

Tree Safety Guidelines



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Introduction

In 2005, in the UK a boy was killed when a tree fell on him. In 2007, also in the UK, a boy was killed and two children were seriously injured when a branch fell on them. Such tragic events, although very rare, highlight the importance of tree safety management.

Scope

These guidelines are intended for persons responsible for Scout campsites or other Scouting premises where there are trees. The general principles apply where property can possibly be damaged by a falling tree or limb. The guidance does not apply to work on trees, e.g., pruning or felling by contractors or volunteer service teams or to the avoidance of tripping and slipping hazards caused by exposed roots.

Legal aspects

A person who is responsible for a tree has a duty of care to users of premises where the tree is situated, employees, and other persons, to take reasonable steps to safeguard them from dangers arising from the tree.

Tree safety management

A tree can fall down because its roots can no longer stabilise it against wind pressure. A limb of a tree can fall down after it has lost the necessary mechanical strength to support its weight or to resist wind pressure. If the roots of a tree are able to stabilise it, if its trunk does not

have enough mechanical strength, it may break-off and fall to the ground.

Tree safety management is based on risk assessment. A **hazard** is anything that could cause harm such as falling trees, falling branches, falling trunks. A **risk** is the chance - high or low - that someone will be harmed by a hazard.

Good practice requires inspection of trees at intervals according to the level of risk and timely preventative action when necessary.

The basic questions are:

- Does the tree show *warning signs* that it will fall down completely, or a branch will fall off, or that a trunk, or part of a trunk will fall off?
- If there are warning signs, is there a *risk of injury*?
- What *remedial action* is needed if there is a risk of injury?

Warning signs

These include:

- Top-heaviness, e.g., as indicated by excessive swaying in the wind.
- Lifting root plate, tearing out of roots, extensive root damage, or root loss.
- Large cracks in the ground around tree roots.
- Cracks or splits in trunk or large limb.
- Broken trunk or large limb.
- Hanging broken trunk or large limb.
- Large amount of decay in a trunk or large limb.
- Forks involving big limbs that show signs of weakness or possible failure at the centre of the fork, e.g., cracks, bark-to-bark contact, hollows that may be water-

filled and bulging growth. Fork failures, leading to shed branches, are more common in beech trees, certain types of willow, poplar, horse chestnut, and ash.

- Signs that the tree is in poor health, or may be dying, e.g., smaller than normal leaves, dead leaves in summer, dead limbs, much fungal growth.
- Cuts and other indications that the tree may have been damaged by machinery, vehicles or browsing animals.
- Frequent exposure to strong wind and signs that nearby trees have suffered wind damage, or have been blown over.

Young trees and saplings are unlikely to present a serious risk of injury if they fall on somebody but large trees, heavy sections of trunk or large branches are more likely present a risk of injury if they fall down.

Risk of injury - target zones

The area around a tree where it may fall down or shed a limb is usefully seen as a *target zone*. If there is nobody in the target zone there is no risk of injury when the tree falls down. The more people that are in the target zone the greater the risk of somebody being hit by a falling branch and the risk is made worse if people are asleep in a tent and are not alert to the danger or do not take avoiding action. Target zones around trees can be classified as follows:

- Low risk target zone – places that are seldom visited.
- Medium risk target zone – places that are visited from time to time.
- High risk target zone – places where people can be expected for most of the time or at some times, e.g., camping areas, assembly areas, footpaths, tracks, roads, car parks, work areas, activity areas and buildings in frequent use. Because the way that premises are used may change, the assignment of target zones should be kept under review and changes should be made if the risks change, e.g., a place that was once seldom visited becomes a designated camping area.

Safety inspection of trees

Inspections should be carried out by persons who are competent to spot the warning signs. Some may prefer to employ a specialist contractor to carry out inspections. Judgment is needed and the opinion of more than one experienced person may be beneficial in decision-making. Binoculars may be helpful during inspection of trees.

Location of individual trees

On sites where there are a large number of trees, a sketch map should be made which shows the location of individual trees or groups of trees, e.g., with reference to assigned orienteering co-ordinates. Ideally, each tree should be uniquely identified, e.g., have an identification tag on its trunk. This should not be a problem where there are few trees to be inspected. However, often it may be practicable only to identify uniquely those trees that are in the high risk zone or which are considered to be an increased risk, e.g. trees which are more likely to shed limbs, e.g., beech trees.

Type and frequency of inspection

The type of inspection should be in accordance with its target zone classification, roughly as follows:

- Informal – a quick scan during a “walk by” of a small group of trees to pick out a tree with obvious warning signs.
- Routine – spending more time on each tree to pick out obvious warning signs during a “walk by”
- Detailed – systematic and thorough visual examination of each tree taking into account whether or not warning signs exist.

A good time to carry out inspections is during clear weather at the beginning of autumn when it should be relatively easy to spot premature

colouration, premature shedding of foliage or fungal growth associated with decay.

A schedule of inspections should be carried out with reference to the premises' range of target zones. Inspection of trees in high risk target zones should be more frequent than those of trees in low risk target zones. Trees in high risk target zones should be inspected after high winds. Knowledge of local conditions will be needed to schedule inspection intervals appropriately. Suggested *minimum* inspection intervals are:

Risk zone	Level of inspection	Interval
High	detailed	annual & after high winds
Medium	routine	every two years
Low	informal	every three years

Remedial action

If a warning sign is observed in a tree situated in a high risk target zone, a decision should be made whether the zone should be fenced-off pending remedial action. Options for remedial action range from felling the tree, removal of an affected limb and pruning it to reduce the size of its crown. Expert advice should be sought if necessary, e.g., from a reputable tree-surgeon, forester, or arboriculturalist. It may be necessary to seek expert advice if a tree is the subject of a preservation order, is the home of protected wildlife or is within a conservation area. If expert advice is given it is prudent to follow it.

Record-keeping

Written records of should be kept. These should be audited and made available for examination by enforcement authorities if required. For each tree inspected, the record should show its identification number [if any], its location, target zone classification, what [if any] warning signs were noted, any remedial action proposed and the date

that the remedial action was completed. Photographs of inspected trees are helpful. Appendix 1 is an example of a tree safety inspection record sheet.

Further reading

Scout Association, 2001, *Activities – Risk Assessment*,

www.scoutbase.org.uk

The Forestry Commission, 2000,

Hazards from trees. A general guide,

www.forestry.gov.uk

English Nature, 2000,

Veteran trees. A guide to risk and responsibilities,

www.english-nature.org.uk

Arboriculture and Forestry Advisory Group [AFAG] leaflets published by HSE Books, www.hsebooks.com

Health and Safety Executive,

Managing Health and Safety in Forestry,

www.hsebooks.com

Appendix 1

TREE SAFETY INSPECTION CHECKLIST & RECORD		
Name of site.		
Name of inspector[s].		Inspection date.
Tree ID.	Type of tree.	Location of tree.
Type of inspection: Informal/ Routine/Detailed		
Risk zone of tree: High/ Medium/ Low		
Warning signs.		
Lifting root plate, tearing out of roots, extensive root damage, or root loss? Provide details.		
Large cracks in the ground around roots? Provide details.		
Cracks or splits in trunk or large branch? Provide details		
Broken trunk or large branch? Provide details.		
Hanging broken trunk or large branch? Provide details.		
Large amount of decay in a trunk or large branch? Provide details.		
Signs of fork weakness involving big branches? Provide details.		
Signs that the tree is in poor health? Provide details.		
Damage by machinery, vehicles or browsing animals? Provide details.		
Signs that nearby trees have suffered wind damage, or have been blown over? Provide details.		
Other concerns – provide details.		
Proposed remedial action.		

Remedial action carried out.	
Date of next inspection.	
Signature.	Date.