Klesse et al 2020[7]). This can be explained as the loss of leaves and hence sugar production reduces a tree's capacity to produce large vessels as the spring wood develops. The reduction in the size of the vessels restricts the flow of water and sugars around the tree, which then reduces the capacity of the tree to photosynthesise. Inevitably these processes produce a feedback loop which result in even slower growth, less energy, smaller vessels and so on until the tree eventually dies (Klesse et al 2020).

The speed of infection, location of the tree and availability of water and nutrients all interact to affect disease progression. The combination of these factors means there can be large differences in the severity of ash dieback infection for each individual tree, highlighting the importance of frequent and thorough monitoring.

Width of tree rings decrease at the left of the picture, demonstrating the reduction in vessel development as ash dieback takes hold

Taking Action

Action 1: Creating a communication strategy
- Case study: West Sussex County Council – Communicating with external landowners
- Case study: Leicestershire County Council – The importance of internal collaboration

Action 2: Monitoring your ash and continuous works
- Case study: Norfolk County Council – Survey processes and data collection

Action 3: Planning and carrying out major tree works and large projects
- Implications of ash dieback on an SSSI Guidance for managing SSSIs with ash dieback

Action 4: Trees and the highway
- Ash dieback along Public Rights of Way
- Case study: Guidance for public

Action 5: Preparing and delivering a tree strategy
- Case study: Kent County Council's tree strategy

Action 6: Dealing with waste timber
- Case study: Hampshire County Council – What happens to the timber?

Action 7: Ash dieback and worker safety

Creating a communication strategy

Action 1: Creating a communication strategy

Managing ash dieback effectively requires the involvement of a range of internal and external stakeholders with different perspectives and expertise. Collaborating with this range of individuals and organisations is key, but can be challenging. It is therefore important to develop a communication strategy, which involves:

- Identifying all stakeholders (internal and external)

- Understanding the information you need to share with them

- Deciding how to communicate this information most effectively (see Case Study 3 below for an example)

- Implementing the tools required to engage and distribute information. Examples include setting up forums (Devon Ash Dieback Resilience Forum), producing online resources (Hampshire Countryside Services video), setting up websites (Sheffield City Council).

- Internal engagement and collaboration within local authorities is vital as the expertise of different departments is required. Creating a working group or board with representatives from departments who will be involved in the response can be helpful for ensuring buy in and spreading resource need (see Case Study 4). We have found during the development of this Toolkit that it is extremely helpful to gain political support at the earliest stage for the organisation's plans for ash dieback. This political support is usually vital to ensure resources and officer time.

On site interpretation poster explaining the issue of ash dieback, produced by Hampshire County Council.

Planning and Implementing a Recovery Strategy

Understanding the impacts of ash loss on biodiversity

Impacts of ash works on biodiversity.
- Case study: Considering European Protected Species.

Maximising retained ash numbers
- Case Study: West Sussex – Factors to consider when retaining ash

Creating a resilient treescape for the future
- Devon's Recovery Strategy

Funding restoration of the landscape
- Case study: Saving Devon's Treescapes

In the seeds and healthy seedlings of ash lies the potential for future resilience, potentially producing resistant young trees - as may be happening here on Network Rail land in north London.

Guidance for contractors

- Aiming for concise document that pulls together available evidence and insights into impact of ash dieback on risks for contractors.

- Case studies for a range of scenarios will also be shared, gathered through conversation with a range of individuals.

- The document will not make recommendations but will make useful information available.

- We will continue to involve and consult key people and groups, including Ash Dieback Safety Group, and Health and Safety Executive.
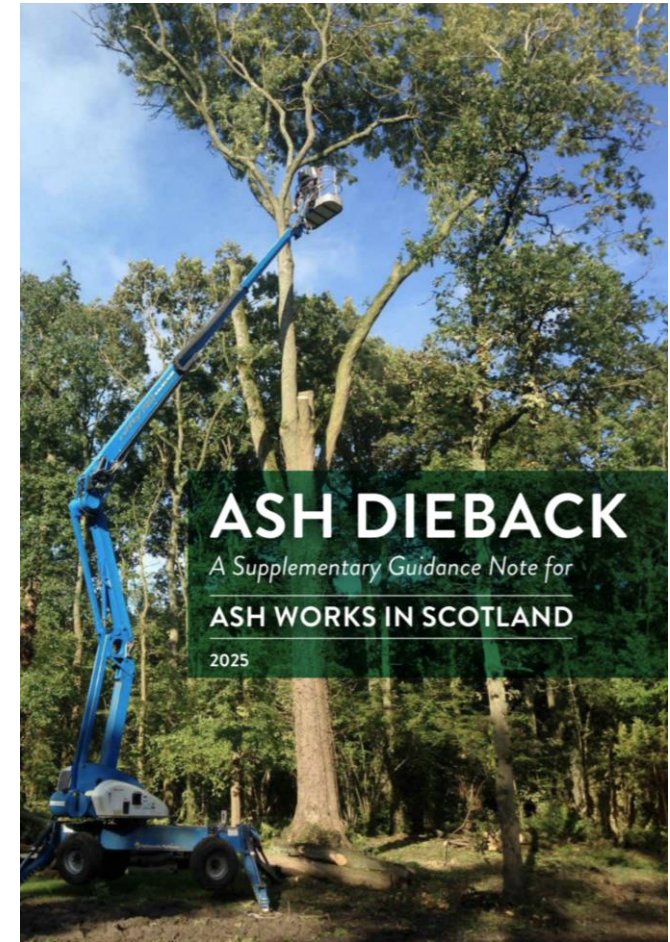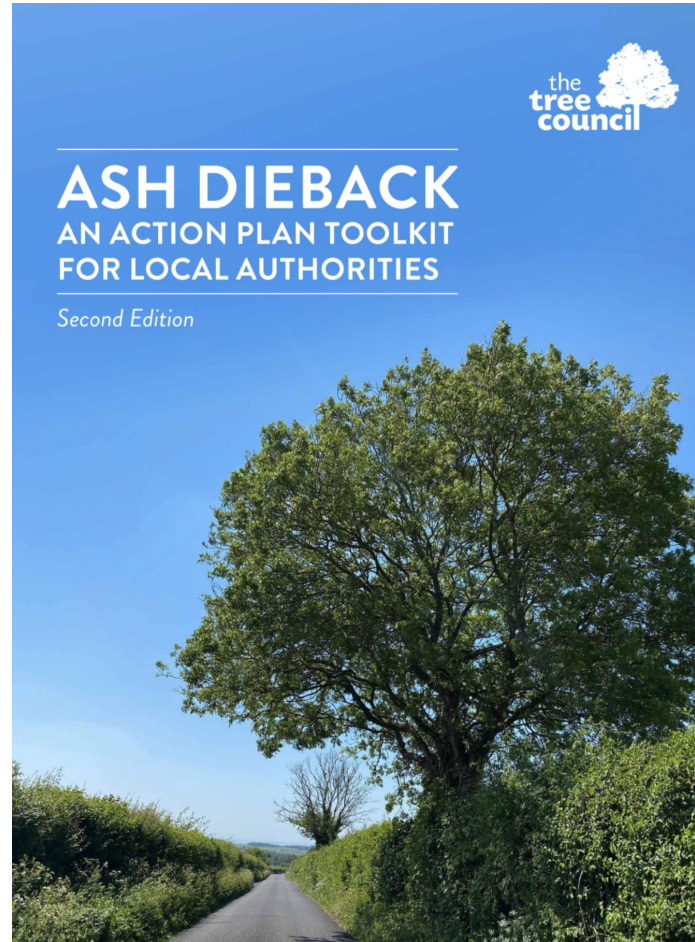
Next Steps

Publication of both documents in March 2025

In person event for APSE in Manchester – 13th March

Online workshops in late March and early April on the toolkit and guidance for local authorities and others.

ASH DIEBACK
AN ACTION PLAN TOOLKIT FOR LOCAL AUTHORITIES
Second Edition

ASH DIEBACK
A Supplementary Guidance Note for
ASH WORKS IN SCOTLAND
2025

Acknowledgements

- Jackie Shallcross, Becca Thomas, Tom Dale, Jess Allen, Charlotte Benham and Clare Bowen (The Tree Council)
- Jill Rudgewell and Ann Lazenby (Natural England)
- Sophie Rudgewell and Lisa Smith (Defra)
- Curtis McKnight, Glyn Jones and Jake Evans (Fera Science Ltd)
- Bianca Ambrose-Oji (Forest Research)
- Louise Butfoy (Kent County Council)
- Sophie Hamnett and Mike Pierce (Chichester District Council)
- Ben Norwood (Cornwall Council)
- Nick Rowles (Shropshire Council)
- Emma Cross and Debbie Murray (Norfolk County Council)

More info and resources

Trees Outside Woods: **https://treecouncil.org.uk/science-and-research/shared-outcomes-fund/**

Ash Dieback Toolkit: **https://treecouncil.org.uk/science-and-research/ash-dieback/**