N|T|S|G

NATIONAL TREE SAFETY GROUP

SUMMARY

Common sense risk management of trees

A summarised version of guidance on trees and public safety in the UK for owners, managers and advisers

This publication is also available on our website at: www.ntsgroup.org.uk

First published by the Forestry Commission on behalf of the National Tree Safety Group in 2011. This second edition was jointly published by Forest Research and the Arboricultural Association in 2024 on behalf of the National Tree Safety Group.

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Common sense risk management of trees

A summarised version of guidance on trees and public safety in the UK for owners, managers and advisers

The National Tree Safety Group (NTSG) is a broad partnership of organisations that have come together to develop nationally recognised guidance on tree-safety management that is proportionate to the actual risk from trees. NTSG membership is open to all interested stakeholder organisations and groups. The NTSG can be contacted at www.ntsgroup.org.uk

Second edition

2024

www.NTSG.org.uk

NTSG

Contents

1. Introduction

This is the summary of the second edition of the National Tree Safety Group (NTSG) guidance publication Common sense risk management of trees (referred to throughout as 'the full guidance publication'). It is intended for anyone responsible for trees, including duty holders, who may be landowners of estates or smallholdings, householders, as well as those who manage, advise and work on trees.

This summary does not contain references, notes, detailed discussion, contacts or acknowledgements. If required, please refer to the full guidance publication for these and for more detailed information on the context and rationale of the guidance given below. The full guidance publication also contains a series of indicative example scenarios, demonstrating how the NTSG's guidance may be applied for a range of different duty holders with varying sizes of land holding and occupancy. These include:

1. **Householder**
2. **Business – restricted or limited public access**
3. **Business – open to the public**
4. **Local authority – district or borough council**
5. **Local authority – county council**
6. **Local authority – city council**
7. **Large private estate with public access**
8. **Large open space open to the general public**
9. **Small site with mature trees growing next to the railway**

The full guidance publication is freely available to download from the NTSG website at ntsgroup.org.uk, or is available to purchase as a hard copy from www.trees.org.uk/Book-Shop

The guidance

This revised summary guidance document provides advice that is succinct, comprehensive and practical in its application. The broad spectrum of member organisations of the NTSG is reflected in the scope of the advice within the document, which includes trees growing in forests and estates in remote areas, land that has occasional public access, land and individual properties where there is frequent public access and land adjacent to roads.

The NTSG believes that one fundamental concept should underlie the management of risks from trees: the evaluation of what is reasonable should be based upon a balance between benefit and risk; this evaluation can only be undertaken in a local context, because trees provide many different types of benefit and risk in a range of different circumstances.

The guidance is based on a set of five key principles established by the NTSG for considering and managing tree safety in the public interest:

1. **Trees provide a wide variety of benefits to society.**
2. **Trees are living organisms and they naturally lose branches or fall.**
3. **The overall risk to public safety is extremely low.**
4. **Tree owners have a legal duty of care.**
5. **Tree owners should take a balanced and proportionate approach to tree risk management.**

Managing the risk from trees is the responsibility of the owners and managers of the land upon which they grow.

An overview of tree risk management

Trees form part of the overall landscape and their presence has many different benefits depending on how the land is used. Not all trees are managed and, even for those that are, such management forms a component of the overall management of land. Human safety is one part of that management. Risk management consists of the co-ordinated activities involved in understanding, directing and controlling risk, and, with regard to trees, is best undertaken by understanding their function, qualities and value to people in the context within which they grow. The requirement under health and safety legislation is to have a suitable and sufficient risk assessment, and to apply measures that are reasonable and practicable. Put simply, risk is the likelihood of harm arising from a particular hazard (see ‘Hazards’, page 9). The process of risk assessment includes identifying, analysing and evaluating risk. This guidance shows an integrated approach to that process within the wider context of land ownership and management.

2. The benefits of trees

Trees and woodlands provide an enormous range of social, economic and environmental benefits across the broad spectrum of urban and rural landscapes in the UK. Plans to sustain and maximise these benefits to enable us to tackle the climate emergency and biodiversity loss we are facing are outlined in the UK Government's 25 Year Environment Plan and in the forest and tree strategies of England, Scotland, Wales and Northern Ireland.

Apart from marketable timber and timber products, the value of the benefits provided by trees generally has not been readily quantifiable in monetary terms. More than a decade ago, the UK's first National Ecosystem Assessment (UKNEA) made the case for properly valuing the social and economic benefits of a healthy natural environment while continuing to recognise nature's intrinsic value. Such values can be expressed in terms of 'natural capital' and 'ecosystem services', the links between nature and public well-being.

The UKNEA concluded that while the natural world, its biodiversity and its ecosystems are critically important to our well-being and economic prosperity, these are consistently undervalued in conventional economic analyses and decision-making. Almost a decade later, the permanent removal of tree cover seldom takes account of the negative impacts on public health and well-being and our natural environment remains fragmented and fragile.

Trees are ‘keystone’ species in many ecosystems: their ability to provide multiple and sustained benefits, securing economic wealth, biodiversity, soil protection, water quality, health and well-being for human populations, while mitigating the effects of climate change, is second to none. They demand the protection afforded by considered and evidence-based responses to the risks they may pose, as detailed in this guidance.

3. Understanding the risks from trees

The overall risk to human safety is extremely low

Research by the Centre for Decision Analysis and Risk Management (DARM) commissioned by the NTSG has addressed the risk to people from trees. It demonstrates that the overall risk to the public from falling trees has been extremely low. The most recent data show that the level of risk of an individual being killed by a falling tree (or part of a tree) in any given year, during the period of 1997 to 2022, was one in 15 million per year.

So far as non-fatal injuries in the UK are concerned, the number of accident and emergency (A&E) cases attributable to being struck by trees (about 55 a year) is exceedingly small compared with the approximately 2.9 million leisure-related A&E cases per year. Footballs (262 000), children's swings (10 900) and even wheelie bins (2200) are involved in many more incidents. The overall low level of tree-related risk is probably attributable, at least in part, to the inspection, care and management by owners, duty holders and advisors across the UK over decades.

The DARM research also showed that there is limited societal concern about risks of this type (although there may be adverse publicity in the immediate aftermath of an individual incident). The analysis indicated that adjustments to the current overall management regime would be unlikely to reduce the risk to health and safety in any significant way.

Real risks and public concerns

Trees grow in many different situations, and within areas of widely varying levels of public access or other human activity. Where it is appropriate to manage trees, this management should seek to enhance their significance (in terms of value, access and other benefits) and all the other ecosystem services, biodiversity and social benefits they provide, and to reduce the undesirable impacts they may have (such as damage to property and risk to human safety). Considerable concern and uncertainty about managing trees for safety has arisen from time to time, largely stimulated by occasional court cases and responses to rare incidents where a falling tree or branch has killed or injured a person. To sensibly address such concerns, it is important to take account of information about the 'real' risk involved and the reasons for the public concern.

Hazards

Very simply, a hazard is something that can cause harm, and here the hazard is a tree (or one of its parts). Risk is characterised by reference to potential events and consequences, or a combination of the two. It is often expressed as a combination of an event's consequences and the likelihood of it occurring. In this case, a potential consequence is death or serious injury. Levels of risk are judged against a baseline, which is usually the current overall maintenance or control regime for that hazard (the tree). When assessing a tree, owners and managers need to judge whether the management measures they adopt will fulfil society's reasonable expectations. 'Reasonableness' is a key legal concept when considering the risks of trees to the public and duty holders' obligations. Deciding what is reasonable can be undertaken only with regard to the trees' place within the wider management context and how that context influences decisions locally. The Health and Safety

Executive (HSE) has identified that an individual risk of death of one in 1 million per year, for both workers and the public, corresponds to a very low level of risk. It points out that this level of risk is extremely small when compared with the general background level of risk that people face and engage with voluntarily.

Significance of the identified risks

The individual risk of death attributable to trees is 10–15 times less than the threshold of one death in 1 million per year, which, according to the HSE, people regard as insignificant or trivial in their daily lives. Because trees present a very low overall risk to people, duty holders, who include owners and managers, should be able to make planning and management decisions by considering how trees fit into a particular local context and thereby avoid unnecessary intervention, survey and cost.

However, it should be noted that, while the overall risk of being struck and killed by a falling tree is extremely low, there are individual trees that may present a high risk of harm in high occupancy areas. In a tree risk context, a person or property that could foreseeably be harmed by a falling tree is conventionally termed a ‘target’. The level of their occupancy is therefore an important factor in risk assessment and control. Zoning according to occupancy helps to inform the method for checking and inspecting trees. This approach helps the duty holder to ensure that any management is proportionate, and to strike an appropriate balance between the real risks and benefits.

Managing the risk from trees

Tree management covers all the diverse activities involved in the care and maintenance of trees according to many different objectives. With regard to risk, management (or the lack of it) should not expose people to significant likelihood of death, permanent disability or life-threatening injuries, although accidents are, on occasions, unavoidable. Such risk is acceptable only in the following conditions:

- the likelihood is extremely low
- the hazards are clear to users
- there are obvious benefits
- further reducing the risks would remove the benefits
- there are no reasonably practicable ways to manage the risks

In its position statement, the NTSG argues that it is reasonable for large organisations that own or manage trees to develop a management strategy (in line with practice in other sectors). This strategy may strike a balance between the risks present and the benefits accrued.
An organisation that publishes and maintains a tree and woodland strategy or management plan, part of which includes information on their risk management plan for the trees they own, is much better placed to demonstrate they have fulfilled their duty of care.

4. What the law says

The role of this guidance within the legal framework

In the context of litigation, the full NTSG guidance may be presented to a court for consideration as supporting documentation in any case involving death or personal injury caused by a falling tree or branch. Reported judgments already demonstrate that courts will consider publications of this nature when addressing the duty of care. It must, however, be appreciated that the guidance will not in itself determine a court's judgment in an individual case. First, all cases are sensitive to their own facts. Second, in civil cases, a court will always reserve to itself the decision as to whether a tree owner has acted as 'a reasonable and prudent landowner'. This guidance can, however, inform the court in the making of that decision.

The legal framework

Under both criminal and civil law, a duty holder, including owners of land upon which a tree stands, has responsibilities for the health and safety of those on or near the land and has potential liabilities arising from the falling of a tree or branch. The criminal law gives rise to the risk of prosecution in the event of an infringement under the Health and Safety at Work Act 1974 (HSWA). The civil law gives rise to duties under the Occupier's Liability Acts (OLA) (1957 and 1984) with potential liabilities in the event of a breach of those duties.

Tree risk management and criminal law

Under criminal law, the HSWA sets out legal responsibilities for duty holders (i.e. employers and the self-employed), for the safety of employees and members of the public who may be affected by what they do. The HSWA (Section 3(1)) states that 'It shall be the duty of every employer to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not exposed to risks to their health and safety'. This places a duty to protect people other than those at work from risks to their health and safety arising out of or in connection with the activities of people at work.

The Management of Health and Safety at Work Regulations 1999 (MHSWR) specifies that 'every employer shall make a suitable and sufficient assessment of the risks to the health and safety of his employees to which they are exposed whilst they are at work; and the risks to the health and safety of persons not in his employment arising out of or in connection with the conduct by him of his undertaking'.

The HSE approach focuses on the sensible and proportionate control of real risks. The courts have made it clear that: 'when the legislation refers to risks, it is not contemplating risks that are trivial or fanciful…' but rather 'material risk to health and safety, which any reasonable person would appreciate and take steps to guard against'.* Where the NTSG guidance refers to risk it is intended in the above sense of 'material risk'.

Forestry, woodland management and arboricultural tree work are clearly hazardous occupations where risks to employees and the public require an appropriate level of risk assessment and control. Outside the context of those who are directly employed to work on trees, the risk to human safety comes from trees or branches falling on members of the public due, for example, to diseased trees, storm damage or other causes.

*R v Chargot (2009) 2 All ER 660 [27].

This represents a significantly lower level of risk than tree-related occupational risk. However, HSWA Section 3(1) includes both public duty holders, responsible for the management of trees along highways or within rural or urban open spaces, as well as other employers, including corporate and private enterprises, with incidental ownership and control of trees (e.g. trees on agricultural land, surrounding hotels or other commercial properties).

This guidance sets out to consider what it is reasonable to do to manage these circumstances. It is important to emphasise that the Act does not require that risk must be completely eliminated, but rather that duty holders manage risks as low as reasonably practicable (ALARP), which means that 'an employer does not have to take measures to avoid or reduce the risk if they are technically impossible or if the time, trouble or cost of the measures would be grossly disproportionate to the risk'. The law requires what good management and common sense would lead employers to do anyway: that is, to look at what the risks are and take sensible measures to tackle them. In addition, a balanced and reasonable approach will avoid excessive interventions that result in the removal or reduction of trees, which in turn introduce the inherent risks to operators who carry out tree felling or pruning.

Those who control tree management require a clear appreciation of their legal duties. However, a tree and woodland management strategy needs to consider both the reasonable control of risks from tree failure along with other factors. Other broader concerns, such as climate change and flood mitigation, public health and well-being, along with consideration of tree pests and diseases, ecology, landscape and aesthetic value, may also be taken into account. The decision-making objective is to adequately protect individuals from harm while avoiding unnecessary loss of benefits.

In some cases, risk management strategies can have multiple and complex considerations, such as where nationally important trees with high habitat value for protected species are present in high visitor settings.

The ultimate decision in such circumstances needs to be based upon a coherent and transparent method that is accountable and reasonable.

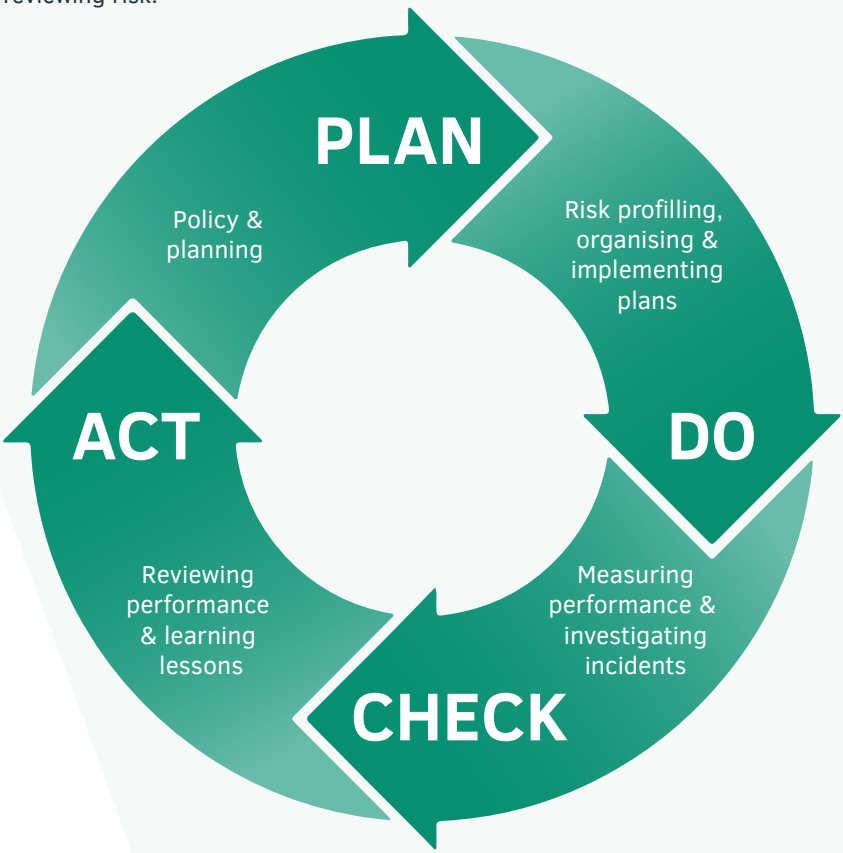
The management of risk, when properly organised, enables a duty holder, among other things, to:

- increase the likelihood of achieving stated objectives;
- make the most of available resources;
- identify and control the risk;
- comply with relevant legal requirements;
- improve public confidence and trust.

The International Organisation for Standardisation's document ISO 31000 provides guidance on risk management principles and states that effective risk management needs to be capable of a proactive response to changing circumstances; this, in turn, is underpinned by transparency and stakeholder participation. In the UK, the Health and Safety Executive's *Managing for health and safety* (HSE 2005, updated 2013 ('HSG65')) also presents risk management as an inclusive process that is integral to strategic organisational aims. It states that risk management should achieve a balance between systems and a culture of organisational and personal awareness of health and safety issues that includes obligations, practical understanding of risk and the pitfalls of complacency and other obstacles to improvement practices. While a formal management system or framework can help manage health and safety, it is for the duty holder to decide whether to use one or not. In either case HSG65 advocates a common sense and practical approach, 'Plan-Do-Check-Act', that contributes to effective risk management.

Plan-Do-Check-Act is a four-step guide to managing risk in a changing environment.

Figure 4.1 A model of the HSG65 framework for setting, managing and reviewing risk.



Tree risk management and civil law

Risk management under civil law, in non-work–related settings, involves an approach that reasonably weighs the benefits of an activity against the risks it poses. This approach recognises the inherent balancing of considerations in risk decisions and is termed compensatory decision-making. This is in contrast to non-compensatory decision-making, which focuses on a single objective.

Notwithstanding a legal duty to ensure the reasonable safety of the public, safety is one of many management considerations. When it comes to tree management, sensible, appropriate decision-making relies on and involves an appreciation of other wider management objectives, such as safeguarding environmental benefits (a process for making such decisions is outlined in Figure 4.2).

In the context of tree-related benefits, this entails accounting for the value of a specific tree or a given set of trees through their contribution to their owners' environment, their surroundings and, more broadly, to society and the ecosystem. Looked at in this way, trees are both a 'benefit generator' and also a 'risk generator'. Assessing and balancing the benefit with the risk requires understanding the values and outcomes that are desired in the local circumstances. At some level, this process depends on identifying priorities and making assessments in light of personal knowledge and experience. As trees age and grow, the benefits they contribute increase. But also, in later life, the same qualities tend to contribute to an increased likelihood of structural failure. Managing such trees to safeguard the benefits accrued over time, while reasonably managing the safety risk, calls for a strategy that involves compensatory decisions for the duty holder at various times throughout the lives of their trees.

The diagram (Figure 4.2) aims to illustrate a compensatory approach to tree risk management for the duty holder under civil law. The diagram is set out as a cyclical series of actions, with considerations applicable to each. Throughout the process, consultation and review are essential components. Accompanying explanatory information can be found in the full guidance publication.

Figure 4.2 Duty holder responsibilities under civil law: the tree risk management process.

The concept of balancing the benefits of some object (e.g. a tree) or activity (e.g. fell walking) with its associated risks has emerged over recent years in a number of areas of public life. Many of these benefits are intangible and are shared across a relatively large number of people, and they are sometimes lost in the name of reducing risks. This relates in similar ways to the benefits and the value of play, sport and access to natural places.

This balancing approach contrasts with the traditional approach to health and safety in criminal law, where the trade-off is often interpreted as being solely between the benefits of risk reduction that a safety intervention provides and the cost of the measure and difficulty of its implementation.

Under civil law, while one of the duty holder's goals is for the reasonable safety of people and property, this does not require the elimination of all risks, but rather to adopt a management strategy that reasonably weighs up and balances the risks and benefits. For example, where people choose to visit sites where there are trees, they do so to enjoy the benefits and accept a level of risk.

In this way objectives may broaden to incorporate management for amenity, conservation and environmental value. The Visitor Safety in the Countryside Group describe this benefit-risk assessment process in their guidance:

'When measures to reduce the risk of personal injury are also likely to significantly reduce the benefits, we must ensure that they are sensible, proportionate and appropriate. As well as taking into account the likelihood that someone may be injured and the seriousness of the injury which may occur, we should also consider the benefits to the individual and society from the activity which gives rise to the risk.'

This is further supported by the recently published international standard, BS ISO 4980:2023, *Benefit-risk assessment for sports and recreational facilities, activities and equipment*, which, outside of occupational health and safety, advocates taking account of activities for the public good through balancing the benefits with the risk in order to achieve risk acceptability.

The compensatory approach has been developed to prevent unintended adverse consequences while balancing benefit and risk, so that no single factor unreasonably dominates risk management decision-making. This helps to counteract societal bias, where fear of accidental harm may lead to a risk-averse approach, which in turn relegates benefits to unreasonably low levels of importance when considering management options.

Practical experience and knowledge, applied to real circumstances, are crucial to balancing risk and benefit. When the process is abstracted from real circumstances the judgement may be influenced by trivial risks and an over-reliance on formulaic approaches and organisational complacency. Quantitative approaches may well contribute to sensible risk assessment, but sensible judgements to balance benefits and risks will inevitably rely on a measure of qualitative and descriptive processes and subjective judgement. Tree owners and duty holders are responsible for their trees, and management strategies need to be specific to each location. In satisfying that obligation they may obtain specialist advice as to inspection and maintenance of their trees. Figures 6.1 and 6.2 (see pages 29 and 31) describe the duty holder decision-making process under criminal law and civil law, respectively.

Negligence

The duty holder

This is the person who has control of the tree's management, whether as owner, lessee, licensee or occupier of the land upon which the tree stands; for example, the relevant highway authority is responsible for trees on land forming part of the highway.

The person to whom the duty is owed

This is any person who can be reasonably foreseen as coming within the tree's vicinity and being injured by a fall of the tree or a branch from the tree. Those using highways, footways, public footpaths, bridleways, railways and canals are likely to come within striking distance of trees on adjacent land. In public spaces, and semi-public spaces such as churchyards and school grounds, those working in or visiting them can be expected to come within the vicinity of trees. On private land, visitors and employees can also be expected to come within the reach of trees. Trespassers may also, in certain circumstances, be expected to come within the vicinity of trees on private land.

The duty owed

This can be stated in general terms as being a duty to take reasonable care for the safety of those who may come within the vicinity of a tree. The courts under civil law have endeavoured to provide a definition of what amounts to reasonable care in the context of tree safety, and have stated that the standard of care is that of 'the reasonable and prudent landowner'. Owners of trees are not, however, expected to guarantee that any tree is safe. They have only to take reasonable care such as could be expected of the reasonable and prudent landowner. Such a landowner

does not have to take all possible safety measures, only those measures that are reasonable. The duty owed under the tort of nuisance is owed by a tree owner to the occupier of neighbouring land. The duty, however, is no different to the general duty owed under the tort of negligence.

It is the duty holder's fundamental responsibility, in taking reasonable care as a reasonable and prudent landowner, to consider the risks posed by their trees. The level of knowledge and the standard of procedures that must be applied to the inspection of trees are of critical importance. It is at this point that the balance between the risk posed by trees in general terms, the amenity and other values of trees and the cost of different types of inspection and remedial measures, becomes relevant.

The standard of inspection

The courts have not defined the standard of inspection more precisely than the standard of 'the reasonable and prudent landowner'. In individual cases, the courts have sought to apply this general standard to the facts of each case. However, there is no clear and unambiguous indication from the courts in regard to the extent of the knowledge about trees a landowner is expected to bring to tree inspection in terms of type and regularity of inspection. Generally, the courts appear to indicate that the standard of inspection will be influenced by the size of the landholding and the resources available to the landowner. It is of note that the HSE states, in the HSE Sector Information Minute *Management of the risk from falling trees* (HSE SIM 2007, revised 2013), that: 'for trees in a frequently visited zone, a system for periodic, proactive checks is appropriate'.

5. Reasonable, balanced tree risk management

Legal requirements

The law requires only that people should take reasonable care to avoid acts or omissions that cause a reasonably foreseeable risk of injury to persons or property. The generally agreed standard to be achieved is that of a reasonable and prudent landowner.

Responsible management

Landowners who already sensibly manage their trees can be reasonably confident that there is no need for any radical change driven by a fear of the law, although they may find this guidance useful when reviewing management practice. No tree can be guaranteed to be safe. As long as we retain trees, we cannot achieve zero risk. A disproportionate response to the actual risks posed by trees leads to unnecessary intervention, particularly alongside roads and public places. Disproportionately responding to risk itself runs the risk of diminishing the landscape and depriving the whole community of the enjoyment of trees and their wider benefits.

Low risks and common sense

Generally speaking, the existing tree management regimes in the UK's towns, cities and countryside contribute to the acknowledged low risk of anyone being killed or injured by a fallen or falling tree or branch. The normal practices that have prevailed over the past decades have, in large measure, been reasonable and proportionate. These management regimes have worked in conjunction with people's common-sense approach to appraising risk from trees.

Defendable good practice

Defendable management is consistent with a duty of care based on reasonable care, reasonable likelihood and reasonable practicability. Landowners and managers who know how important their trees are tend to take an interest in them, including their setting and how people use their land and the benefits that trees bring. It is reasonable that decisions regarding tree safety are considered against a background of the generally low risk from falling trees. Being reasonable involves taking actions proportionate to the risk. Reasonable tree management has both reactive and proactive elements. While the owner or manager may need to react to events involving dangerous trees as they arise, it is also prudent to have forward-looking procedures to keep tree-related risks at an acceptable level. These procedures need not be complicated and may be incorporated into a tree and woodland strategy or management plan where applicable.

Defect and obvious defect

What is a defect?

The term ‘defect’ can be misleading, as the significance of structural deformities in trees (variations from a perceived norm) can be extremely variable. The NTSG’s definition of a defect is ‘A condition or feature that would predispose a tree, or part of a tree, to structural failure’.

What is an obvious defect?

The courts and specialist literature often apply the term ‘obvious’ when referring to tree defects of which a duty holder, owner or adviser should be aware. Obvious defects are likely to be so apparent that most people, whether specialist or not, would recognise them. While obvious defects may include external indications of potential structural failure, they take many forms, not all of which are significant hazards. Structural defects pose risks only where there is a likelihood of harm. Such an obvious risk might be a large tree that is clearly structurally compromised and/or actively failing over a well-used road. The person conducting a safety inspection is on the lookout for obvious defects posing a serious and present risk, particularly where the danger is immediate.

6. Framework for managing trees for public safety

The essentials

A reasonable and balanced approach forms the basis of a tree and woodland safety strategy for sensible tree safety management. By a 'strategy', the NTSG mean a plan that guides management decisions and practice, in a reasonable and cost-effective way, typically covering three essential aspects:

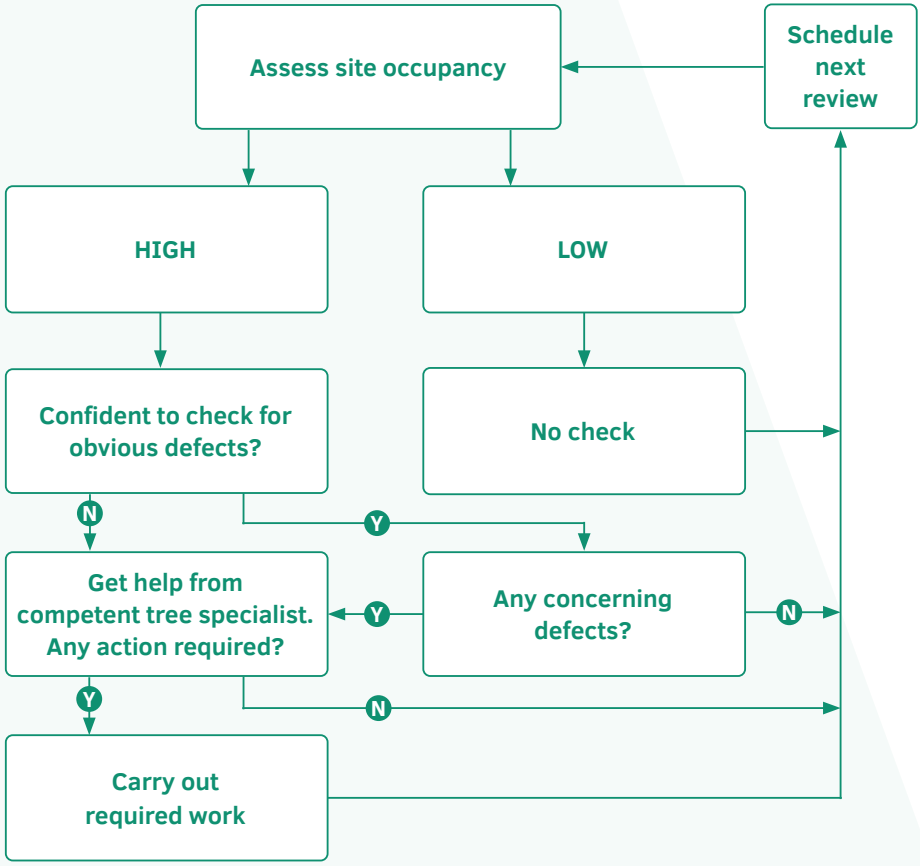
1. **Zoning:**
   Appreciating tree stock in relation to people or property.
2. **Tree checking/inspection:**
   Assessing obvious tree defects.
3. **Managing risk at an acceptable level:** Identifying, prioritising and undertaking safety work according to the level of risk.

A tree and woodland safety strategy may not necessarily be supported by extensive records. It may be self-evident through general prudent practice and behaviour. Alternatively, a strategy may be explicitly formulated and expressed through documents relating to management practice. If reasonably carried out, the strategy should meet the duty of care required by law, without the need for an overly bureaucratic approach or excessive paperwork. In the event of an accident, documents may provide supporting evidence that reasonable care has been taken.

Decision-making for duty holders without HSWA responsibilities

Figure 6.1 outlines a decision-making framework for managing tree risk. In practical terms, the homeowner/occupier needs to check for obvious structural features in trees that could cause harm, were they to fail.

Figure 6.1 Homeowner/occupier decision framework under civil law (after Barrell).

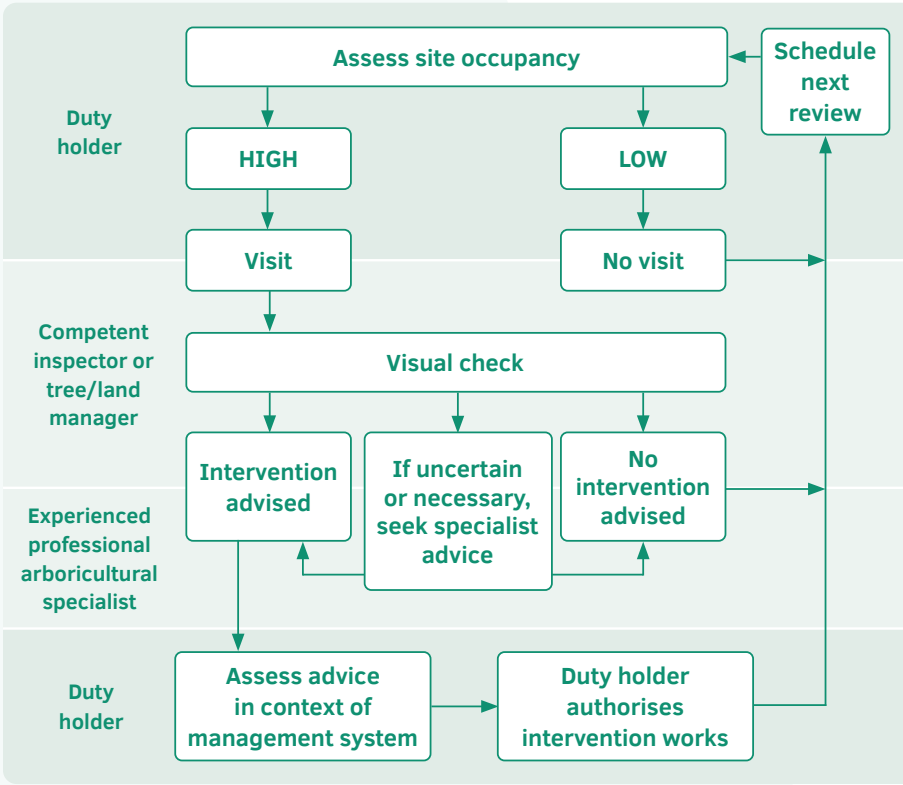


If confident in their ability to identify obvious defects, the homeowner/occupier may carry out the checks. If unsure and concerned, advice from a competent tree specialist should be sought. On the basis of the outcome of the tree assessment, the homeowner will need to make a reasonable and prudent judgement on how best to manage the trees, taking into consideration the level of their knowledge, the assessed risk and the value placed on the tree along with other constraints (see also Figure 4.2).

Decision-making for duty holders under criminal law (HSWA)

The duty holder is likely to have knowledge of the level of occupancy of the land, so there is no automatic requirement for a tree expert to assess whether it is necessary to check the trees. If the occupancy is so low that it is deemed unnecessary to assess the trees then all that is needed is for a future review to be scheduled. Where there is a higher level of occupancy and/or valuable property within the trees' potential impact range, then a formal process for checking should be in place. In practical terms, the process of assessing the risk and reacting to the findings can be shared between the duty holder and the tree inspector (Figure 6.2). However, it is necessary for the duty holder to ensure that the instructions given to the inspector are clear and sufficient to satisfy the duty holder's responsibility under the HSWA, and to take reasonable steps to check that such instructions are carried out. Once the inspector has fulfilled their role, it is up to the duty holder to decide if and how to implement the recommendations.

Figure 6.2 Duty holder decision-making framework under criminal law (Health and Safety at Work Act) (after Barrell).



7. Zoning

Zoning is a practice whereby landowners and managers define areas of land according to levels of use. This practice prioritises the most used areas, and by doing so contributes to a cost-effective approach to tree inspection, focusing resources where they are most needed. It contributes to sensible risk management and a defendable position in the event of an accident.

It may be a reasonable outcome of the zoning process to decide that no areas require inspection. Classifying levels of use in this way requires only a broad assessment of levels of use. Typically, two zones, high and low use, may be sufficient. High-use zones are areas used by many people every day, such as busy roads, railways and other well-used routes, car parks and children's playgrounds or where property may be affected. Low-use zones are used infrequently and may only require irregular inspection, if any. While owners and managers may deem it appropriate to use a more sophisticated approach, designating three or more zones, in the event of an accident whichever system is adopted may require justification according to the standard set.

Normally, the best person to carry out an initial zoning assessment is someone who is familiar with the land, how it is used and what trees are present. Typically, this could be the landowner, occupier or land manager. It does not require a tree specialist to zone a site.

Trees in frequently used areas, including roads and railways

Among the relatively few annual accidents from falling trees, the greatest risk to public safety has proven to be from trees within falling distance of where people move at speed in vehicles. However, even trees in well-used areas pose an overall level of risk to public safety that is extremely low. On average over the past two decades, four people a year have died from roadside trees falling onto vehicles or from collisions with fallen trees, mainly because the:

- risk of harm from falling trees is related to the force of impact;
- likelihood and extent of harm are influenced by the speed at which vehicles may impact;
- risks are higher when vehicles are travelling at speed in high winds.

It is both the high usage of roads and the speed at which people travel along them that makes this the most likely way in which people will be killed by trees.

Even in well-used areas, inspecting and recording each tree is not always necessary; for example, recently planted and other small trees, or large trees that are not within falling distance of targets, may be omitted from formal inspection. Trees in well-used natural woodland or woodland surrounding housing or a public park may only warrant an informal or non-onerous prioritised system of assessment to identify trees warranting closer inspection. Trees with structural faults, but valued for their habitat or amenity interests, that are retained in frequently used areas, may require specific assessment and management.

Trees in infrequently used areas

The risk of death or serious injury from trees in infrequently used areas is so low that it is reasonable that these should receive no formal inspection or visual check. However, duty holders may need to respond to any reports of problems, and a key method for assessing such risks is through visual checks (i.e. non-detailed, fairly rapid assessments of tree health and condition through visual observation), which may prompt further, closer inspection.

8. Tree inspection procedures

The three types of procedure are:

- **Informal procedures:** observations or checks (i.e. unscheduled visual assessments).
- **Formal procedures:** scheduled and recorded assessment.
- **Detailed inspections:** scheduled and recorded assessment.

Informal procedures

Informal observations contribute to wider tree management, including tree safety. They are essentially those incidental, day-to-day checks of trees made by owners and employees of a site who have good local knowledge of the trees and location and see them during the course of their daily lives and work. While not going out of their way to make an assessment of the condition of the tree, they are nonetheless aware of it and any changes that may occur over time. In some circumstances, informal checks may be considered reasonable and appropriate when owners and staff are able to assess the tree's health and any structural weaknesses that may pose an imminent threat to public safety.

May be undertaken by:

People with good local knowledge and familiarity with local trees who are not tree specialists, but rather those closely associated with a property, such as the owner, gardener, other employee or agent, who understands

the way the property is used (areas most and least frequented) and the extent of the risk posed, should a tree be found with obvious structural defects. Reports of problems by staff or members of the public are a fundamental part of informal observations and should be acted upon by following up with a formal procedure.

Frequency of inspection:

Informal observations contribute significantly to public safety, being important for deciding when action is needed and when a more formal assessment is appropriate. They are generally ongoing and undertaken as a given part of daily life on a site with trees and public access.

Formal procedures

Formal procedures are planned, specified and proactive activities that are related to tree safety inspection and assessment.

Formal checks and inspections

A formal inspection of a tree occurs when a specific visit to the tree is made with the sole purpose of performing an inspection that is not incidental to other activities. The spectrum of formal inspection ranges from survey work for tree inventories, to health and condition assessments. These may be carried out through drive-by and walk-over inspections or via ground-based visual checks. Walk-over assessments are a standard method for checking trees from accessible viewpoints to identify the need for further inspection or management, whereas drive-bys are carried out from a slow-moving vehicle to check trees alongside roads. Drive-bys and walk-over assessments are accepted types of reasonable risk assessment under certain circumstances. It should be noted that reliance on drive-by inspections is not appropriate in busy urban areas. However, initial

drive-by inspections can, when appropriate, assist in deciding where tree management, walk-over or detailed inspection might be necessary. Simple formal inspection, through ground-level visual checks during the course of walk-over surveys, involves non-detailed observation taking account of health and stability features and rapid changes in condition, noting variations from generally held acceptable norms, and may prompt further, closer inspection. This provides a useful, cost-effective means of identifying clear and present signs of obvious defects (such as uprooting or other serious structural failure). This is an important means of identifying when further action is needed, including immediately restricting public access, tree surgery or further detailed inspection.

May be undertaken by:

People who do not necessarily have specific tree-related qualifications, but who have received basic training in tree inspection and possess a general knowledge of trees. Their competence includes the ability to recognise normal and abnormal appearance and growth for the tree species and locality. This may include an ability to recognise visible signs of serious ill health or significant structural problems, such as substantial fractured branches or a rocking root plate, which, were they to cause tree failure, could result in serious harm. They also need the ability to assess approximate tree height and falling distance from the tree to the area of use, as well as when to request further specialist advice or detailed inspection.

Frequency of inspection:

There are no uniformly accepted frequency intervals that are considered appropriate to all situations. Formal inspections are normally undertaken as part of the implementation of a tree and woodland strategy or management plan for the site. Their frequency will be determined as a consequence of the zoning of the site, size, species and condition of the

trees, together with consideration of prioritisation of the risk and the resources available to manage that risk. The decision is a judgement for the owner, agent or adviser, applying sensible, reasonable behaviour in taking account of the site circumstances as a basis for good practice.

Detailed inspections

A detailed inspection involves close visual assessment conducted by a competent specialist initially from ground level, often instigated following concerns raised by an informal observation or formal inspection. Detailed inspections may involve further exploration of the tree above and below ground and can include the use of diagnostic equipment. A detailed inspection of a tree should be applied to individual, high-value trees that have raised concerns in well-used zones and/or those trees identified from informal or formal checks and inspections carried out by others. The detailed inspection is normally prioritised according to the level of safety concern. It entails an initial visual assessment from ground level by a competent tree specialist examining the exterior of the tree for signs of structural failure. In a few special cases, further detailed investigations may be required, involving one or more of the following: soil and root condition assessments; aerial inspections of upper trunk and crown; or other procedures to evaluate the nature of suspected decay and structural defects, including using specialist diagnostic tools. Detailed inspections are therefore unusual, and are typically reserved for trees valued for their heritage amenity or habitat and which potentially pose a high level of risk, as already identified through owner interest or a previous formal or informal assessment.

May be undertaken by:

An appropriately competent person experienced in the field of investigation that is to be carried out. Whoever is commissioning the detailed inspection should satisfy themselves as to the suitability of the inspector's

qualifications, experience and liability insurance. A specialist involved in conducting a detailed tree inspection should be able to demonstrate the reasonable basis for allocating risks according to priority and identify cost-effective ways of managing those tree-related risks. Access to competent professionals can be found in the full guidance publication – see the section on 'Contacts and useful sources of Information'.

Frequency of inspection:

A detailed inspection of a tree will normally be undertaken as a result of information obtained following an informal observation or checks and/or formal inspection of the tree. Alternatively, if the tree is a special tree, it may be placed on a regular inspection regime that is determined by its location and the risk it poses.

Special trees

Special trees are those of high value because of their heritage (natural, historical, cultural) and/or amenity importance, including ancient and veteran trees. Duty holders and landowners are responsible for their conservation and management. Informal observations, checking and formal inspections all have a reasonable likelihood of identifying trees posing a risk of serious harm in the near future. Important trees that owners want to retain (e.g. for heritage, habitat or visual amenity), but which may present a significant risk, are likely to require regular specialist detailed inspection to manage them without serious loss of the benefits they provide. As with formal inspections, the decision on the frequency of these inspections is a judgement for the owner and their advisers, based on the circumstances and applying sensible reasonable behaviour as a basis for good practice. Access to competent professionals can be found in the full guidance publication – see the section on 'Contacts and useful sources of Information'.

9. Reducing risks by managing access

For trees with recognised high value and identified defects, restricting access may be the best option. For sites where special events greatly increase the number of people in the area within falling distance, temporary exclusion can be effective. A large number of people on a site in very wet conditions can compact soil and harm tree roots. Although the effects of root damage can be slow to develop, they ultimately increase the risks of tree failure.

The ways in which to reduce risks by site management of well-used areas in special sites include:

- Deterring informal parking beneath trees; damage to roots may not be apparent for many years but increases the risk of failure.
- Relocating facilities such as play equipment, seats, picnic tables, barbecues, information boards, commemorative plaques, hides, fishing platforms, horse jumps and feeding centres.
- Rerouting paths and tracks.
- Redesigning mown paths in areas of long grass is a proven method of directing people away from high-risk zones.
- Placing structures and assembly points beyond the falling range of trees.

Effective ways of deterring access to an area include:

- Planting brambles and thorny shrubs.
- Using logs or piles of deadwood.
- Allowing grass to grow uncut beneath the tree's crown.
- Leaving brushwood around the tree.
- Erecting a warning sign, including temporary exclusion in adverse weather conditions.
- Changing the area's use (e.g. to hay meadow and for grazing).

Balancing risk with benefits

Outdoor activity increases in fine weather, with people remaining longer in certain areas. As mentioned above, in summer, one option to reduce the risk from falling branches is by the simple practice of not mowing under the trees' drip line. However, within the play sector there is a strong recognition that it is important for children to get 'back to nature', including interaction with trees. Therefore, decisions need to balance benefits with risks when considering segregating trees and people.

10. Keeping records

Records, including maps, provide the basis for safety management reviews and, in the extremely rare event of an accident, can be important proof of reasonable tree management. It is not necessary to record every tree inspected; however, records of trees presenting a serious risk and requiring treatment are useful, as is a record of how they have been treated.

When inspections are carried out, records can demonstrate that the owner or manager has met a key component of their duty of care. Other useful ways of demonstrating reasonable assessment and management of trees include recording recommendations for work and records of when tree work has been carried out.

Negative recording

Negative recording (also sometimes referred to as 'negative reporting') describes the inspection procedure for recording only those trees with hazards identified to be of safety concern, typically following walk-over and drive-by assessments. When considering tree safety, keeping records of every individual tree inspected within a tree population is seldom necessary and is generally not reasonably practicable, being disproportionate in terms of the effort involved compared with the reduction in risks this would provide. The negative recording procedure involves looking at the trees at an appropriate level of detail (given their size, general condition and location). If there are trees that have the potential to present significantly elevated risks, then a closer look is taken. Details of such trees would be recorded along

with inspection dates, the name of the inspector and the identity of those sections of the tree population under assessment, together with recommendations and priorities for remedial work, and those trees that warrant further investigation.

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