

## Pruning & Thinning Poplar and Willow Poles

### Why manage poplar and willow trees?

Poplar and willow trees need regular maintenance if they are to provide long term protection to the land without becoming a nuisance. Pruning and appropriate management will lead to a beautiful and stable site with healthy, safe trees and a great grazing environment. A financial return from the timber when the trees are mature can provide an added incentive.

### What is the problem?

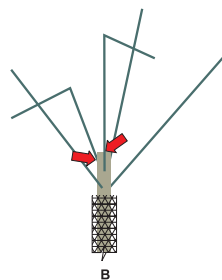
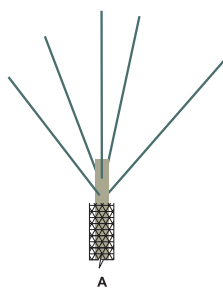
Many poplars and willows have been planted with the assumption that some will die. This is natural where summer droughts, cattle damage and possums are taken into account. Where most of the poles have survived and grown into trees, the result is often something close to a forest. Land owners often comment: *"These trees took me a lot of work and money to establish, and I am not about to chop them down."*

However, like any trees, when they are not managed properly, they do not perform as well as they should.

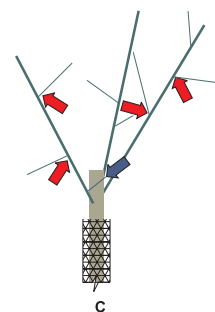
Heavy shade leads to bare ground underneath and this can lead to surface erosion and dirty run-off during rain-storms, fly-strike problems, and broken branches can create a mess. Mustering can also be slowed. If the trees are managed well, these effects can be minimised.



On the left is a well cared for tree with a dominant leader. On the right is an unpruned tree with many branches, which is more prone to wind damage.



← Secondary Leader prune   ← Leader prune



### YEAR ONE

After one years growth, where there is little possum or wind damage and a sheltered site multiple leaders will develop. Leave to develop until year three when selection can be made for the two or three dominant leaders

### YEAR TWO TO THREE

Broken and damaged leaders need to be removed. In exposed areas it is critical that pruning is not undertaken too early as the one or two leaders left could suffer wind or possum breakage. This would destroy the pruned form of the tree and it's potential to produce a quality butt log. In good conditions prune to 2 leaders.

### YEAR FOUR

The pole is now showing form and has been pruned to two leaders. Remove one leader and side prune the remaining leader. This last leader will now have good size and form, and should be able to stand reasonable winds without breaking off the top of the pole.

## How should mature trees be managed?

Assume the trees have not been pruned, and are used primarily for erosion control, not timber. Trees should be managed so they are kept healthy, with a good form, while maximising light penetration. They should also be able to provide fodder during droughts.

Older, unpruned trees, are difficult to manage. The main points to consider are:

- what else do you want to use the trees for - timber or pure erosion control?
- pruning does not have to be completed all at once
- poles can be harvested during pruning of the heavier limbs in winter. Removing these side limbs allows extra light to reach the grass beneath the trees
- pruning in late summer means the leaves can be used as drought fodder. The feed value for willow leaves is 65-75% dry matter digestibility, about the same as lucerne hay
- keep the stand healthy by removing all small and sick trees; cut these off at ground level and let the stock browse the regrowth
- clean up pruned limbs or branches so they don't wash into drains or culverts, as blocked culverts or bridges can be a disaster during a storm. Where branches cannot be removed or burnt they should be cut into firewood lengths to ensure they can wash through any structures.

On an open slope, a spacing of 10 metres by 10 metres for mature trees is enough to give maximum slope protection from earthflows or slips. Spacings of 15 metres by 15 metres are generally enough for slope protection.

In especially erodible areas such as gullies or deep earthflows, closer plantings have been made. With these closer plantings, discuss any thinning with your Regional Council Land Management Officer.

How should young trees be managed?

Young trees give the opportunity to prune for timber production at the same time as providing erosion control and fodder during droughts. Silviculture is

designed to keep trees healthy and in good shape.

The main points to consider are:

- begin pruning at year three or four, depending on the growth and exposure to winds. Prune at year three if the tree is growing well, or at year four if it is growing slowly or in an exposed area. Pruning is designed to progressively develop a dominant leader, a healthy tree, and finally timber
- poles usually sprout within 20cm of the top of the pole and have multiple leaders. Thin the leaders to a single leader by year five or six. Time this correctly because if thinning is done too early and severe wind damage follows, all the leaders could be lost
- the first pruning in a sheltered site reduces the leaders to two. In year five or six, when the dominant leader has taken over, prune back to one leader. In an exposed site reduce to three leaders at the first pruning, then two and finally to one
- two years after the first pruning, prune the lower branches and then every following year prune off a whorl of branches. This treatment will result in a tree with a straight form and a potential for timber use. Ensure there are plenty of branches to maximise growth
- continue removing the lowest whorl until at least six metres of clear wood develops. Each year check the trunk for regrowth and remove this.

### For further information

For further information on soil conservation, ask for the other titles in this series or contact Land Management Officers at the Hawke's Bay Regional Council for advice:

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