Sheffield Ash Dieback Action Plan

Contents

1. Summary

1.1. In line with the best practice approach advocated by Defra and the Tree Council, Sheffield County Council (SCC) have developed this action plan to outline how we plan to manage the anticipated risks and issues associated with the spread of ash dieback (ADB) across the Sheffield metropolitan area.

1.2. This action plan seeks to ensure that we are ready and adequately resourced to respond to the effects of the disease and to implement a recovery plan. The disease has already reached all parts of the city and during the next 5 to 15 years we will see widespread death of ash both in the city and the wider area.

1.3. Based on experience from other northern European countries, it is prudent to assume that ADB may result in the loss of between 75% and 90% of ash trees. However, the levels of decline and mortality that will result are matters of considerable uncertainty. In addition, as described below, there may be a considerable difference between mortality rates in woodland and non-woodland (urban) situations.

1.4. SCC's Tree Management Strategy identifies a standard for the management of the council's tree resource and it will provide the basis for safety assessments of ADB-affected trees. See appendix A for risk assessment matrix – NB this matrix is only a guide to decision making. It only explicitly references the main defects we look out for, but it is broadly applicable to all areas of tree risk management, including ADB. .

1.5. In line with the Tree Management Strategy, the County Council will take a risk based approach to the management of ash dieback. The emphasis will be on maintaining the highest levels of health and safety for the public while aiming to minimise the impacts on landscape, ecology and the environment. High risk areas are considered to be highways, schools, playgrounds, and other areas of high public use.

2. About ash dieback

2.1. Ash dieback is a fungal disease of ash trees *Fraxinus excelsior*. First recognised in Poland in 1992, it was initially given the Latin name *Chalara fraxineus* and though it is now officially called *Hymenoscyphus fraxineus*, it is still sometimes referred to as Chalara. Based on the effects of the disease so far in Europe, the assumption is that the UK may lose between 75% and 90% of our ash trees, with mortality rates likely to be higher in woodland than in non-woodland situations. This estimate will inevitably be refined as we learn more about ADB in the UK, but responding to its impact and restoring the lost landscape will certainly be a major challenge.

2.2. The fungus has spread rapidly across Europe. First recorded in Britain in 2012, evidence suggests it arrived here perhaps a decade earlier. It is now widespread in the environment, with the most advanced effects of the disease in southern and eastern counties, particularly Kent, East Anglia and Devon. The disease is already having a significant impact in the Peak District and in other parts of Derbyshire and Yorkshire. From observation and the data gathered so far the disease is spreading across Sheffield from the south and west, though affected trees are present in all areas.

2.3. There is no cure for the disease, but trees do exhibit varying degrees of resilience. Evidence from mainland Europe has suggested that 10% of trees are 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 - over time this may 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 an area.

2.4 The rate of decline of any individual tree varies with age, young trees dying quickly and mature trees declining more slowly. As an example, the photographs below show the change in one tree in Devon over a one year period (photographs taken 06/07/16 and 07/07/17 respectively). The pictures show a 10 - 15% decline in the canopy in a single year and anecdotal reports from areas of the UK currently infected by ash dieback support this as a typical rate of decline. However, some individual trees (depending on their health and condition) can decline much more rapidly.

2.5. Research is ongoing into the relative tolerance of UK native ash. The Living Ash Project, established by a partnership of organisations including Defra and Forest Research, is currently carrying out screening and selection trials to identify individuals with a high degree of tolerance which may be cloned or bred for future restocking. However, it remains sensible to plan on the basis that a high proportion of our ash trees will *eventually* be killed or severely damaged.

2.6. The disease is spread by the wind through spores produced from fruiting bodies on the central stem (the rachis) of fallen leaves, or 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. It is important to note that because there are multiple entry points for the spores, individual branches

can become brittle and vulnerable to failure before die-back in the rest of the crown is very advanced.

Basal canker on young ash

2.7. The disease affects all ash trees: young or old; maiden, coppice or pollard. Young trees and coppice re-growth succumb quickly, but many healthy mature trees seem to be able to survive for many years, depending on their growing conditions. So far in Sheffield, large trees outside woodlands seem to be disproportionately badly affected, while inside woodlands younger trees are more affected. This is perhaps due to the relative spore densities: outside woodlands the larger trees are more exposed to wind-borne spores and there is relatively little leaf litter; within woodlands the younger trees are nearer to the spore-producing leaf litter.

2.8. In the long term there is no way of stopping the spread of the disease. In the short term its spread can be delayed by the removal of fallen leaves (rarely practical except with isolated trees in an urban environment). Since the spores are wind-borne, biosecurity measures such as washing boots and vehicles when leaving infected sites are largely redundant in preventing the spread of ADB. However, biosecurity is still important in limiting the spread of other tree diseases, such as water-borne *Phytophthora* spp.

2.9. Typically infection rates follow a J-shaped curve, with high levels of infection only apparent about 8 to 10 years after the fungus first arrives in an area. Experience from Suffolk, Kent and Devon suggests over 90% of woodland trees will exhibit symptoms, often severe ones. The degree to which the disease impacts on individual trees can, however, vary considerably between years – a progression towards death is not inevitable, although trees that are weakened will become more susceptible to other pathogens.

2.10. In non-woodland situations, there is currently still uncertainty about levels of infection, dieback and mortality. Many factors influence the severity of the disease in these situations include levels of tree stress, the density and age of trees, topography and hydrology and the prevalence of other pathogens such as honey fungus.

2.11. For further information on the biology of the fungus and on its symptoms see the following:

- The Forestry Commission. http://www.forestry.gov.uk/ashdieback
- The Living Ash Project http://livingashproject.org.uk/

- *Chalara: On the front-line.* Gary Batell, for Suffolk County Council. Presentation available at http://rfs.org.uk/learning/external-advice-and-guidance/tree-diseases/
- For an up-to-date GB map on confirmed reports for the disease, see http://chalaramap.fera.defra.gov.uk/
- A visual guide to symptoms in large trees is available in Appendix B

3. Ash Trees in Sheffield

3.1 Potential numbers of affected ash trees

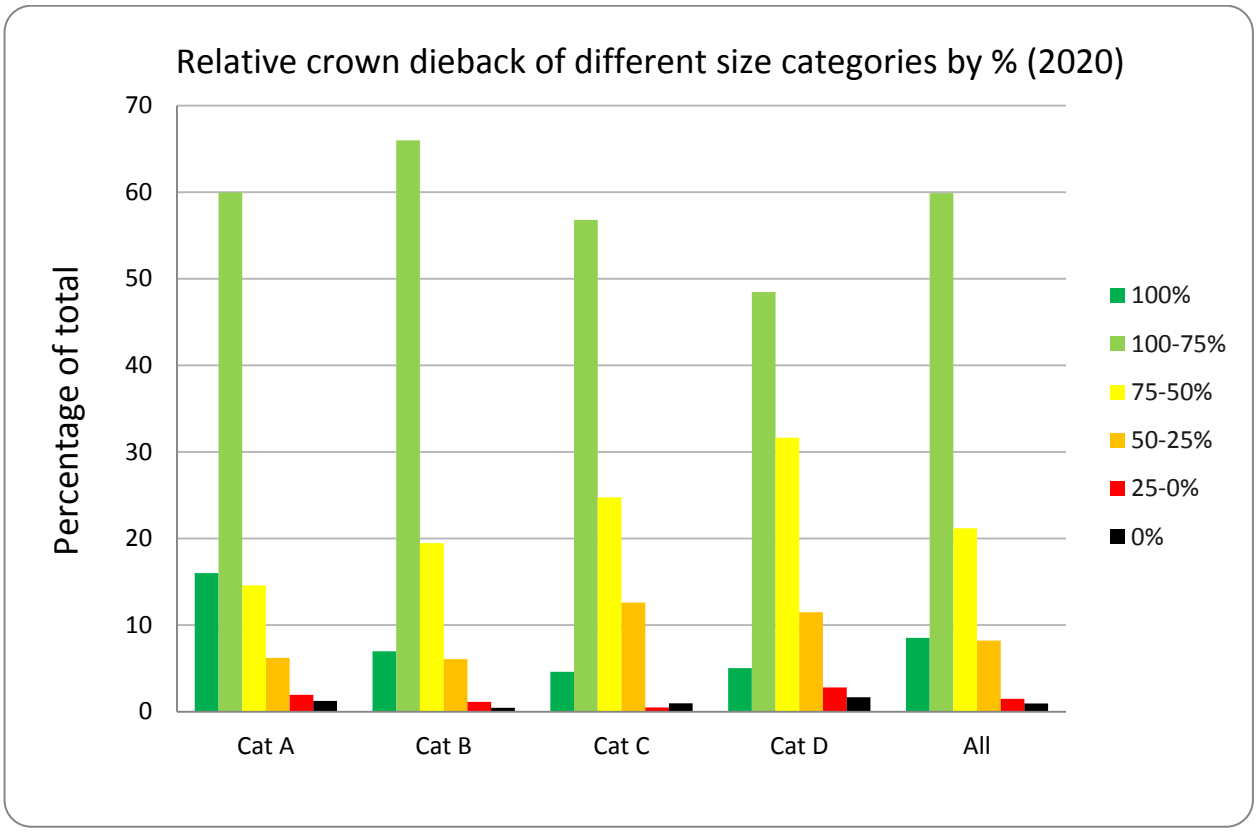
- Based on the iTree survey carried out by Sheffield City Council (SCC) in 2017, there are approximately 253,000 ash trees in the Sheffield metropolitan area, representing 6.6% of the total tree population.
- Approximately 153,000 of these are situated on Council land. The remaining 100,000 are in private ownership
- National guidance suggests that the disease will kill up to 90% of Ash trees in woodlands, but for non-woodland trees the figures are more uncertain. A best case scenario is that as few as 50% of Ash trees in urban areas will be killed, though our surveys already show that only a small fraction of trees are unaffected once the disease has taken hold in an area.
- Based on these figures it is estimated that Sheffield will lose between 127,000 and 215,000 Ash trees in total
- This includes the loss of between 76,500 and 130,000 trees on Council managed land
- Older broadleaf woodlands (those officially classed as Ancient Semi-Natural Woodland) in Sheffield are naturally Oak-Birch-Hazel in composition, though many were planted with beech, sweet chestnut and other species in the late 19th century. These woods have a smaller ash component than ancient woodlands in the Peak or in lowland Britain. Secondary woodlands (those which have self-seeded on land that has fallen out of formal use, mostly in the last 100 years in Sheffield) do, however, have a substantial ash component. In addition, many broadleaf plantations from the past 15-40 years, such as in the Mosborough townships, are predominantly ash.

4. Ash Dieback in Sheffield – the current situation

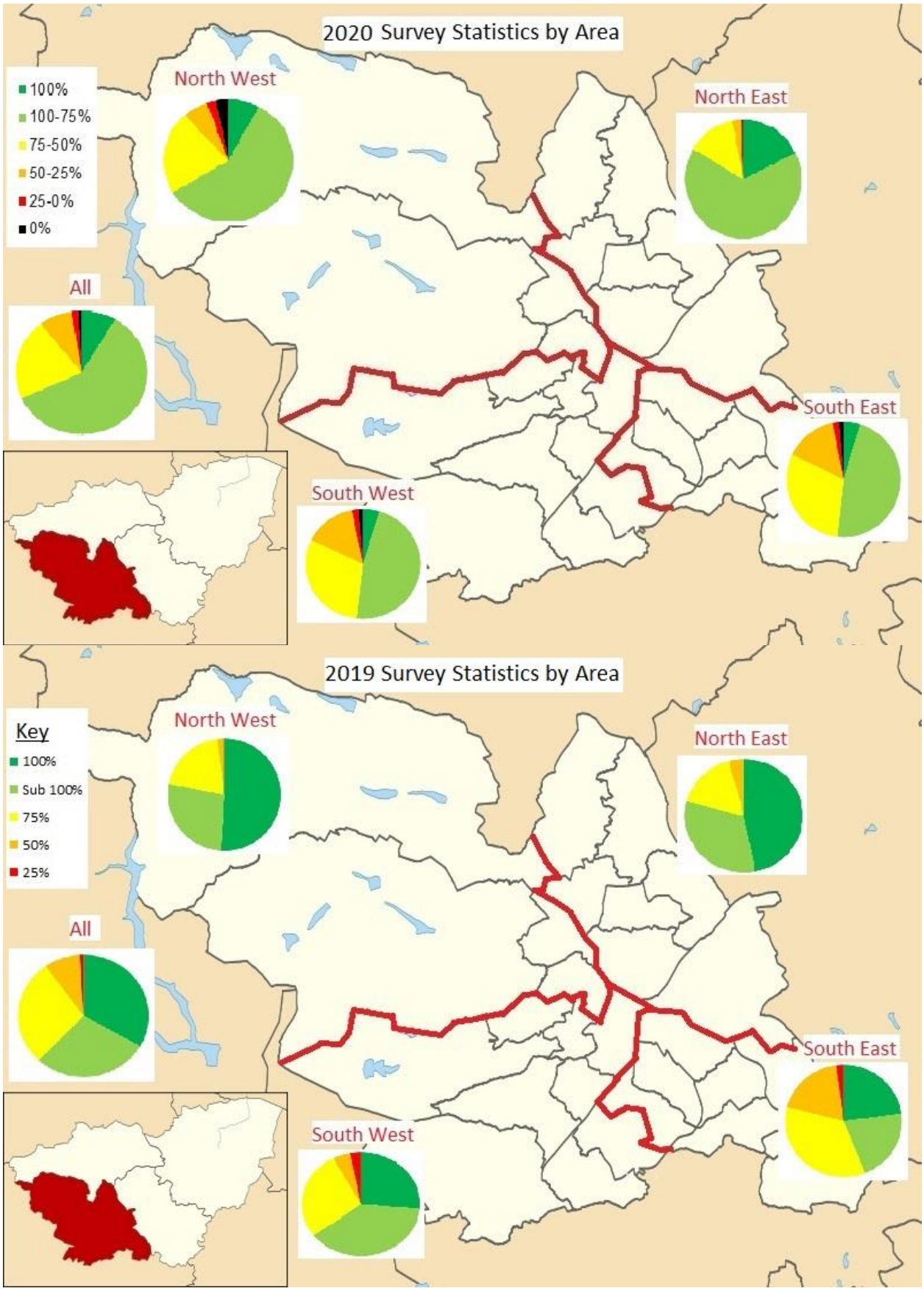
4.1 Ash dieback was first officially confirmed in the wider environment in the Sheffield area in 2016, but anecdotal observations of thin-looking mature ash suggest it may have been present for several years before this.

4.2 Surveys carried out over summer 2019 and 2020 indicate that ADB is now present in every ward in Sheffield, though the worst effects are in the south and south west of the city. No surveys were carried out within woodlands, though some roadside woodland edges were included. Only trees with a trunk diameter of 7cm (at 1.5m height) were recorded. The charts on the next page show the breakdown of the effects by tree size and area quadrants. Surveys were conducted using dieback

categories from 100% full crown down to 0% crown remaining. The 2019 categories were broadly similar, though not identical, to the bands used by Norfolk County Council in their surveys with FERA. Surveys conducted in 2020 have used Norfolk's categories in order to get a better comparison with that county, which has been dealing with the disease for much longer.



Size categories relate to the tree's diameter at 1.5m height. Cat A: up to 20cm; Cat B: 20-40cm; Cat C: 40-60cm; cat D: 60+cm



4.3 The size breakdown chart shows that, as mentioned at 1.7, outside woodlands larger trees are more badly affected than young ones. From day to day (unrecorded) observations it is clear that within woodlands it is mainly younger trees being killed.

In addition to the relative spore loads within and outside woodlands, there is also a relative lack of young self-sets outside woodlands.

4.4 The overall results from the 2019 survey suggest that the progress of ADB in Sheffield was at roughly the same stage it was in Norfolk in 2016. Further surveys will take place every summer to chart the progress of the disease and see if decline and mortality follow a similar pattern.

5. Ash Dieback in Sheffield – Managing the risk

5.1 Legal responsibility and oversight

As well as having responsibility for millions of trees on public land, SCC also has enforcement powers and regulatory oversight to deal with certain categories of private trees. This breaks down as follows:

- SCC is responsible for the inspection and maintenance of all trees on land it owns and manages, with the exception of Highway Trees.
- Highway Trees are managed and maintained by Amey under the terms of the Highways PFI contract. The contract is overseen by the Streets Ahead team, which remains part of SCC.
- The Highways Enforcement team also remains part of SCC. They have enforcement powers to compel private tree owners to deal with trees which are obstructing or posing a risk to the Highway network.
- SCC's Building Control department has similar enforcement powers over hazardous trees on private land away from the Highway network.
- Hazardous trees alongside public footpaths and bridleways are dealt with by SCC's Public Rights of Way (PROW) department – though as PROWs are part of the Highway network, trees on adjacent land which threaten a PROW are also dealt with by Highways Enforcement
- All of these departments are likely to have significantly increased workloads as a consequence of ash dieback.

5.2 Managing SCC trees

SCC's Corporate Tree Risk Management Strategy sets out the frequency of specialist tree inspections on Council land based on an assessment of the level of risk at each site, with better used sites inspected more frequently. Tree inspections take into account the likelihood of failure of any particular tree, the size of the tree or limb and the level of use in the target area. While these criteria will remain the same during the predicted epidemic, inspection frequencies may have to increase significantly, which is likely to require more resources.

5.3 Risk to tree workers

ADB infected trees can become unpredictably brittle and unsafe to climb at different stages of decline, so judging when action is necessary will depend on circumstances. Devon County Council have produced a triage assessment which assumes that trees are no longer safe to climb when they are at or below 50% live crown remaining. However, pull testing and felling taking place in 2019 in Sheffield showed that some trees are extremely brittle in whole or in part even at 75% or more

of their live crown remaining. Many trees may therefore need felling using MEWPs, cranes or even tree shears.

5.4 Prioritising work

Research conducted by Fera Science Ltd (formerly the Food and Environment Research Agency) in conjunction with Norfolk County Council indicates that 50% crown remaining is the point at which action should be considered for trees within falling distance of significant targets, and 25% crown remaining is the minimum point of action for such trees.
SCC will prioritise work on trees which have between 50-25% crown remaining. However, each tree or tree group will have to be judged according to circumstance. Hazardous trees in low risk areas such as woodlands away from paths or roads will, where possible, be left in order to conserve their ecological and landscape value. In high risk areas, however, where a progressive decline is noted, trees may have to be removed before they reach the 50% stage. This may also be the case for hard to access trees – see next section

5.5 Hard to access trees

Trees in difficult locations e.g. surrounded by properties or infrastructure, in cemeteries, or where access for machinery is difficult, will also be considered for felling at a much earlier stage in the disease's progress, to minimise the risk to arborists working on the tree. This will be the case for some trees subject to TPOs or in conservation areas, so planning applications for tree work will need to be considered with this in mind.

6. Impacts on the private and public estate

6.1 – Landscape and biodiversity.

Like most native species, ash supports an enormous number of organisms – invertebrates, fungi, lichen, birds, mammals, etc. Only a few of these are exclusively dependent on ash, but the loss of such a large number of trees will inevitably have an impact on many other populations at the same time. However, large amounts of different types of deadwood (small and large diameter, standing and fallen timber) will support other organisms. The potential loss of trees will also have a significant effect on the landscape, so a robust replanting programme is essential to our management of ash dieback. This programme should begin before large-scale felling has to take place – see 7.1

6.2 – Private landowners

Besides the financial impact on private landowners/households of felling trees, there are potential liabilities should privately-owned trees fail. The Council should do its best to counter any lack of awareness or disregard of duty of care with publicity campaigns. We must also ensure that enforcement officers have enough resources to deal with ash trees on private land. There is likely to be a significant increase in tree work applications to planning officers, so again there needs to be enough resource for these applications to be processed in time.

6.3 – Private contractors

Contractors will be on the frontline of the management of ADB – as long as the council has a proactive approach to managing the public risk, contractors will be the ones most at risk from ADB-affected trees on public land. As the council works closely with those contractors on our books, we can ensure that these works are carried out as safely as possible given the available information and resources. Contractors working on private land, however, come with varying levels of expertise and knowledge, and there is a danger that uninformed or unqualified contractors will work on ADB-affected trees unaware of the actual risk they represent. The council can advise the public when we are notified of work in conservation areas or on TPO trees, but otherwise we need to ensure that the general public is aware of the dangers through publicity campaigns.

6.4 - Reputational damage to Sheffield City Council

The Highway trees issue has earned Sheffield a largely undeserved national reputation for indiscriminate felling of trees. Although a more balanced perspective is now emerging within the city, and the opposing sides are now working more closely with each other, large-scale felling of ash has the potential to spark more protests if it is not handled sensitively. It will be important to get active public groups like STAG and Friends groups involved early on so that they understand the issue and can communicate it to their own constituencies. Amey will face the same problems with Highway trees as every other tree owner, so it is important that they receive the same understanding and support when dealing with it. Public safety is the paramount concern. The disease does not respect ownership boundaries.

6.5 – Financial impacts (council-managed trees)

- We estimate that of the 153,000 Ash trees currently situated on council land, approximately 27,540 are in publicly frequented places and any failure could pose a threat to the public or property (the remainder are situated away from areas of public use, usually in woodlands or fields where the risk to people or property is considered to be very low)
- We estimate that we will need to remove between 13,800 and 24,786 Ash trees on council land as a direct result of the disease
- The average cost of removing each tree is estimated at £400
- Therefore the estimated cost of removing the infected trees that pose a risk is likely to be between £5,520,000 (if 50% affected) and £9,914,400 (if 90% affected)
- A replacement planting programme to ensure long-term replacement of total losses of council managed trees (where natural regeneration from other species isn't likely) could cost a further £1,000,000
- Assuming the course of the disease runs for 15 years, this equates to an annual cost of £435-661,000

7. Recovery

7.1. Replacing the ash trees that will be lost over the next 10-15 years will be essential to restoring the landscape but will require a lot of trees, and money to pay for them. Expanding tree cover across the city at the same time to meet commitments on climate change will make the task more challenging. There has been an explosion of

interest recently in planting trees in the UK and this makes it unlikely that enough commercial stock will be available to meet demand, at least in the short-term. NGOs such as the Woodland Trust and Trees for Cities may be able to meet some of the demand, but other options involving public contributions are likely to be needed. In order to maintain bio-security and ecological integrity, any commercial stock will have to be specified as originating from British provenance seed which has been germinated and grown in Britain for the full extent of the tree's life.

7.2 SCC's Trees and Woodlands Strategy states that as a minimum we aim to plant 2 trees for every one we remove, and this applies equally to trees felled because of ADB. It does not include trees felled in woodlands or other more informal areas where natural regeneration is a much more effective way of restoring the canopy. Replacement trees will be a mixture of heavy standards, standards, feathered trees and whips. It won't always be possible to plant replacements in the same location or area.

7.3 Trials have been established in East Anglia to measure resistance to ADB in ash grown from a range of seed provenances across the British Isles, to identify those which exhibit high levels of resistance. When suitably resistant sources have been identified, it is anticipated that the nursery industry will eventually be able to start producing resistant ash stock through appropriate propagation techniques. In addition, along with the rest of the UK, we will also seek to identify mature ash trees exhibiting resistance, for future use as seed sources.

7.4 In woodland areas natural regeneration will fill in gaps. Ash is not a particularly large component of our native upland woodlands (ASNWs). Ash does make up a larger proportion of secondary woodland, however. There are also a large number of plantations dominated by ash around the city, such as in the south east around the Mosborough townships, planted 15-40 years ago. Losing them entirely would be a significant blow, though some of the nuisance issues they have caused through poor siting and a lack of thinning could be addressed subsequently.

7.5 There is potential for trees to be grown by the general public, if we cannot meet demand through commercial nurseries. In effect this could be a nursery scattered across the city in back yards and gardens. There is currently a Lottery Heritage Fund bid in to help get projects like this off the ground. Registering our own woodlands as seed sources will mean we can grow trees of local provenance within the requirements of UK Woodland Assurance Standard. This is necessary for FSC (Forest Stewardship Council) certification.

7.6 There is unlikely to be enough public land to meet all of the demand for tree planting, so we will need to bring private organisations and landowners on board. We aim to do this through their involvement in a future Ash Dieback Resilience Forum covering the whole of Yorkshire, but we will also explore other avenues.

8. Delivery plan

8.1 Current resources

- Staff - There are currently 5 tree officer posts in the tree team, mainly covering health and safety tree inspections on all Council owned land apart from public

highways and some schools. There are also 2 Woodland Officer posts, managing the woodland estate, but not specifically tree risk assessment. In addition, several of the Ranger team have had training on the Professional Tree Inspection course, and all have had basic training in common tree issues. ADB surveys will need to be carried out as well as more frequent inspections of high risk ADB sites, which will take time away from regular work.

- Budget - There is an annual tree work budget of around £160,000. This is likely to be eaten up fairly rapidly as ADB spreads across the city. At the moment, overspend of this budget can be offset, within limits, by income from the Woodland budget, but this will not cover the projected cost of ADB
- External advisors – we worked closely with both the Tree Council and Sheffield University to organise last year's ADB conference and we will continue to do so. We will meet with them again at some point to work out our next steps towards setting up a Local Resilience Forum. The Covid-19 pandemic has delayed matters considerably and tied up resources that we would otherwise need for the plans to proceed.

8.2 Extra resources required

- Extra personnel may be needed to carry out all the inspections required and to keep up with regular inspections
- More funding will be needed to deal with the felling of trees on council-owned land
- More admin support, other personnel and funding may be required by Building Control and Highways Enforcement to investigate, enforce or even pay for the removal of affected ash on private land.
- More admin support, other personnel and funding may also be required by Planning (Urban and Environmental Design) to deal with private ash trees which are subject to TPOs or are in conservation areas
- A large number of trees will be required to replace the lost treescape. If the nursery trade and charitable organisations cannot provide these we will need to find other means, such as creating areas of natural regeneration, reseeding areas with the help of volunteers/Friends groups or asking volunteers to grow stock.

8.3 Local resilience forum

- To be Yorkshire-wide, with devolved local groups feeding into it. Local authorities (LAs) can meet with their own stakeholders more regularly, then meet with the Yorkshire group perhaps twice a year. LA involvement is based on the Greater Yorkshire Tree Officers Group (GYTOG).
- It is intended to include all groups potentially affected by ADB across the public and private estate. It aims to establish a coherent approach to dealing with the disease and to send out a consistent message. Ultimately the aim is that it should be independent of LA control and be a resource for information and publicity. A larger body such as this should also be able to lobby for extra funding from national bodies.

8.4 Communication

- Discussions have been held with SCC's media department to work out a publicity strategy. The plan is to get the message out to the public when the leaves have fully

emerged and the effects of the disease are easier to spot i.e. by mid to late May. The current Covid -19 pandemic has obviously shifted the focus of the department, so it is unclear when and if this publicity push can be made.

- SCC will set out clearly to the public:

a) The nature of the disease and the steps that SCC are taking to deal with council-owned trees
b) Private landowners' duty of care to deal with potentially dangerous trees that they own
c) Best practice for removal of affected trees, in particular the unpredictable dangers involved and the importance of employing fully-qualified and knowledgeable contractors
d) Guidance on planning requirements for trees either with TPOs or in conservation areas
e) Essential contacts for trees within the various ownerships.

- As part of the publicity campaign, we intend to showcase in the press a large-scale felling event in a badly affected location, most likely along the Porter Valley, on the route of the Sheffield Round Walk, where many large mature trees are in severe decline and at the stage where felling is necessary. Covid 19 has unfortunately tied up many of the resources required for this, so this is still aspirational.
- We will filter information not only through SCC's publicity but also via various council-associated groups such as Friends groups and STAG (Sheffield Tree Action Group), who we have involved at an early stage of the resilience forum planning. We will also look to involve volunteers in the recovery stage and potentially in ADB surveys.

9. Priority actions, estimated costs and lead delivery partners

Section 1: Policy, Strategy and Communication
Section 2: Operational Considerations
Section 3: Risks and Issues
Section 4: Training
Section 5: Regulation

Section 1: Policy, strategy and communication

No.	Topic	Key people/bodies affected	Actions	Priority	Cost Low <£10K Medium £10K -£100K High >£100K	Suggested lead
1	Action plan delivery	SCC, ash tree owners, general public, contractors	Establish a steering group to coordinate and promote this action plan and to monitor it, revising the plan as necessary.	High	Low	SCC & Local Resilience Forum (LRF)
2	Local Resilience Forum	Local authorities (LAs) in Yorks area	Establish a Local Resilience Forum to cover the wider Yorkshire area, for the sharing of resources and knowledge and a louder voice; establish smaller local forums in LAs to deal with action on the ground and feed into the larger body. Logistics of meeting during Coronavirus pandemic to be worked out.	High	Low	SCC Other LAs NGOs (National Trust, Wildlife Trusts, etc.) Contractors
3	Communication	All sectors, including plan delivery bodies, general public , farmers and other land managers, garden centres, agricultural	Develop and deliver a communications plan, to promote engagement by those bodies asked to help lead delivery of this plan, and to provide information and guidance to farmers, foresters, woodland owners, other landowners and managers, tree professionals (especially those not in professional associations), SCC staff, schools/colleges, Friends groups and other volunteers, the general public and the media. This plan must also link into other relevant local and national initiatives	High	Development – Low Delivery – Medium?	SCC media department & LRF

		suppliers, etc.				
3a		T&W/Media team	Produce ash dieback FAQs and publish on the SCC website.	Med	Low	T&W
3b		SCC	Inform and prepare SCC departments which may be affected by ADB for potential impact and extra resources required: e.g. Planning & Development, Building Control, Environmental Health, Trading Standards	High	Low	T&W
4	Works protocol	T&W, Amey	Carry out an audit of the relevant highways and other policies and processes that may need to be reviewed in light of ash dieback e.g. process for reporting tree issues, road closures policy, etc. This needs to be aligned with the BAU risk based approach being implemented by Highways	Med	Low	T&W, Amey
5	Strategic planning	Policy makers and shapers	Revise and update strategic plans.	Med	Low	LAs, National Park Authorities & AONBs Natural England
6			Outline potential costs to budget holders, based on national and international ADB statistics, SCC surveys and iTree data. Revise and update likely costs, and press for increased funding if necessary, as the situation develops. Highlight the indirect costs required in officer time across the council, as well as the direct costs of felling and replacing trees.	High	Low	SCC, LRF

Section 2: Operational considerations

No.	Topic	Key people/bodies affected	Actions	Priority	Cost Low <£10K Medium £10K -£100K High >£100K	Suggested lead
1a	ADB surveys	T&W, volunteers	Produce ash dieback survey plan and forms: outline methodology, frequency of inspections and criteria for	High	Low	SCC & Local Resilience

			action; produce list of priority sites. Include consideration of various surveying methods including on foot, drive-by, drone (potentially funded by university); consider also methods that could be used by volunteers. Repeat sample surveys of sites each year.			Forum (LRF)
1b			Prioritise work based on pattern of spread: S & SW of the city likely to need more work this year			
2	Local Resilience Forum	Local authorities (LAs) in Yorks area	Establish a Local Resilience Forum to cover the wider Yorkshire area, for the sharing of resources and knowledge and a louder voice; establish smaller local forums in LAs to deal with action on the ground and feed into the larger body. Logistics of meeting during Coronavirus pandemic to be worked out.	High	Low	SCC Other LAs NGOs (National Trust, Wildlife Trusts, etc.) Contractors
3	Point of action	SCC	Determine point at which action should be taken on a tree, combining standard risk matrix approach with current knowledge of ADB; set out protocols for contractors to avoid unnecessary risk. Draw up triage form, based on Devon County Council's (DCC), to help identify priority work and work protocols. Act earlier rather than later – contractors and MEWPs are likely to be in high demand and won't necessarily be available at short notice once large numbers of trees begin to decline.	High	Low	SCC, contractors, private landowners
4	Contractors	SCC, Contractors, Public	Hold regular meetings with contractors to exchange knowledge and further refine plans.	Med	Low	T&W

Section 3: Risks and Issues

No.	Topic	Key people/bodies affected	Actions	Priority	Cost Low <£10K Medium £10K -£100K High >£100K	Suggested lead
1	Health and safety risk to life, services and transport networks caused by diseased trees failing or shedding branches	SCC, landowners and managers, including private and arms-length owners (e.g. schools)	Prioritise high target sites. Lower priority sites with lots of ash may need access restricting. SCC to provide advice on how to manage the disease, including regulatory requirements. Provide guidance for Building Control and Highways Enforcement to use when dealing with dangerous ash. Communicate with landowners/farmers through bodies such as the National Farmers' Union.	High	Low	T&W, Media team
2	Risk of unqualified contractors working on trees	Contractors, public	Publicise the dangers of working on affected trees; warn public against rogue or unqualified contractors; alert Trading Standards to reports of rogue tree contractors linked to ash dieback.	Med	Low	T&W, Media team
3a	Planning	Planning dept, public	There may be a large increase in planning applications for removing ash; guidelines on felling for safety will not change, but account should be taken of the difficulties of felling where access is difficult and targets unavoidable: in these cases, felling earlier rather than later should be allowed.	Med	Med – potentially more resources required	Planning, T&W
3b			Some may take advantage of the situation to fell healthy trees: again, guidelines will not change, and each case should be judged on its merits by a qualified inspector	Low	Low	
4	Highway trees	Amey, SCC	Given the Highway trees issue in Sheffield, great care must be taken to explain the situation to the public and to emphasise that Amey and SCC are working together to protect public safety; protest groups will be informed and kept up to date with tree felling, but tree managers must be	Med	Low	Amey, SCC, STAG

			allowed to make their own health & safety decisions based on their experience and knowledge: affected trees can become unpredictably unsafe very quickly.			
5	Biodiversity impact	SCC, public, wildlife trusts, private landowners	Leave standing deadwood where possible; leave dead trees standing where possible; allow natural regeneration so potentially resistant trees can emerge	Med	Low	SCC
6	Landscape impact	SCC, public, wildlife trusts, private landowners, schools, businesses, farmers	Formulate tree planting/replacement scheme: in house via the Community Forestry team; in partnership with the Northern Forest and other partners; working with volunteers to grow trees using seed from SCC woodland (where registered with the Forestry Commission); consider reopening nursery sites to grow trees.	Med	Med - External funding required	SCC

Section 4: Training

No.	Topic	Key people/bodies affected	Actions	Priority	Cost Low <£10K Medium £10K -£100K High >£100K	Suggested lead
1	Survey training	T&W, SCC staff, volunteers	Investigate training requirements & produce a plan for SCC ground staff, so they can report any affected ash to T&W – similar to previous training plan: can also be used to train any volunteers	Low	Low	T&W
2	Work training	T&W, contractors	Contractors experienced in felling affected ash should be used to train other contractors and SCC staff in methodology and what to look out for. LRF or smaller LA-based forum could be used to share this knowledge.			

Section 5: Regulation

No.	Topic	Key people/bodies affected	Actions	Priority	Cost Low <£10K Medium £10K -£100K High >£100K	Suggested lead
1	Large-scale felling on private land	Farmers, woodland managers, other private landowners	Provide guidance on the need for Felling Licences if taking down large numbers of trees	Low	Low	SCC, Forestry Commission
2	Wildlife legislation	All tree managers and professionals	Ensure tree professionals are aware of the protection afforded to bats and of necessary procedures. Issue licences rapidly where appropriate.			SCC, contractors
3	Planning regulations	Home owners	Ensure adequate staffing for TPO, Conservation Area, etc, consultations and notices			SCC

Appendix A – Tree Risk Management Framework

Appendix 1: Hazard Rating System – partial or whole tree failure

Probability of failure	**Examples of defects (use as guide only as probability of failure depends on multiple factors including species, size, age, exposure and defect development stage)**	**Score**
Imminent	Partial failures, uprooting, moving fractures, unimpeded hanging branches	8
Probable	Significant decay fungi in advanced state, recent major root severance, advanced included unions	3
Potential	Dieback in crown, decline in root system, deadwood, initial stages of included bark, end weighted limbs	2
Unlikely	Tree with no significant defects	1
Target value	**Examples of levels of use**	**Score**
Very High	Constant use, standing traffic or arterial road, well used playgrounds, cafe seating areas (Visitor rating 1: 36/hour)	5
High	Main roads, less used playgrounds, benches, bus stops, busy footpaths (Visitor rating 2: 10-36 persons per hour)	4
Medium	Occasional traffic - secondary/residential roads, moderate use footpaths. (Visitor rating 3: 24-240 persons per day)	3
Low	Low use areas with infrequent visitors. (Visitor rating 4: 1 - 24 persons per day)	2
Very Low	Hardly ever used (Visitor rating 5: 1-7 persons per week)	1
Size of defect	**Examples of potential harm/damage**	**Score**
>500mm	Serious injuries/fatalities; major structural damage; vehicles destroyed	4
100 – 500mm	Injury; significant vehicle/property damage	3
25-100mm	Minor injury (abrasions); Minor damage	2
< 25mm	Little or no damage or injury	1

Hazard Calculation: Probability of failure **X** Target **X** Size of defect **=** Rating

Rating	Recommended Action
72+	Immediate – carry out remedial work as soon as practicable – inform contractor within 2 hours
48-71	Urgent - remedial work within 2 weeks of inspection date. Necessary consultation carried out (planning, highways, councillors etc notified)
24-47	Moderate - Work completed within 14 weeks of inspection date
8-23	Low priority - Works of low priority that may be considered if budgets allow

Appendix B – Visual guide to symptoms in large trees