



Harmony Arboriculture

'The Importance Of The Proper Pruning Of Trees' by Harmony Arboriculture

How and why pruning should be carried out correctly

A tree will self-prune (shed limbs)

Trees are self-optimising organisms that will try to conserve energy and expend as little as required in order to grow and produce seeds, flowers and fruit. Any part of the tree that uses up energy but does not help in energy production will be shed by the tree as it is no longer useful. For this reason a deciduous tree will shed its leaves in winter when there is little or no opportunity to photosynthesise; flowers drop off as soon as they have played their part; and twigs and branches drop when they are of no further benefit to the tree.

Limb loss and woundwood

Of particular importance is the process of limb loss, such as large twigs and branches. Often twigs and branches may fall from the tree following high winds or mechanical damage, but trees will also shed their own limbs when they are of no further use to the tree. For instance; a branch that becomes permanently shaded from the sun will no longer be useful in the process of photosynthesis, however, it will still need energy in order to live. The tree now has a branch that it must feed but is providing nothing in return. In this case the tree will shed that limb as it is no longer beneficial. The tree will do this by blocking the water conducting vessels within the wood with special cells until the branch dies and drops off. The tree will cover the branch stub with special wood known as woundwood, to keep out any possible infection. It is needful to understand this process, as finding dead wood on a tree does not necessarily mean the tree is infected or at risk of failing. It may simply be that the tree no longer has any use for that particular part and so sheds it, putting the energy saved into some other tree part. Summer limb drop and the shedding of otherwise healthy branches is something else completely and is an indicator that a tree is suffering stress of some description.

The need for pruning

As stated before a tree can often maintain itself, getting rid of excess portions of itself, or dropping used flowers, fruit, seeds and leaves. Pruning, as people often see it, is an artificial process undertaken at the behest of the tree owner to satisfy their own requirements; i.e., reduction in overall crown size. The tree is perfectly happy in growing as large as it possibly can, however, this is not always required by the tree owner who will then reduce the height as much as he or she sees fit. Pruning is very rarely carried out solely for the benefit of the tree itself.

Ideally a tree should be left to get on with it as nature intended, but this is not always the case, and is sometimes even impractical or dangerous to let it do so. Decisions need to be made and compromises agreed between man and tree; What to prune, how much to remove, when to prune, what to leave etc.

Formative pruning V remedial pruning

Formative pruning is carried out when the tree is young and involves training a tree to grow a certain way, so as to avoid more serious pruning later on in the tree's life. I.e., trees next to overhead powerlines should be pruned when young and trained to grow *away* from the powerlines rather than toward them. If carried out at an early stage in the tree's development and regularly checked and maintained the tree undergoes minimal disruption.

If formative pruning is not carried out then the same tree will become a problem as it encroaches upon the overhead powerlines. Ultimately it will need to be pruned when it is older and larger, and probably pruned severely, for it to not affect the powerline. Carrying out pruning work in order to solve a problem like this is known as *remedial pruning*, as it is a remedy to a potentially dangerous problem. Removing bigger limbs and the leaves that they hold reduces the leaf cover and therefore the ability for the tree to photosynthesise. Also, the tree is now left with many large wounds that are open to infection. The tree will need to expend a lot of energy over a long period of time in order to seal the wounds and prevent infection spreading, using up valuable reserves in the process.

Pruning types

- *Crown reduction*

Reducing the overall size of the tree crown by trimming back the tips of every or nearly every branch.

- *Crown thin*

A reduction in density of the crown by removing 30% of the branches within the crown, e.g.

- *Crown lift*

Removing the lower portion of the crown, thereby increasing the height it starts from.

- *Crown clean (deadwooding)*

Removing dead and dying branches from within the crown, sometimes also removing branches likely to be problematic later on in years, i.e. branches that cross, have irregular bending, weak unions etc.

- *Lopping and topping*

A form of pruning now understood to be bad practice as it can lead to ill health and stress on the tree. Lopping and topping should generally be avoided in order to maintain tree health and aesthetics.

- *Pollarding and coppicing*

Removal of all branches of a tree to leave a bare stem. The tree then puts its energy into producing new shoots, which were traditionally used in wood-craft. Coppicing was usually carried out on multi-stemmed trees and involves cutting all the stems back to a 'stool' a few inches high, then harvesting the stems for use in traditional wood-craft.

When to prune

Generally tree pruning should be carried out in broadleaf (deciduous) trees during the dormant season. Coniferous trees very rarely need any major pruning carried out on them and can be pruned safely throughout the year.

Trees of the *Prunus* species such as cherry, plum etc. should be pruned soon after flowering to reduce the risk of bacterial infection. Maple, birch, beech and walnut should be pruned in leaf or just after leaf fall and Magnolia in high summer to avoid 'bleeding' (excluding sap), which although not considered damaging, can be unsightly.

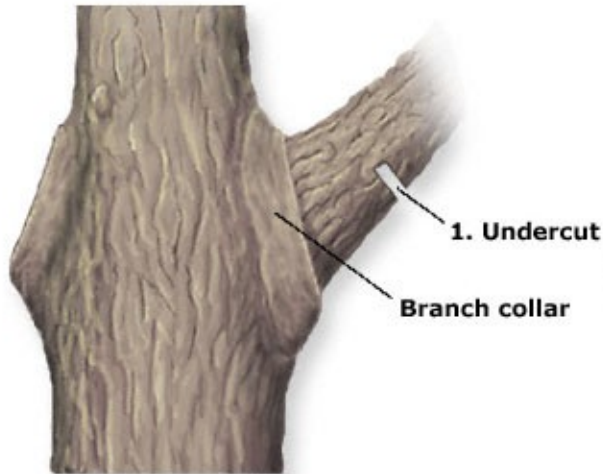
(The Arboricultural Assoc.)

How to prune

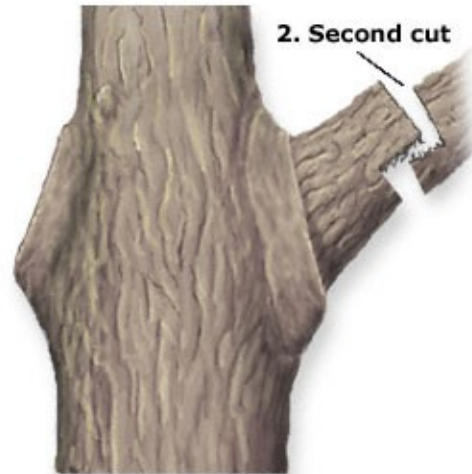
Branches should be cut from a tree in such a way that it promotes the sealing of the wound and prevents infection and decay. A 3-step process of branch removal should be carried out, paying particular attention to not damaging the branch collar, as this is where the tree seals the wound. Damaging this important site of meristem activity may lead to incomplete sealing of the wound, leaving it open to harmful pathogens.

Pruning a Large Limb

1 Undercut 12-24" up from the branch collar. This stops the bark from tearing.



2 Make the second cut from the top all the way through the branch, 2-3" above cut #1.



3 The final cut should be just beyond the branch collar. Support the stub so it does not tear the bark.

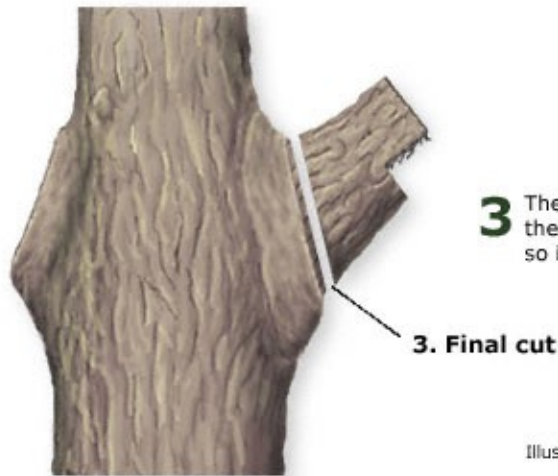


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Leaving long stubs, ripped or torn bark, or cutting too deeply and damaging the branch collar should be avoided.

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