



## 5 MANAGING AND CARING FOR TREES

Thousands of young trees die through lack of aftercare. However, everyone can play a part in helping to change this.

They can give a few minutes of essential annual care to any trees they have recently planted – and this section explains what this involves. They can also keep an eye on young trees in their communities and, if they seem to be needing care, encourage whoever owns or manages them to do something about it.

This section also looks at the various management techniques used to care for trees of all ages — including mature and ancient trees. However, most of these should only be carried out by experts.



The Tree Council's  
Tree Warden Scheme

THE TREE  
COUNCIL

in partnership with National Grid and supported  
by the Government's Cleaner, Safer, Greener Initiative

## Caring for newly-planted trees

Annual care for trees in their first five years is vital. Large numbers of young trees die from neglect, especially from the failure to carry out basic weed control.

For information about caring for new trees before planting, see section 4, *Tree planting – planning and practice*.

It is important to check on newly-planted trees and woodlands at least once a year and carry out a few simple maintenance tasks including:

- ▶ watering (if necessary)
- ▶ fertilising (if necessary)
- ▶ clearing grass and weeds
- ▶ adjusting/replacing/removing tree stakes and ties
- ▶ checking guards and shelters
- ▶ ensuring roots remain covered
- ▶ pruning carefully (if required).

### Watering

Except in long dry spells, it is rarely necessary to water transplants or whips (again, see section 4), provided they were planted at the right time of year, with the roots kept moist, and attention is paid to weeding and mulching (see page 3).

This is important both at the time of planting and in the first few years after that.

Watering may be necessary for larger stock, although once the trees become well established, most will need watering only during droughts.

If watering standard and semi-mature trees, give them a very thorough soak – about 50 to 75 litres per tree (10 to 15 gallons), depending on the size, every other week in dry weather during the growing season.

Watering ‘little and often’ will only encourage surface rooting, increasing the tree’s vulnerability to drought and scorching by the sun.

### Fertilising

This should not usually be necessary, even for trees planted on poor soil, provided plenty of compost or manure was put in the planting pit. This organic matter will include enough slow release nutrients to sustain the tree for its first few years.

### Weed control

Grasses and other fast-growing, herbaceous perennials compete with young trees for moisture, nutrients, space and light. To help the tree get established, it is important to keep an area of about a square metre (just over a square yard) around it free of weeds for at least three years.

### Hand weeding

Hand weeding can be time-consuming, but may be a good way of involving local communities in caring for trees they have recently planted. Surface tree roots should not be disturbed.

Pull out grasses, woody plants and herbaceous perennials so that they are uprooted. They should not be cut back or mown, as this encourages growth. Hoeing runs the risk of damaging the roots.

### Mulching

Mulching is a simple and effective way of controlling weeds and it also:

- ▶ keeps the ground moist and cool
- ▶ means there is no need to use lawn mowers or strimmers near the tree, risking damage to the bark which might kill the tree
- ▶ avoids using chemicals.

Organic mulches also gradually improve the soil as they decompose, particularly if it is compacted or eroded.

Mulches are especially useful for trees of standard size and over, and planting community woodlands. They should be applied immediately after planting, but not until any weeds have been pulled up and the tree has been watered. One application of mulch is usually adequate, but trees benefit from mulching in later years if there is little natural plant litter. It is best applied early in the year when the ground is moist – but after all weeds have been cleared.

- ▶ Do not apply mulches during frost or drought.
- ▶ Do not spread mulch too thickly as it may inhibit gas exchange.

Loose organic mulches include:

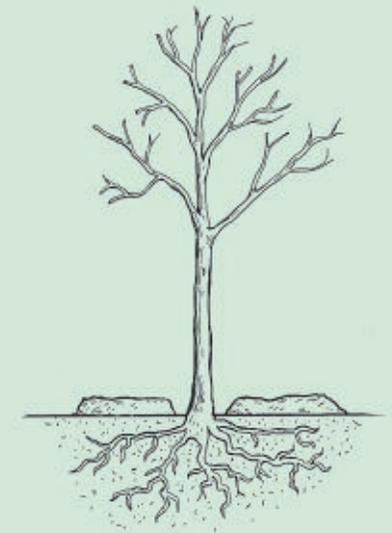
- ▶ leaf litter
- ▶ spoiled hay (available from farms)
- ▶ well-rotted manure
- ▶ well-rotted lawn clippings – or grass clippings from the previous cut
- ▶ composted bark
- ▶ wood chips – although not fresh ones because there is a danger of nitrogen loss from the soil as they degrade.

### Loose organic mulches

Spread a layer of organic material – 50 to 100mm (2 to 4in) deep – around the stem in a circle of about 1m (3ft) diameter.

For woodlands, spread the mulch over the entire planting area.

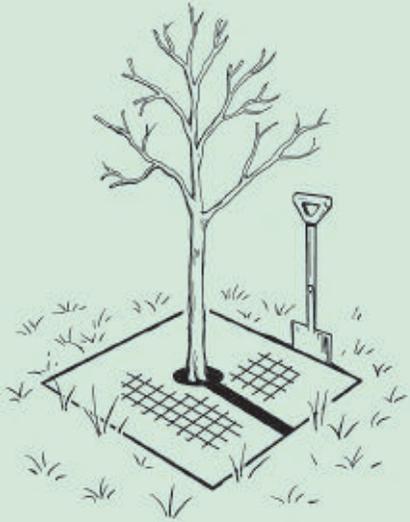
Keep mulch away from the stem to avoid rot.



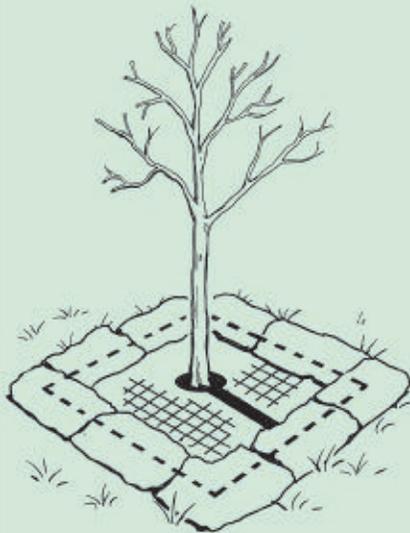
Mulch mats are available from garden centres and other suppliers of forestry products. They are easy to fit, much less bulky than loose mulch, relatively inexpensive (depending on the type and number ordered), and disintegrate after about five years. Roofing felt or old carpet are cheap alternatives for small plantings.

### Mulching with mats

Outer edges should be pushed into the soil



or partially buried to anchor them.



### Chemical weed control

Chemical weed control is often used on large-scale plantings of small stock – whips and transplants – where hand-weeding and mulching are not cost effective. However, the use of pesticides is now well regulated.<sup>1</sup>

The Pesticides Control Act 1988 regulates the sale, supply, storage and use of pesticides. Certificates of competence are required by:

- ▶ any contractor (volunteer groups are classed as contractors)
- ▶ anyone who was under 25 on 1 January 1989 who uses pesticides approved for use in agriculture, horticulture and forestry, unless under the direct personal supervision of a certificate holder.

There are suitable chemical treatments for grasses and grass/broadleaved weed mixtures, bracken, heather, woody weeds, gorse, broom and rhododendron, for conifer plantations, mixed woodlands and amenity trees.<sup>2</sup>

### Stakes and ties

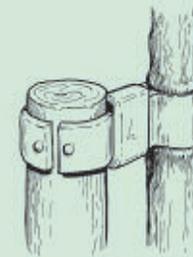
It is important to check the stakes and ties on young trees regularly and remove them as soon as possible.

Ties which are retained too long and start to constrict the trunk or which break or slip so the stake causes abrasion, can result in permanent, sometimes terminal damage to trees.

### Stakes and ties

Check the stake and the tie. Is the tie too tight? The tree stem should not be under pressure from the tie, and should not rub against the stake or guard.

If the tie is left on the tree too long, the trunk will eventually grow around it, causing scarring and damage that may lead to disease and decay.



Does the tree still need a stake? A young tree should need one only until its roots have grown into undisturbed soil to give it stability.

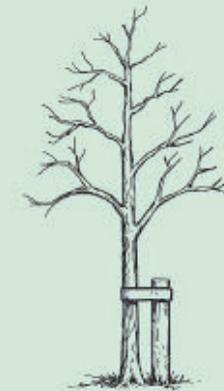
If, once the tie has been undone, the tree leans and the roots move



or, if the tree is top heavy and bends over



shorten the stake and replace the tie at the top of the stake.



### Guards

Check tree guards in spring and autumn to ensure they are effective (no bark is missing or twigs bitten or broken off) and not rubbing or cutting into the tree.

- ▶ If a guard is inadequate or the risk has changed, consider different protection, e.g. a taller tube to protect against deer, or fencing to keep off cows and other farm animals.

- ▶ Repair/replace damaged guards.
- ▶ If a guard is damaging the tree, adjust, modify or replace it.
- ▶ Remove the guard when there is no longer a risk of damage and clear away any material that has built up inside.

### Wind and frost

Exposure to a cold wind can kill roots. Check trees in the first weeks after planting, especially after storms or hard frosts, or in early spring before the leaves flush, to see if any roots have become uncovered. Once the soil has thawed, tread around any loose roots to keep the soil firm and stem upright.

### Pruning newly-planted trees

Careful pruning of young trees can prevent problems in later life, but bad pruning can kill trees or make them hazardous, so training is important.

As well as pruning to remove dead or diseased twigs or branches, formative pruning is important to produce a strong lead shoot. In larger stock – feather and upwards – this will have been done by the nurseryman as part of the process of producing the trees.

With whips, transplants and seedlings this should be carried out when the tree has developed sufficiently, sometime after its second year.

For more information on *Pruning and tree surgery*, see page 8.

## Caring for established trees

Established trees – those that have been planted for more than 10 years in the case of standards or those that have outgrown their tree guard and stake – still benefit from care.

### Mulching

Mulching can have the same benefits for mature trees as for newly-planted (see page 3). To be most effective it should be spread 50 to 100mm (2 to 4in) over an area twice the height of the tree. Keep the base of the trunk free of mulch – leave an area 25 to 50mm (1 to 2in) – or the bark may get moist and this could lead to decay.

### Regular inspection

Trees benefit from regular check-ups which can help prevent major problems. Like young trees, therefore, mature trees should be inspected at least once a year to look out for any tell-tale signs such as:

- ▶ reduction in twig growth – compare it with growth over the past three years
- ▶ fewer or smaller leaves
- ▶ fewer buds
- ▶ dieback in the crown (dead branches in the upper part of the tree)
- ▶ trunk decay – signs include loose bark or fungi
- ▶ spotted, deformed, discoloured or dead leaves that could be caused by insects.

### To fertilise or not

Trees develop in balance with their environment, absorbing water and dissolved minerals where they are available. If water or a particular mineral becomes in short supply

then growth of the whole tree will reduce, but the tree certainly will not die from ‘starvation’. Before rushing in with fertilisers there should be a demonstrable need, based on a soil and foliar analysis combined with a whole tree assessment. This will enable a tree care professional to advise on the best kind of fertiliser, timing and application rates.

However, some trees, particularly in urban settings – where they are under extra stress – may not be getting enough nutrients from the soil, and fertiliser may be necessary. This can increase growth, improve a tree’s health and reduce susceptibility to pests and disease. Again, before applying fertiliser take professional advice.<sup>3</sup>

### Pruning established trees

Pruning an established tree can remove dead and diseased wood, or branches infested with pests, make the tree more vigorous and improve its structure. Deadwood is an important habitat and part of the natural process of a tree. If it is in a woodland and not going to cause problems if it drops a branch, it is a good idea to consider whether management is really necessary.

Careful pruning or tree surgery may also mean that a ‘problem’ tree does not have to be felled on the grounds of safety or because of the risk of structural damage to nearby buildings.

However, it is vital to check first whether the tree is covered by any legislation, such as a Tree Preservation Order (see section 7, *The law and its impact on trees*).

Work on large established trees should be carried out by an expert, as it may require special equipment, training and experience.<sup>3</sup>

It may involve tree climbing, removing large limbs and using a chain saw – in which case protective clothing must be worn and training and insurance are advisable. They are essential if working on someone else’s land or removing tree branches overhanging someone else’s property (see section 7, *The law and its impact on trees*).

A professional arborist can also advise what pruning is really necessary. Any work could change how the tree grows, or even cause it damage, so it is important that no branch is removed without a reason.

## Caring for ancient trees

Britain is thought to have more ancient trees than any other country in Europe, providing valuable wildlife habitats and enriching our heritage. Many of them have lasted so long because they were ‘working’ trees, that is their wood and leaves were a crop.

The management techniques used to produce this crop – often coppicing or pollarding (see page 13) – may have helped them to survive.

Their continued survival – often as living, decaying trees – depends on continued care. What this care involves can vary from one ancient tree to the next, with factors such as species, where it is growing, whether it has

been actively managed at some time in its life and how long ago this ceased, all playing a part.

Anyone planning to manage an ancient tree should get expert advice. However, the general rule is to do as little as possible, particularly when it comes to surgery – and only when there is a clear need, such as action to keep the tree alive as long as possible or to make it safe.

If possible spread the work over several years. The longer ago that the tree was last worked on, the smaller the amount of tree surgery that should be done at one time.

As there is no such thing as a completely safe tree, it is also important to carry out a risk assessment as part of the management plan and then take appropriate action to reduce the risk to a reasonable level.

As part of caring for the tree itself, it is also important to manage the surrounding land by, for example:

- ▶ minimising disturbance and competition for water, light and nutrients from other vegetation
- ▶ preventing physical damage to the tree, such as fire, compaction, cultivation and deep ploughing which could harm the roots .

Ideally, fallen branches and dead wood should be left where they are, as they provide habitat for many of the organisms associated with ancient trees.<sup>4</sup>

## Pruning and tree surgery

Pruning and training a tree correctly helps to keep it strong and healthy. It also regulates its shape and size, which can be particularly important for trees in gardens, streets and other urban landscapes. Poor pruning, however, can damage a tree for its lifetime, so all work should be carried out by experts. As small, accurate cuts are generally less damaging than large ones, formative pruning to train a young tree can prevent the need for more drastic surgery later when it can be much more stressful for the tree. The idea is to create a framework of evenly-spaced branches so that the tree needs less corrective pruning to maintain safety and the desired appearance as it matures.

It is usually best to prune deciduous trees when dormant – in late autumn or early winter – before spring growth. Other times are possible, except late winter or early spring when many trees exude sap (bleed) if cut.

Trees that bleed a lot even towards the end of their dormant season, such as birches, horse chestnuts, walnuts, maples and cherries, should be pruned in mid summer after new growth has matured. Also avoid heavy pruning after a spring frost.

Evergreens need little or no pruning except to remove dead, damaged or diseased branches, crossing stems and badly-placed laterals (side branches). This should be done in late summer.

For work on large trees, anyone other than a qualified arborist should consult an expert<sup>3</sup>.

Quotations are usually free, but there may be a fee for advice.

No work should be carried out during the breeding season if, for example, there is any risk of disturbing nesting birds (see section 7, *The law and its impact on trees*).

### Formative pruning

- ▶ Remove any dead, diseased, or damaged wood.
- ▶ Cut out weak or crossing branches while maintaining the tree's natural form.
- ▶ Decide which branches to prune back or remove.
- ▶ Never cut flush with the stem or trunk – always outside the branch collar (the slight swelling on the branch where it joins the trunk) – to avoid damaging the tree's natural protective zone.

It is not necessary to apply wound paint or dressing. Research shows that they do not reduce decay or make the tree heal more quickly, and they rarely prevent disease.

### Removing a thin branch

For branches of less than 2.5cm (1in) diameter, make a single cut with a pruning saw or secateurs.



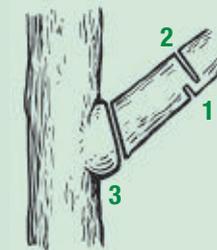
### Removing a thicker branch

1. Using a saw, make a shallow undercut at least 30cm (12 in) from the trunk.

2. A little further out, make a deeper cut from above.

Removing the bulk of the branch in this way prevents it breaking off and ripping back the bark, making it vulnerable to infection.

3. To remove the remaining stub, undercut just outside the branch collar, then cut through from above. If the collar is difficult to find, cut through the stub at a short distance from the trunk, making the cut so that it slopes outwards away from the tree.

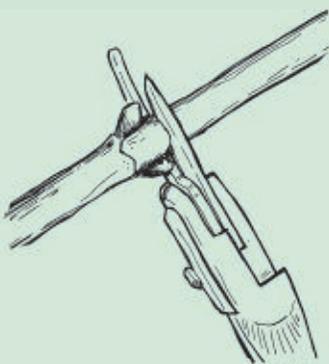


If the aim is to shorten a branch, rather than remove it completely, cut it back to a sideshoot or healthy bud, facing outwards. Do not cut too far from the bud as this leaves an entry point for disease. Cutting too close could damage the bud.

For trees with alternate buds, make an angled cut 3 to 5 mm (1/8 to 3/16 in) above a bud so that the base of the cut is level with the top of the bud on the opposite side of the stem.

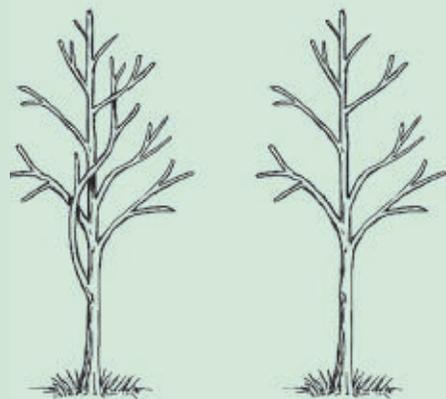
### Pruning opposite buds

For trees with opposite buds, make a straight cut directly above a strong pair of buds.



### Removing a crossing branch

Branches that cross should be removed as they may rub together, causing damage to the bark – so letting infection in.



For most young trees it is best to maintain a single dominant leader to grow into the main trunk.

### Removing a competing leader

If a young tree develops a second leader – a co-dominant stem – remove one of them to avoid possible future branch failure.

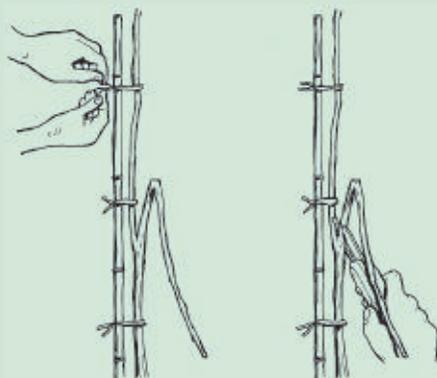


### Creating a new leader

If a leader is damaged it can be replaced by training another shoot.

Choose a strong shoot and tie it to a cane. Cut off the old, damaged leader.

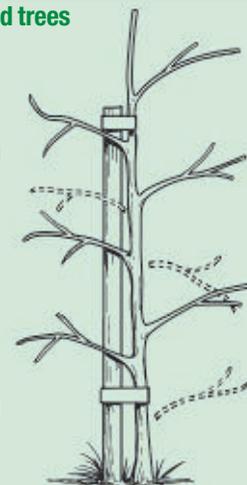
Once the new leader is growing strongly, remove the cane.



### Pruning feathered trees

Remove any competing or crossing shoots to leave a single main leader.

Take out any spindly or badly placed laterals to achieve a framework of evenly-spaced and well-balanced branches.



### Pruning a central-leader standard – ‘feathering’

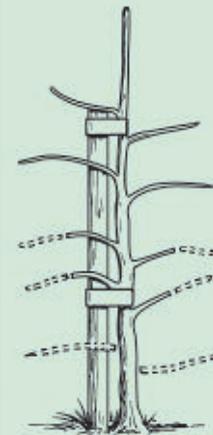
Feathered whips can gradually be pruned to form a standard, a process which sometimes also occurs naturally. This ‘feathering’ channels food to the main stem which becomes thicker and stronger.

Year 1: Remove any weak or competing leaders.

On the lowest third of the tree cut back laterals to the main stem.

On the middle third, cut back laterals by half.

Years 2 and 3: Repeat the procedure until the tree has about 1.8m (6ft) of clear stem.



### Pruning a weeping standard

Cut back lower laterals on main stem.

Cut back crossing or vertical branches that spoil the symmetry of the tree, but leave some semi-upright stems to grow downwards naturally and produce tiers of weeping branches.

Rub or pinch out any growths on the main stem as soon as they appear.



### Surgery/pruning – mature trees

Certain types of pruning or tree surgery can help keep mature trees healthy, safe and attractive – but it is always best done by an expert.<sup>3</sup>

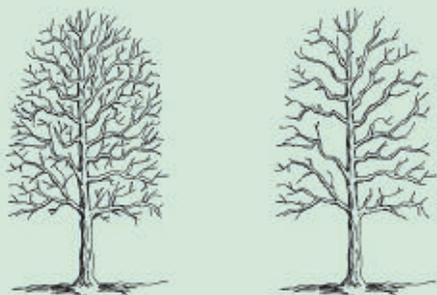
### Crown thinning

Crown thinning involves removing selected branches within the tree canopy to allow more light to penetrate through and reduce the wind resistance of the tree. It does not affect the height or the shape of the tree.

### Crown thinning

Trees may be thinned by up to 30 per cent – one branch in three.

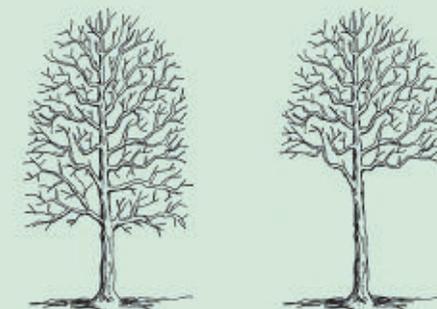
Dead wood and crossing branches should be pruned out as a priority as the tree is thinned.



### Crown lifting

Removing a tree's lower branches can be done to allow access, clearance for buildings, vehicles or pedestrians, or to open the view beneath the canopy.

### Crown lifting



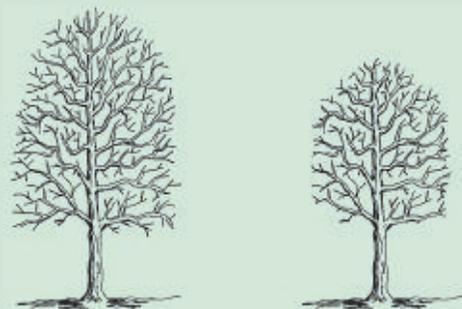
### Crown reduction

The aim of crown reduction is to reduce the height and spread of a tree while retaining its natural shape. One reason for doing this is to help to create the statutory clearance that is required for power and telephone lines.

Not all tree species respond well to this treatment.

### Crown reduction

Cut back leaders and branch terminals to branches that are at least one-third the diameter of the cut stem.



### Other tree management techniques

There are various ways of managing trees – some for aesthetic reasons and others more for economic and safety reasons. As with any kind of surgery on a mature tree requiring a chain saw, this is something for experts to carry out. However, it is important for Tree Wardens to understand the techniques so that they can explain to others in their community about how and why trees are managed.

### Coppicing and pollarding

Coppicing and pollarding are two management techniques which were traditionally practised to give a regular supply of firewood, forage for animals, building timber or pliable stems for basketwork and fencing.

Today pollarded trees and coppiced woodlands are particularly important for their wildlife value and as landscape features. Pollarding is also still used to restrict the size of street trees.

Coppicing is the regular pruning of a tree close to the ground so that many new strong shoots grow from the base.

Trees are normally coppiced on a seven to 20-year cycle, depending on the species. Traditionally coppiced trees include hazel to produce a good crop of nuts and materials for fencing or making hurdles.

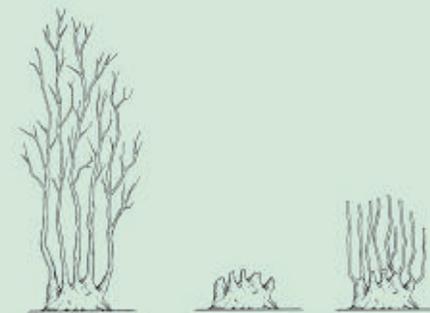
Pollarding involves pruning a tree back to its main stem or branch framework, stimulating new shoots above the height where animals can graze.

It is important to seek expert advice in the management of ancient pollards. However coppicing or pollarding young trees or managing traditionally-coppiced woods are all useful practical activities with which many Tree Wardens get involved.

### Coppicing

Coppice in late winter or early spring.

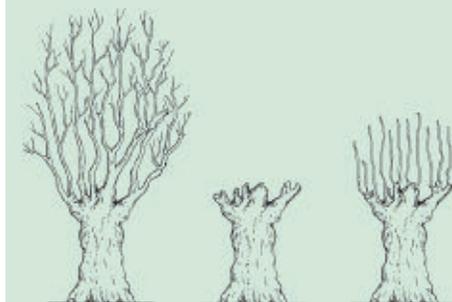
Cut back all stems to the base, leaving the swollen basal wood unpruned.



### Pollarding

Managing pollards is best carried out by a professional who has specialist experience.

The basic technique is to cut back the branches every few years when the tree is dormant.



### Creating a pollard

This is normally done when the tree is between 10 and 15 years old and has a trunk diameter of between 100mm and 300mm (4 and 12in) depending on the species.

Cut the leader at between 2 to 5m (6 to 15ft) from the ground to:

- ▶ remove the tree's crown completely or
- ▶ leave a framework of main branches that are also shortened to the required pollard height.

Then remove all lower lateral branches.

### Maintaining a pollard

Re-growth can be cut back on a two to 30-year cycle, depending on the species, the tree's situation and the type of timber required. This cutting will create a swollen pollard head in the case of a single stem pollard, or a series of pollard knuckles on a branching pollard.

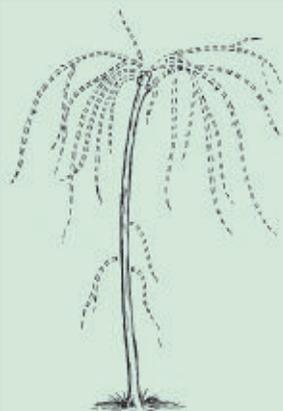
- ▶ Willow is normally cut every year or every other year to produce thin pliable timber for weaving.
- ▶ Oak was traditionally cut on a much longer cycle to produce building timber.
- ▶ Street trees like lime and London plane are maintained on a five to 20-year cycle – not for their timber but to restrict their size.

### Creating a branched pollard



### Creating a willow pollard

Willows pollard easily – new growth can be cut back each year in early spring while the tree is dormant.



### Pleaching

Pleaching is a popular way of training and shaping street trees in mainland Europe – a more formal version of pollarding. It is also used in formal gardens to create avenues of trees with their trunks left bare and their upper branches intertwined and woven to look like a hedge on stilts. The species most often used are lime, hornbeam, sweet chestnut and horse chestnut.

### Topiary

Clipping hedging into a particular shape is back in vogue again. Most small-leaved evergreen slow-growing trees – such as yew, box, privet and holly – can be managed as topiary.<sup>5</sup>

The more informal Japanese cloud pruning has also recently become popular. The aim is to produce a manageable tree – half-way between topiary and bonsai. The tree, such as Japanese holly, is pruned to a few bare

architectural stems, stripped of foliage except for a ball of green at the end. Cloud pruning is suitable for urban plantings where there may not be space for large trees.

### Bonsai

The ancient Japanese technique of bonsai is used to produce trees that are miniaturised versions of their mature or veteran selves.

Bonsai trees are used extensively in formal Japanese gardens but have become popular in the west, particularly in small urban gardens where space is limited. They can be cultivated from seed.<sup>6</sup>

### Training fruit trees

Fruit trees are pruned to maximise their fruiting potential. Over the years this has developed into something of an art-form, with pruning sometimes been carried out for ornamental reasons as well as to increase the yield.<sup>7</sup>

## Where to find out more

*Encyclopaedia of Gardening*, RHS

*The Tree and Shrub Specialist*, David Squire

*Pruning Trees and Shrubs*, Tony Kirkham

*Trees: Their Use, Management, Cultivation and Biology. A comprehensive guide*, Bob Watson

*Pruning for Quality: A National Forest Guide* [www.nationalforest.org](http://www.nationalforest.org)

*Veteran Trees: A guide to good management*  
[www.woodland-trust.org.uk/ancient-tree-forum](http://www.woodland-trust.org.uk/ancient-tree-forum)

### References

- 1 [www.pesticides.gov.uk](http://www.pesticides.gov.uk)
- 2 Department of the Environment booklet *Guidance for the control of weeds on agricultural land* (1992)  
Forestry Commission Booklet 51 *The Use of Herbicides in the Forest* (revised 1986) [www.forestry.gov.uk](http://www.forestry.gov.uk)
- 3 Arboricultural Association [www.trees.org.uk](http://www.trees.org.uk)  
International Society of Arboriculture [www.isa-uki.org](http://www.isa-uki.org)
- 4 Ancient Tree Forum, *Veteran Trees: a guide to good management*
- 5 *Topiary*, Christopher Crowder and Michael Ashworth
- 6 *Complete Book of Bonsai*, Harry Tomlinson
- 7 *Pruning Fruiting Plants*, Richard Bird

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