# Careful Cutting

*Pruning 101: Back to the Basics*

*By Mark Chisholm*

Pruning is one of the least understood disciplines in arboriculture for a variety of reasons. First, many professionals and residential customers underestimate the importance of pruning and proper pruning techniques. Second, arboriculture is a complex, science-based industry. Consequently, arborists are always learning new pruning methods that may contradict previous practices—remaining current takes time and effort.

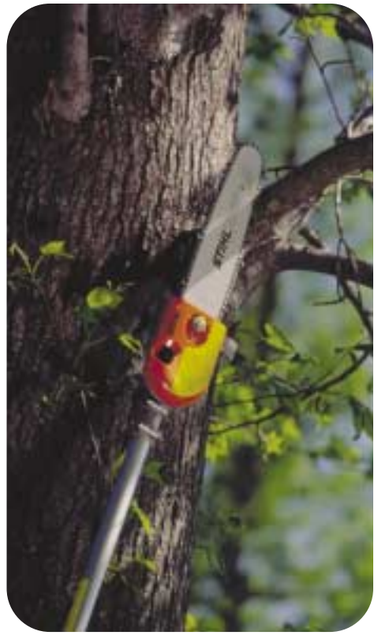
## Before You Start

The first step in effective pruning is proper tree identification. Once the tree's genus is determined, knowledge about hardiness, growth response, best time of year to prune and more can be considered. It is important to realize that even accurate pruning may have some negative impacts. Pruning may be necessary, but it still inflicts a wound to a tree's armor. Even so, the results of a proper cut are usually far better than one never placed.

Second, pruning must have a purpose. The most common reasons for pruning are: to increase personal safety, aesthetics, improve tree vitality, maintain size, clear objects, improve fruit/blossom production, raise the crown and reduce liability. The purpose, along with other factors, will determine the type and size of cuts needed.

A basic understanding of tree biology and physiology is crucial to proper pruning. The boundary that separates a tree trunk from a branch is known as the branch collar. The collar seals the pruning cut. If the collar is compromised by an improper cut or other wound, there is an increased chance of decay. Therefore, pruning cuts should be made as close to the collar as possible without harming it.


Above: Pruning cuts should be made as close to the branch collar as possible without harming it.
Below: The angle at which a live limb is cut will affect a tree's ability to seal.



## Making the Cut

The angle at which a live limb is cut will also affect a tree's ability to seal. An improper cut will leave a dead, angular nub or "dog's ear" protruding from the trunk. Dog's ears may prevent sealing, which again increases the chance of harm to the tree. A best practice is to make the finishing cut as close to the branch collar as possible without damaging it. It may sound complex, but the tree will usually show us where the cut should be made with little confusion.

Now that we've discussed basic pruning techniques, we'll look at why and what we should prune.

The most common practice in pruning is to remove the three "D's"—dead, diseased and dying limbs. These conditions are easily identified and are the easiest cuts to master. Other than removing deadwood, removing conflicting limbs may be the most beneficial to a tree's survival. Learning which live limbs to remove is more difficult since the process is complex and many variables must be considered.

For example, thinning cuts can damage some species of trees living in certain environments. Removing too many interior limbs in a mature hardwood may stress the tree and result in a "lion's tailing" effect. Lion's tailing is a term given to describe the look of a tree where all of the interior foliage is stripped, leaving foliage only at the ends of the limbs. It can also lead to a proliferation of re-growth or "water-sprouts"—small interior limbs that are unsightly and complicate a tree's future structure.

## Conditions to Consider

Another variable to consider is exposure to the sun. If a tree is thinned or loses a large limb on the south side, late-day sun would contact the bark of limbs and the trunk. In thin-barked trees, the sun can raise the temperature of the fluids beneath a tree's surface. After sunset the fluids can cool quickly, cracking and splitting the bark, resulting in "sunscald." Sunscald can cause decay and hollowing on the upper sides of limbs, which can become hazardous as they weaken. Removing the top of a mature tree (topping) can also cause this type of damage.

## Just the Beginning

In short, a live limb shouldn't be removed without careful consideration. Whenever we prune a tree, it carries the marks of our work for the length of its existence, and a misplaced or inappropriate cut may contribute to a tree's demise. What you do will have a lasting effect on your customer's living trees, so be sure to employ proper pruning techniques whenever possible!

These concepts are just the tip of the iceberg. There is a great deal more to learn about proper pruning. For more information on pruning techniques, refer to the American National Standards Institute's (ANSI) A300 Pruning Standards. Or contact the International Society of Arborculture (ISA) at 217-355-9411 (www.isa-arbor.com) or Tree Care Industry Association (TCIA) at 603-314-5380 (www.natlarb.com) for additional resources.

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