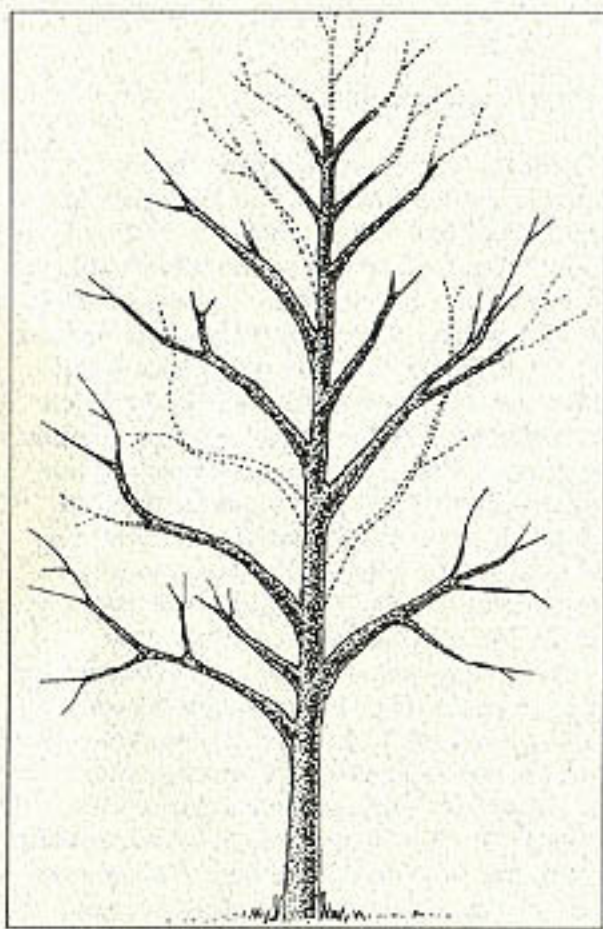




## Pruning trees and shrubs



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Pruning is a technique used to limit or train tree and shrub growth, improve appearance, compensate for root loss, influence flowering and fruiting, and remove damaged or diseased parts. It is most often used on ornamental trees and shrubs. In forestry, pruning can also improve the log quality of commercial timber and enhance seed cone production. Methods of pruning vary somewhat for different tree species and shrubs, and the choice of method depends on the purpose of pruning. Pruning can be stressful, with young trees and shrubs usually able to overcome pruning stress better than older trees and shrubs. For these reasons, care should be taken to prune trees and shrubs correctly.

### Pruning Methods

There are several types of pruning cuts. Heading is the cutting of a 1- to 2-year-old shoot back to a bud or smaller twig (Fig. 1). Usually, more than one lateral branch will try to assume dominance and these will have to be removed or pruned if apical dominance (a single leader) is to be maintained. A variation on heading is pinching (Fig. 2), which is the removal of the upper 2-5 cm of a growing conifer shoot. This can be done by hand or with a knife. Tip pruning is the selective removal of several shoot terminals (Fig. 3). Heading and its variations increase crown and branch density. Shearing is the cutting of all or most new shoots to alter shape, improve appearance, or limit growth on conifers or shrubs (Fig. 4). After shoots are pruned, many buds will be produced at each newly cut tip and branch density will increase. Shrubs can be sheared back as far as illustrated. Limbing or stubbing is the removal of unwanted and dead branches to the branch collar (Fig. 5). If branches are not pruned close enough to the branch collar, the remaining branch stub is an ideal site for decay organisms to enter the tree. When pruning cuts are made too close to the stem (flush

cut) the result is damage to the branch collar where the tree's natural healing tissue forms. The correct pruning method is to make three cuts, especially on large branches. The first cut is made a short distance from where the final cut is to be made on the underside of the branch (A), the second cut removes the branch (B), and the third cut removes the branch stub just above the branch collar (C). The proper location to cut a dead branch with a large branch collar is also shown. Thinning is the removal of lateral branches to reduce crown density (Fig. 6). Root pruning is the cutting of roots, and it is used when trees are transplanted or when root density needs to be increased for future transplanting. Corrective pruning is often done to improve the health and appearance of trees damaged by wind, snow, insects, and diseases. Branches that are not growing in an upright manner are susceptible to snow or wind damage. Corrective pruning can reduce damage caused by these stresses (Fig. 7A). Trees damaged by wind or snow can be pruned to grow into a more symmetrical shape (Fig. 7B), thus alleviating future problems.

### Pruning Scheduling

The best time of the year to prune trees and shrubs depends on the plant species, its condition, and the purpose of pruning. In most cases, corrective pruning of dead or weakened branches can be done at any time of the year because it will have little effect on the tree's growth. Removal of one or two small branches can also be done at any time of the year for the same reason. Heading, limbing, and thinning, however, should be done in the late fall or early winter when leaves have dropped. This prevents excessive bleeding, and the wounds will heal quickly when new growth begins in the spring. Pinching, tip pruning, and shearing should be done when the shoots are actively growing in the late spring and early summer. In the case of

coniferous trees, pruning should be completed before the new shoots have hardened off (lignified). Pinching, tip pruning, and shearing at this time will effectively control growth and maintain tree and shrub size.

### Pruning Tools

Equipment commonly used for pruning trees and shrubs includes secateurs, long-handled shears, hedge shears, pole pruners, pruning knives, pruning saws, and power saws. For root pruning of individual trees, shovels are effective; for rows of trees in nurseries, U-blades or undercutting blades are used. The equipment used will depend on the size of tree to be pruned and the type of pruning to be done.

### Pruning and Plant Health

While pruning is often used to remove insect- and disease-infected portions of the tree, pruning can also place a tree under stress and provide wounds suitable for insect and disease entry, especially when a tree has been severely pruned. Insects such as the bronze birch borer and the carpenterworm on hardwoods and the pitch moths on conifers may attack pruned trees. Cytospora canker and Diplodia shoot blight are two diseases that attack conifers through pruning wounds on otherwise healthy trees. The risk of infection by disease organisms can be reduced by sterilizing pruning equipment after use in pruning diseased trees to remove galls, cankers, and shoot blights.

In the past, pruning paint and other wound dressings were used in an attempt to prevent decay at pruning wounds, but their use is no longer recommended. Pruning paint and other dressings do not quicken the growth of callus tissue (the tissue produced by trees and shrubs to cover and seal off wounds),



nor do they prevent decay organisms and insects from entering the wounds.

Detailed pruning manuals are available at garden centers. They are illustrated with diagrams and photographs, and provide a more thorough discussion of pruning techniques. Proper safety equipment should always be worn when pruning.

Figure 1. Heading

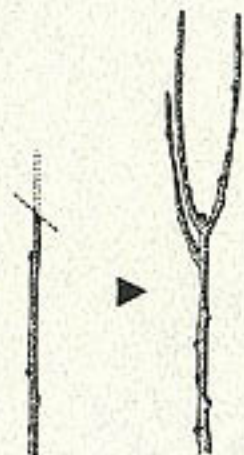


Figure 2. Pinching

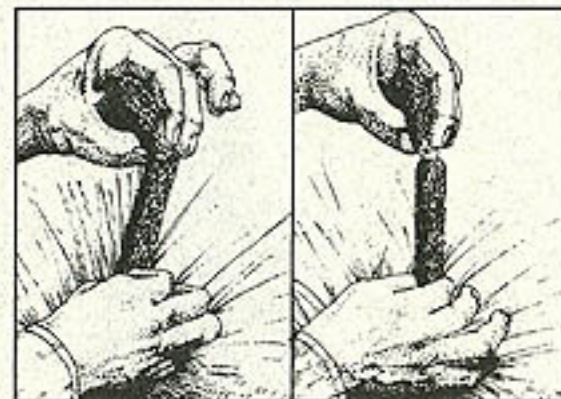


Figure 3. Tip pruning

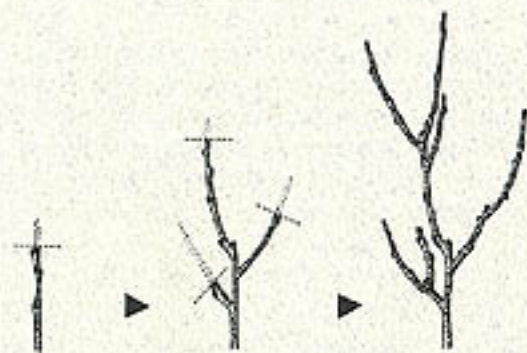
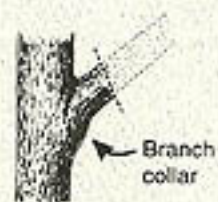


Figure 4. Shearing

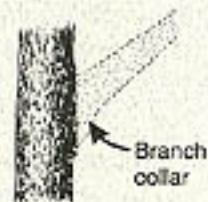


Figure 5. Limbing or stubbing

Wrong: too much stub is left after final cut. Wrong: final cut is too close to stem.



Correct: weight is removed and final cut is made just above branch collar.



Correct: dead branch is removed just above branch collar.



Figure 6. Thinning

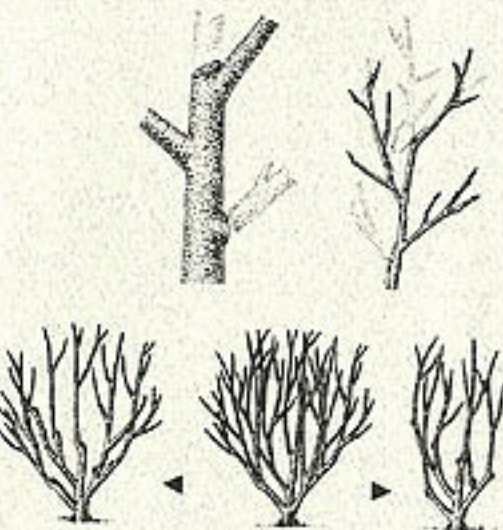


Figure 7. Corrective pruning



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Natural Resources Canada  
Canadian Forestry Service  
Northwest Region  
Northern Forestry Centre  
5320 - 122 Street  
Edmonton, Alberta T6H 3S5

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