

PRUNING TREES

Reasons to Prune

There are many reasons why one might wish to cut a tree back but there are perhaps four main ones:

- SAFETY - Trees are much less 'dangerous' than is often assumed. Nonetheless mature trees close to vulnerable structures or in well-frequented places, particularly those with public access, may need tree surgery to remove potentially dangerous limbs. Preventative work may sometimes be justified, for instance to reduce wind-loading and lessen the risk of storm damage.
- ACCESS - Branches overhanging roads, footpaths etc. may need to be cut back or even removed to create adequate clearances; pruning may be advisable to create sensible distances between trees and structures while it may also be necessary to raise the crown of a tree improve access underneath.
- SHAPE - Young trees may benefit from formative pruning to ensure a good branch framework develops as it grows; specimen trees may be pruned to when a more balanced and symmetrical form is desired.
- PRODUCTION - Orchard trees require specific pruning techniques to promote good fruit production; timber trees may require low branches to be removed to ensure straight-grained, knot-free timber.

The Tree's Responses

Pruning wounds result from cutting into live tissue and this can expose the tree to infection. The tree's natural response is to isolate the damaged area by laying down callus tissue which later develops into 'woundwood', initially apparent as a roll of new tissue that grows out from the living tissues around the edge of the wound which gradually extends across the cut surface. In healthy, vigorous trees, small diameter pruning wounds may be fully sealed within a few seasons; however larger wounds may take longer to heal and in many cases may fail to do so before decay becomes established. However, once a wound is fully occluded further decay is largely prevented.



PRUNING TREES

Treatment of pruning wounds: To paint or not to paint?

It was once assumed that, as we apply a sticking plaster or a bandage when we cut ourselves, pruning wounds should also be covered and various 'wound dressings' were marketed for this purpose. Research subsequently showed that these dressings were very largely detrimental rather than beneficial. Some slowed or prevented the tree's own recovery process while others actually promoted decay. There is some evidence that certain treatments can inhibit some 'fresh wound parasites', such as the fungus that cause Silver Leaf in fruit trees, but in general the use wound sealants is not necessary and is often detrimental rather than beneficial.

Consequences of pruning

It is also important to understand that pruning to remove live branches also removes foliage, thereby reducing a tree's ability to produce food through photosynthesis; thus one should carefully consider just how much leaf-bearing material will be lost as excessive pruning is likely to lead to stress which, especially in the case of mature trees, may lead to their decline.

A corollary of this is that the tree will try to make good the loss of foliage; poor pruning technique in particular will tend to promote vigorous new growth. It can therefore be misguided to cut back a tree with the expectation that this will reduce shading; while it might initially let more light in, within a short time the dense new growth may well end up causing more intense shading than before.

Similarly, lopping the ends of branches or taking the top out of a tree to lessen the risk of wind damage may turn out to be counterproductive as within a short time the dense regrowth that poor pruning technique promotes may actually *increase* wind resistance and the risk of breakage. Where some form of crown reduction is required it is therefore preferable to achieve this through *selective thinning*, sometimes known as *heading back*. This involves pruning back leading shoots to a suitable fork and retaining the shorter side branch. This tends to lessen any tendency for the tree to respond with excessive regrowth.

Timing.

When it has been decided that pruning is required, a number of factors need to be considered, the first of which is, perhaps, when to carry out the work. Although winter is commonly thought to be the best time and in many cases is quite acceptable, most species will respond best to pruning carried out in the summer months, largely because they'll be in active growth and will begin the healing process. Some species, such as the plum and cherry and others in the *Prunus* family are prone to silver-leaf disease and other problems if pruned *other* than in the summer months.

The Arboricultural Association has an extremely useful Guide to Pruning which can be downloaded free from its website [here](https://www.trees.org.uk/Trees.org.uk/media/Trees-org.uk/Documents/GuideToPruning-Web.pdf):

<https://www.trees.org.uk/Trees.org.uk/media/Trees-org.uk/Documents/GuideToPruning-Web.pdf>

The table overleaf, adapted from a chart in that leaflet, provides some guidance as to how various Broadleaf trees respond to pruning as well as indicating the best season in carry out such work.

PRUNING TREES

Pruning Broadleaf Trees

Species	Tolerance of hard pruning	Resistance to decay	Time to prune	Notes
Apple	Good	Fair	Winter	Regular pruning generally required for fruit production; over-hard pruning likely to result in proliferation of 'water-shoots'. Wounds caused by structural pruning of larger limbs likely to lead to decay
Alder	Fair	Fair	Late spring/summer	Pruning not generally required if planted in the right location.
Ash	Fair	Moderate	Late spring/summer	Trees in good health are moderately tolerant of pruning, although exposed heartwood will decay. Note that dead branches (such as may result from Chalara Ash Dieback) rapidly becomes brittle and liable to breakage.
Beech	Poor	Fair/poor*	Late spring/summer	Responds poorly to hard pruning although it tolerates lighter work quite well. [* Sapwood is generally resistant to decay but the interior 'heartwood' is less so, being rather readily colonised by decay fungi if exposed.]
Birch	Poor	Low	Summer or mid-winter	Prone to bleeding when cut in spring. Pruning (other than of small twigs) is inadvisable as wounds are likely to decay. 'Topping' is particularly inadvisable. (Note that young birches naturally grow fast but reach a point when they largely cease to increase in height and begin to fill out laterally.)
Cherry, Plum etc	Fair	Fair	Summer	Heartwood general durable but the sapwood is susceptible to fungal diseases such as Silverleaf, for which reason summer pruning is recommended.
Eucalyptus	Poor	High	Late spring/summer	Pruning not generally required, but some trees can get 'leggy'. Although intolerant of hard pruning, they will respond well to pruning of young growth to improve tree form. Can be cut regularly to produce juvenile foliage.
Hornbeam	Poor	High	Late spring/summer	Generally trouble-free so pruning not generally required but will tolerate pruning reasonably well
Holly	Good	High	Winter	Generally tolerant of pruning, with a hard, dense wood not generally liable to decay.
Horse Chestnut	Good	Low	Late spring/summer	Pruning not generally advised: the tree's wood decays rather easily and regrowth following pruning tend to be weak.
Lime	Good	Moderate	Late spring/summer	Responds well to pruning in that it promotes vigorous (sometimes excessive) regrowth. The heartwood is somewhat susceptible to decay but it is often limited in extent.
Magnolia	Fair	Moderate	Mid-summer	Pruning not usually required other than some formative work on young trees. Pruning of larger overgrown specimens may be successful if spread over 2 or 3 seasons. May produce water-shoots (vigorous upright shoots) which may be removed.
Oak	Good	Good	Late spring/summer	Healthy, vigorous trees are generally quite tolerant of pruning. English oaks have a durable heartwood although several fungi will decay it over time, as seen in veteran trees. (N.B. Hollowness does not denote weakness)
Plane	Good	High	Late spring/summer	Pruning not generally required but when necessary it will generally tolerate pruning reasonably well

Continued....

PRUNING TREES

Species	Tolerance of hard pruning	Resistance to decay	Time to prune	Notes
Poplar	Good	Low	Winter	Fast-growing and vigorous. Pruning likely to promote vigorous regrowth but large wounds will be susceptible to decay. Pruning in the summer may cause bleeding
Robinia	Good	High	Mid to late summer	Although tolerant of pruning it often leads to the production of vigorous, very spiny shoots which may be unwelcome. The heartwood is extremely resistant to decay
Rowan & Whitebeam	Fair	Moderate	Late spring/summer	No pruning normally required other than to remove dead or damaged branches
Walnut	Poor	Moderate	Summer or mid winter	Walnuts respond poorly to hard pruning; in fact none should normally be required other than to remove dead or damaged branches. Any pruning that <i>is</i> required should be done in summer as cuts are prone to bleeding.
Willow	Good	Low	Late spring/summer	Responds well to pruning producing vigorous new growth even when cut hard back; however the wood has little resistance to decay.

Pruning Of Conifers

Most conifers respond poorly to pruning; *light* trimming may be acceptable but hard pruning should be avoided unless absolutely essential.

It is important to note that many conifers will not produce new growth from old wood, so pruning can leave exposed bare areas. This is notably the case with the conifers commonly used for hedging such as the **Lawson** and **Leyland cypresses**. While these species generally have dense green outer foliage, their interiors are brown and bare of green shoots. As a result, over-harsh pruning or trimming that removes the outer green foliage exposes the bare interior, as in the example on the right.

Furthermore, as these species will only regrow from green shoots the exposed bare areas are likely to *stay* bare and unsightly.

Another evergreen frequently planted in gardens and used for hedging is **Thuja plicata, (Western Red Cedar)**; this is *slightly* more tolerant of being cut back as it usually retains a few green shoots in its interior and so in time it *may* recover. Nevertheless, hard pruning is still inadvisable.



Yew is an exception amongst evergreen conifers in that it does generally re-shoot quite well following pruning. Nevertheless, *light* pruning, especially of yew hedges and shaped or topiarized trees is to be preferred.

PRUNING TREES

Pruning Techniques

Pruning branches: where to cut?

Natural branch breakages, such as may result from storm damage, will usually result in a torn stub being left on the tree and over the last few millennia trees have, in general, survived, stubs and all! Nevertheless it is generally regarded as being preferable (and it's certainly tidier) to avoid leaving stubs following branch removal.

On the other hand it is distinctly bad practice to remove a branch by trimming it hard back to the trunk to leave a 'flush cut'; this creates a much larger wound that will be much more likely to develop decay and will take longer to heal

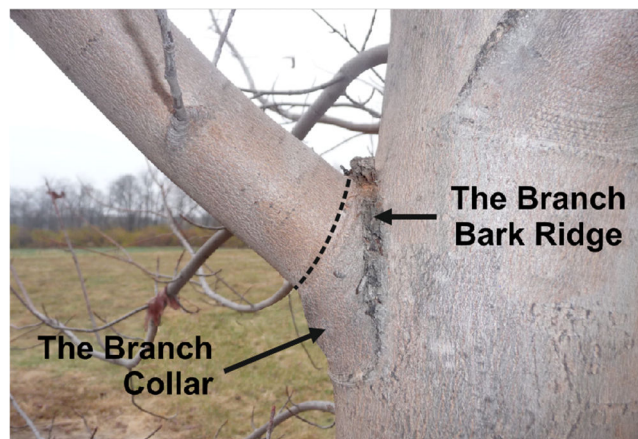


An example of an unsightly stub



a flush cut

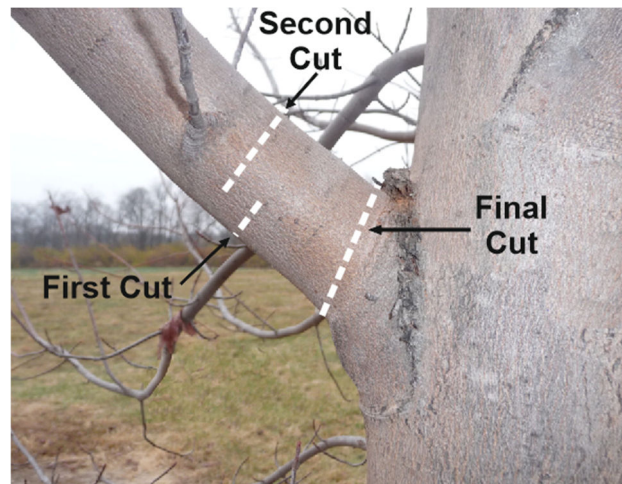
To create as small a wound as possible without leaving a stub one should aim to make the final pruning cut just beyond the Branch Collar. This is apparent in most branch unions as a more or less distinct swelling at their bases, with a zone of roughened bark called the Branch Bark Ridge at the top of the swelling, visible in both of the images above. Note that in the case of the flush cut, the cut surface extends *into* the branch bark ridge. This should be avoided, as illustrated in the diagram below, where the dashed line indicates the best place for the final pruning cut, just beyond the branch collar but without cutting into the branch bark ridge.:



However, if one were to make a single cut down that line, in all likelihood the branch would break before completing the cut, ripping down and damaging the tree. To avoid this the three-cut method should be used when removing a branch of any size. The first cut is made upwards, beyond the bark collar; the second is made further out, cutting down to remove the branch. The final cut trims off the stub back to just beyond the branch collar

(See illustration on next page...)

PRUNING TREES



Common Tree Work Operations



General information - The common operations described and simply illustrated here show some of your options.

An arborist should be able to help in defining the work that will be appropriate for the tree(s) and in line with British Standard 3998 – *Recommendations for Tree Work*.

- Please note that the entire branch system is known as the 'crown'.
- LPA approval is not required to remove **dead branches**.



Crown Thinning - This reduces the density of the tree's crown without changing the overall shape and size of the tree. Thinning reduces the amount of foliage and allows more light through the canopy or crown.

The amount of thinning proposed should be specified as a percentage (%) of the leaf area (usually no more than 30%).

- Useful for letting more light into gardens and windows



Crown Lifting - This means removing lower branches to increase the clearance between the ground and the crown.

Identify the branches you wish to remove, or specify a height above ground level to which you wish to "lift" the crown.

- Useful for allowing more light into gardens
- Prevents low branches obstructing paths, drives etc.



Crown Reduction - The tree crown is reduced by shortening branches, and so changes the overall size and shape of the tree. Reductions are usually carried out all round the outer parts of the crown to maintain a balanced shape, but seldom should it include cutting through the main stem.

The amount of reduction proposed should be stated in terms of the intended height and spread of the tree after pruning (rather than what percentage (%) of the overall crown is to be removed).

- Partial reduction may be useful for preventing branches contacting buildings, roofs and guttering