

13 TREE PRUNING TECHNIQUES

City &
Guilds
NPTC



Husqvarna[®]

Use of this worksheet

This worksheet is part of a series of interactive worksheets that has been produced in association with Husqvarna to support the delivery of training for the City & Guilds (NPTC) suite of chainsaw qualifications.

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Content

This worksheet covers the following outcomes:

Be able to carry out aerial pruning of a tree

Understand how to carry out aerial pruning of a tree

Definition of prescriptive terms and measurements

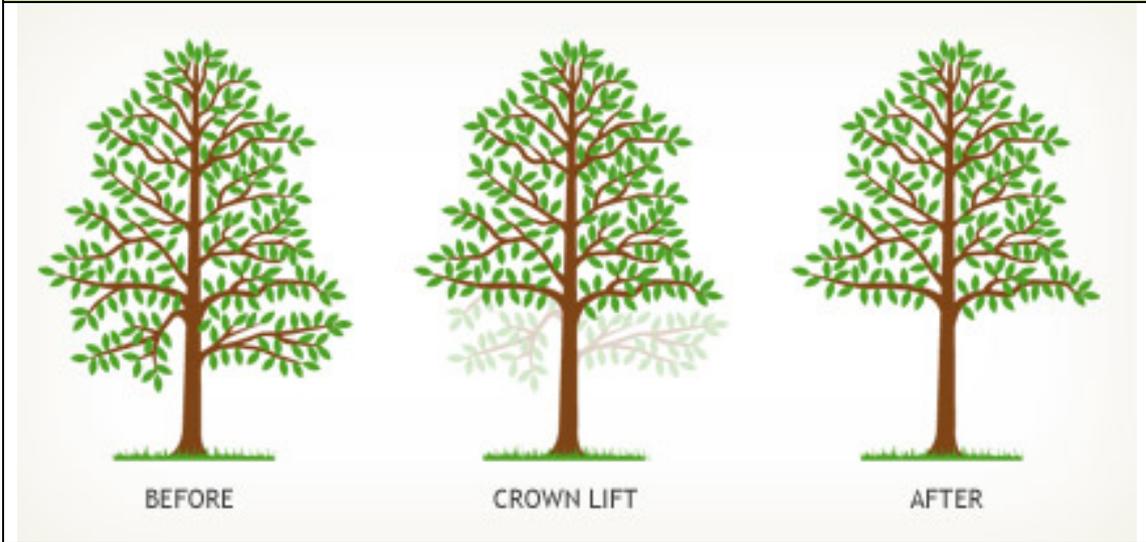
The first thing to consider when pruning a tree, is whether cutting off and removing living branches will actually benefit the tree. It is important that the arborist undertaking the pruning has an understanding of the biology of trees: how they respond to pruning wounds, and what effects pruning the tree canopy will have, by reducing stored energy reserves and the tree's photosynthetic ability.

Care should be taken to avoid excessive pruning. At least one half of the foliage distribution in younger trees should be on branches that arise in the lower two-thirds of the trunk. In general, pruning should employ thinning cuts. Care should be taken not to expose the inner canopy, (shade leaves) to intense sunlight by over-thinning or excessive cleaning out of the entire inner canopy.

All pruning work should employ natural target pruning in accordance with the principles of modern arboriculture. Pruning should endeavour to maintain the natural form, structure and visual appearance of a tree wherever possible.

Define the techniques featured in the images overleaf (and following pages 5 and 6) and state why they are carried out.

Crown Lifting



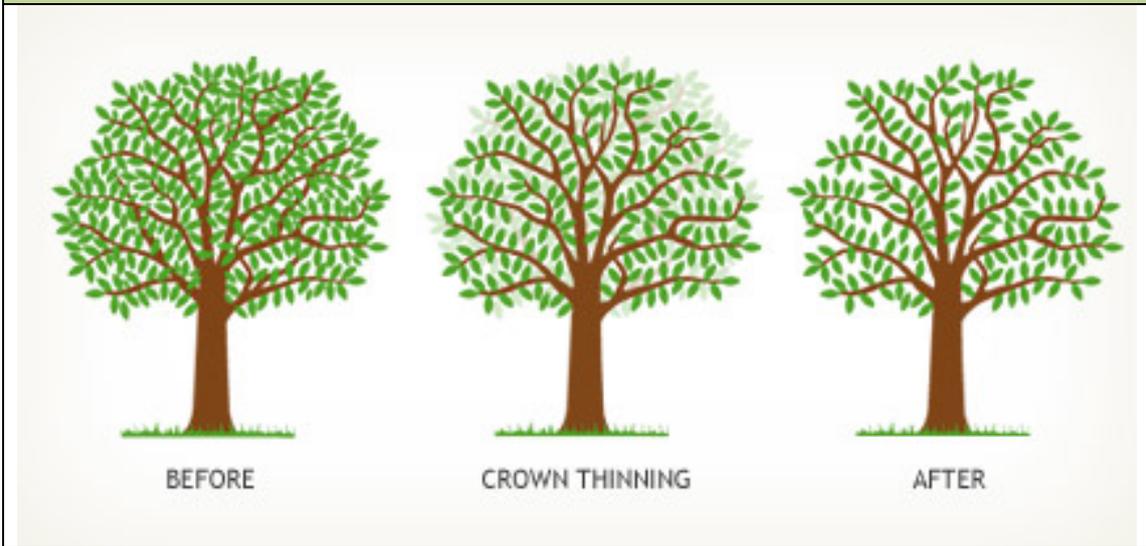
Crown lifting is:

Crown lifting is carried out to:

A good example of Crown Lifting



Crown Thinning



Crown thinning is:

Crown thinning is carried out to:

It generally does not exceed __ % of the tree canopy

A good example of Crown Thinning



Crown Reduction



Crown reduction is:

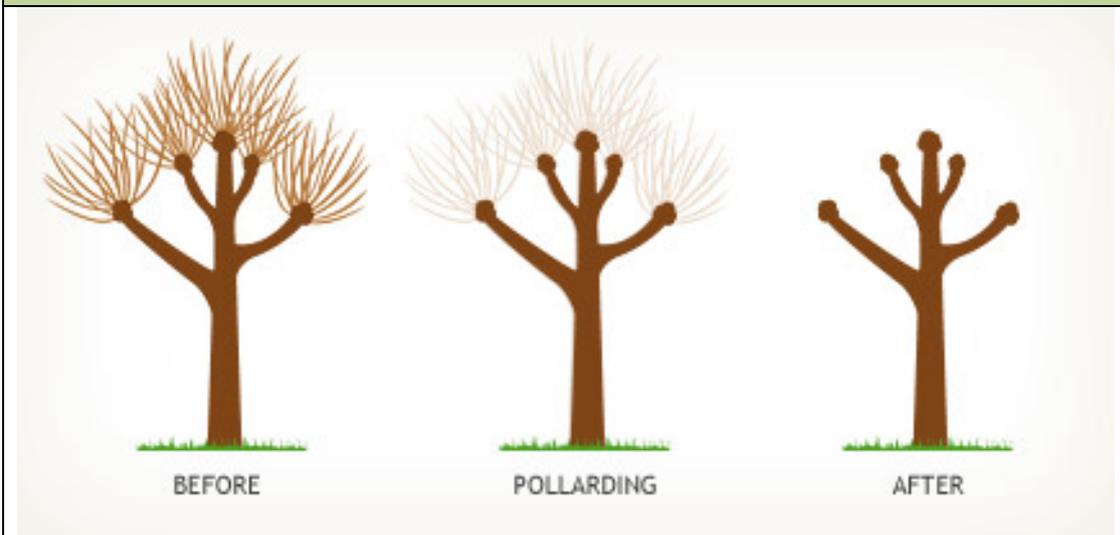
Crown reduction is carried out to:

The accepted 'rule' is that only $\frac{1}{3}$ rd of the branches are generally removed and topping cuts are NOT used

A good example of Crown Reduction



Pollarding



Pollarding is:

Pollarding is carried out to:

A good example of pollarding



Coppicing



Coppicing is:

Coppicing is carried out to:

After coppicing and subsequent re-growth



The additional precautions that may need to be taken whilst re-pollarding trees

There are a number of additional precautions that should be taken during re-pollarding operations, because of the restricted space for movement within the tree and the condition of the subject.

Pollarding - Single 'Knuckle'	Pollarding Multiple 'Knuckles'
	

In the box below state the additional safeguards which may be required.

1.

2.

3.

4. Other?

Measurement terms and how they are applied

It is important that the arborist understands basic measurement terms and how to apply them in practice.

If a specification exists for the 'job' it needs to state, precisely clearly and accurately, what is required to ensure that the desired results are achieved.

The measurement terms may include **(in the boxes below state what information needs to be provided)**:

- **for crown reduction operations**

- **for crown thinning operations**

The basic principles of target pruning and the effect on tree pruning operations

Target pruning, which is sometime referred to as 'natural target pruning' relies on the principle of pruning to branch collars or bark ridges.

Pruning cuts should always be made at a union or if necessary against the main stem; avoid leaving stubs, which can die back, allowing disease to enter and the formation of cavities.

Large branches should not be removed unless it is absolutely unavoidable. If they have to be removed the pruning wounds should be kept as small as possible, with the cuts as smooth as is practicable.

Cuts into live wood should be avoided when removing dead branches and stubs.

Where a branch collar is present the final cut should be just outside it.

Where there is no branch collar the cut should mirror the branch bark ridge.

In the box below state the principles of target pruning by completing the phrases.

Correct natural pruning:

- stimulates the tree's
- leaves the
- allows a complete doughnut of
- provides a protection

In the box below describe the problems that may result from incorrect pruning techniques being used.

Incorrect pruning may result in:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Example of the correct removal of a branch, leaving the branch ridge and collar intact.



Example of a reduction cut reducing a branch.

The importance of accurate and appropriate cuts when removing branch material

The accuracy and appropriateness of the cuts made to a tree will affect both the behaviour of the sections being removed, and the health of the sections being left. Accurate cuts will ensure that:

- **the resulting cut is in the place intended**
- **the section being removed goes in the intended direction**
- **control is maintained over the section being removed**
- **the work is carried out in an efficient manner**
- **there is no damage to the cutting system of the saw and the chain remains in place**
- **there is no splitting of the wood, the resulting cut is 'clean'**
- **the sections removed land in the drop zone, resulting in minimal damage.**

Inappropriate or inaccurate cuts may lead to the saw being trapped.



**The advantages and disadvantages of pruning tools
for selected pruning operations**

For the following pruning tools, state when they might be used, and give at least one advantage and one disadvantage for each.

Tool and use	Advantage	Disadvantage
<p>Use:</p> 		
<p>Use:</p> 		
<p>Use:</p> 		
<p>Use:</p> 		
<p>Use:</p> 		

Notes

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