

# A Lesson in *Proper Shrub Pruning*

By Cass Turnbull

Adapted from presentation at TCI EXPO 2004.

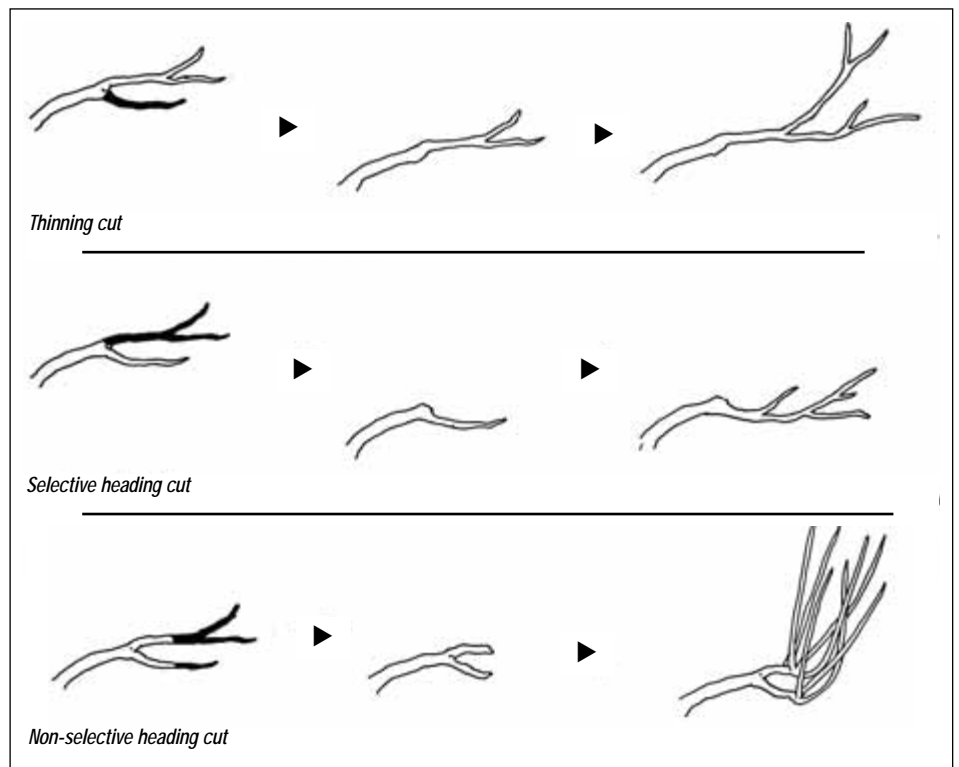
## Defining good pruning

Good pruning can be defined as “pruning that improves or maintains a plant’s long-term health, beauty and (in the case of trees) safety.” As with trees, shrub pruning is rarely done for the sake of the shrub itself. Pruning is done to please the landscape owner who is finding fault with the existing design. The landscaper is free to manipulate shrubs and trees by pruning, as long as the health and beauty (long term) of the plants is not degraded by doing so.

## Three kinds of cuts

It is important to know the three kinds of pruning cuts, their effect on plant health and their aesthetic results. Over the course of years the terminology for these cuts has changed, unfortunately, several times, causing confusion. I still prefer the terms I was taught, and will use them here.

The first kind of a cut is a “non-selective heading cut.” This cut shortens the length of a branch by cutting it back to no place in particular, or internodally. Non-selective heading cuts are the hardest on plant health and aesthetics. Examples of heading cuts are shearing of shrubs, topping trees, and heading used to train young plants to become bushier. This cut can cause die-back and the formation of unwanted stubs on shrubs, as well as trees. And, depending on the species, it could stimulate the growth of water sprouts. Water sprouts are the rapid-growing, unattractive, and numerous new shoots that are the common result of injury to plants, usually mal-pruning. Once stimulated into existence, water sprouts cannot be stopped by removing (pruning) them. Like Hydra, the many-headed snake that Hercules battled, every time a water sprout is cut (cut off completely or cut in half) three or more return



Each series shows the branch to be removed, just after removal, and next year's growth. Sketches by Kate Allen.

in its place. The prevention of water sprout formation should be a primary concern for arborists, as water sprouts ruin the aesthetics of plants, and lock the plant owner into a costly maintenance battle against their shrub. A battle that cannot be won.

The second type of cut is the “selective heading cut.” It is the right way to shorten a branch by cutting it back to a lateral of goodly size. This cut has also been called a “reduction cut” or a “drop crotch cut” on trees. Unfortunately, this cut has also been called a “thinning cut,” causing much confusion in the industry. If the remaining lateral is large enough, there will be no die-back and no water sprout response. The selective heading cut is also a general stress on a plant, though not as hard on health as a non-selective heading cut. Shrubs, far more than trees, can withstand overall size reduction pruning, although their response varies greatly according to their species.

The third kind of cut, the “thinning cut,”

removes a lateral branch by cutting it off where it joins the larger, parent stem. This cut is the easiest on the health of the plant. Thinning is used to remove lower limbs of shrubs (skirting, limbing-up). Numerous small thinning cuts can also be used throughout a shrub. A thinned-out shrub is less dense, though not smaller in size. Thinning is often used to highlight the good internal branch structure of those shrubs that have it.

## The pruning budget

When pruning trees or shrubs it is useful to think of them as having a pruning budget. Some plants, for example a cherry tree or a witch hazel, have a small pruning budget. If you prune the wrong way, or simply too much, they respond by sending out water sprouts as numerous as the hairs on a dog’s back. Other plants, like a camelilia or forsythia, have a large pruning budget. You can remove a lot of branches without stimulating re-growth, and if you do get regrowth, it rather quickly assumes

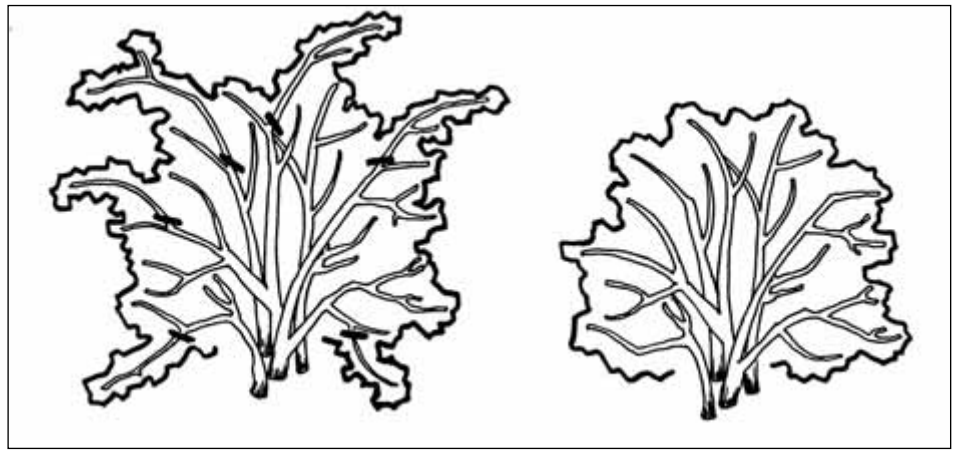
a natural look.

The pruning budget is made up of three components: the kind of the cut, (non-selective or selective heading, or thinning) the size of the cut, and the total amount of foliage removed. The concept of the pruning budget is useful when explaining the limits of pruning to customers. One can spend the pruning budget in any number of different ways, using a combination of skirting, thinning and reduction. But at a certain point the pruner must stop, since the limiting factor is the pruning budget. Exceed that budget and the plant will look worse, not better, in coming years.

### Mature vs. ultimate size

Another useful concept is the distinction between the “mature” and “ultimate” size of shrubs. The mature size of a plant is the size listed in plant encyclopedias or found on the plant tag. It represents the average size a plant will be in about 10 years. It is the minimum space needed for the shrub to look good in the landscape, and, given 21 years of pruning experience, I can attest that attempting to keep a shrub smaller than its mature size is, well, doomed to failure. They simply grow faster every year. Pruning is not like cutting hair. With dutiful, regular cutting one can keep one’s hair at any given length. But cutting plants can cause them to increase their growth rate, as well as splitting the growth into more and more (thicker and thicker) branches. If a person’s hair worked like a plant, cutting your hair to ear length would stimulate it to bush out at the ends and re-grow to shoulder length over night.

After reaching its mature size, a tree or shrub does not stop growing. It simply slows down, a little more every year, until it reaches its ultimate size, which is usually about twice the mature size. Having reached its ultimate size, a plant stops growing taller although, like many people I know; it may continue to grow wider. In general, shrubs cannot be kept beneath their mature size, but some kinds (the cane-growers and the mounding-habit shrubs) can be pruned to keep them within their



*Grab-and-snip, at locations marked by black lines, cleans and reduces the size of a “mounding habit” plant. Sketch by Glen Grantham.*

mature size range, thus preventing them from growing to their ultimate size.

### Three plant habits

Dividing shrubs according to their natural shape or “habit” can help new gardeners and arborists to decide how to best prune them. PlantAmnesty lists common landscape plants according to these three growing habits for many regions of the country, including Hawaii and low desert Arizona. These are available on the PlantAmnesty Web site, free of charge ([www.plantamnesty.org](http://www.plantamnesty.org)).

### Cane growers

Cane growers are shrubs that readily renew themselves by sending up replacement canes from the base of the shrub. Examples are forsythias, Oregon grape, nandina, panex, croton and ti. These plants can be kept in their mature height range almost indefinitely by cutting out some of the largest, tallest canes, to ground level or an inch or two above, as needed. They can also be thinned-out and made to look less oppressive by this pruning this way as well.

As needed, cane-growers can also be skirted, selectively thinned, or left alone

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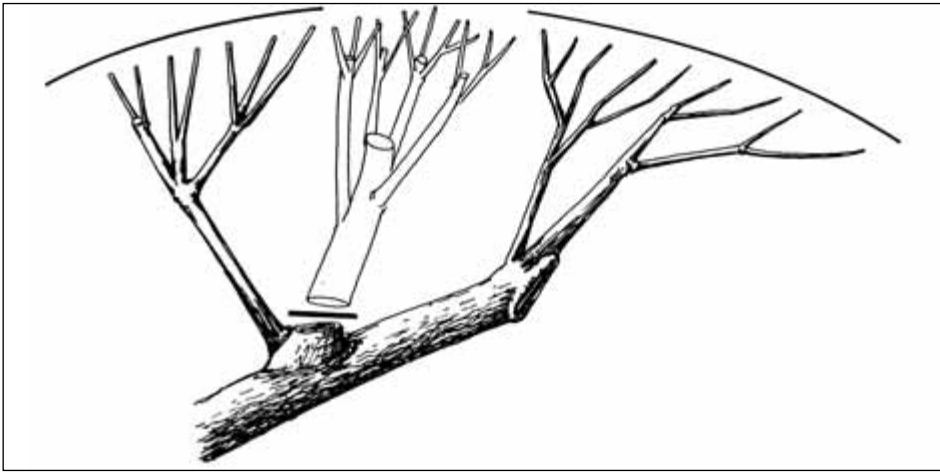
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Rehabilitative pruning. Sketch by Glen Grantham.

entirely. Cane-growers are extremely tough plants and the main concern when pruning them is whether or not they are being improved aesthetically. Up to a third of the foliage can easily be removed; their size can be reduced to about one quarter or more of what it would be otherwise. In

some instances, even large, non-selective heading cuts can be utilized to force new growth lower inside the plant, (a leggy nandina for example) or to shorten the plant (staggered heading cuts on an Oregon grape). However, over-all, heading should be avoided on those cane-growers that

have a natural fountain shape, as it would subvert their natural beauty. (forsythia, kerria, bamboo)

### Mounding-habit shrubs

Mounding-habit shrubs are the easiest to tidy-up and reduce in over-all size (to about one quarter smaller) using the selective-heading cut. Mounding habit shrubs either have small leaves or relatively herbaceous (soft) wood. Examples are spiraea, burning bush (*E. alata*), evergreen azalea, aucuba, escallonia, and choisya.

The selective pruning process requires that branches are selected in order of the longest or most interfering branch first and hand-pruned it back, cutting the branch off where it meets up with a stem inside the shrub. In the case of very thin branches (like a spiraea) simply cut to a point well below the surface where a bud will break, i.e. a non-selective heading cut. This process, called "grab-and-snip" by some grounds crews, reduces the size of shrubs without creating a water-sprout rebound. Since this is selective pruning, it can be done anytime of year without eliminating the flower display of the shrub. It maintains the natural shape and texture of the plant. It allows light into the shrub, ensuring green branches to cut back to in the future. And, although it takes longer to prune an individual shrub selectively than it does to shear it, the grab-and-snip method only needs to be done once every few years, instead of thrice annually (as with most shearing). Selective pruning is therefore a cheaper way to prune, than shearing. This fact is difficult for typical grounds crews to accept. It is true never-the-less.

In general, one third of the crown of a mounding-habit plant can be removed, and 90 percent of the cuts will be selective heading. If the occasion requires it, alternate methods of pruning can be used. A mounding-habit shrub can be skirted up to allow some one to walk by it. Or some shrubs can be thinned effectively, if to do so will look good. For example a burning bush or an evergreen azalea can be thinned to accentuate their good branch pattern.

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There is usually more than one right way to prune a shrub, as there is more than one wrong way. And it can't be stressed enough that most plants don't need to be pruned to bloom and look their best. If there is nothing wrong with the shrub in question, and the customer isn't complaining, leaving it alone is often the cheapest and best way to care for it.

### Tree-like shrubs

The third category of shrubs I call "tree-like," not because they are large or single-trunked but because they have woodier and more intricate branch structures than the other two categories. Examples are witch hazel, camellia, and pieris. These are the ones that a light hand in pruning is needed. Avoid all non-selective heading, and use relatively few selective heading cuts. Most pruning to be done will utilize true thinning cuts, and most of that is deadwooding. Overall size reduction is discouraged, in that such pruning on these plants is more likely to result in either water sprouts (witch hazels, double file viburnum), or, if not that, it can subvert the key feature of these plants—their naturally beautiful branch structure (rhododendrons, etc.). Therefore, the pruning budget is much smaller, as an average take of less than 1/5 of the live crown. Some shrubs take heavier thinning (pines, thread cypress, camellias) others take far less (witch hazel, double file viburnum, cotoneaster).

When planning a landscape, the tree-like shrubs should be allocated all the room they will ever need to reach their ultimate size. The other two types of shrubs can more readily be "massed" (which is to say, over-planted) without having the landscape self-destruct in 10 years.

### The three great secrets

Almost everything about pruning is counter-intuitive. In classes I often tell people the secrets of pruning, and they don't want those secrets, they want the other secrets. But the things that homeowners want pruning to do are poorly achieved by doing it (disease control, size restriction). However, pruning (when

combined with other landscape management solutions) can work wonders to restore order and beauty to gardens that no longer please. Unfortunately, because they are not understood, they are a hard sell to both the novice pruner and the average homeowner.

The three secrets to pruning are: 1) Remove all of the deadwood. Do it first and do it always. 2) Remove some lower limbs (not too many). This adds an important bit of definition, relieves crowding and the lowest limbs are often the ones that head out over pathways, etc. 3) Site plants to allow for mature size.

To this list I would add the fourth great secret – know when to stop pruning. The true test of good pruning is not "do I like how it looks now, just as I've finished pruning." The test of pruning is "Will I like the results of this pruning next year, and in future years as well?"

### Rehabilitative pruning

Mal-pruning of shrubbery is as common as mal-pruning (topping) of trees was three decades ago. The greatest challenge to the green industry in the coming decades is to establish plant maintenance as a skilled profession, (We are hired because of what we know) rather than accepting a (lesser paid and lesser respected) role as "non-professional labor" (those who are given instructions by the homeowners).

I would estimate that 80 percent of the pruning done by homeowners and professionals isn't really pruning at all, but just cutting. The three most common forms of shrub mal-pruning are shearing, over-thinning, and general non-selective heading. According to the definition of good pruning above, mal-pruning works against the natural habit of the plant, it degrades the health (as evidenced by increasing deadwood, such as stubs and die-back of branch ends), decreasing the aesthetic quality of shrubs,



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(reducing or eliminating the flower show, destroying branch structure and taper, and stimulating water sprout production, which is not only untidy but also results in increasingly high maintenance.)

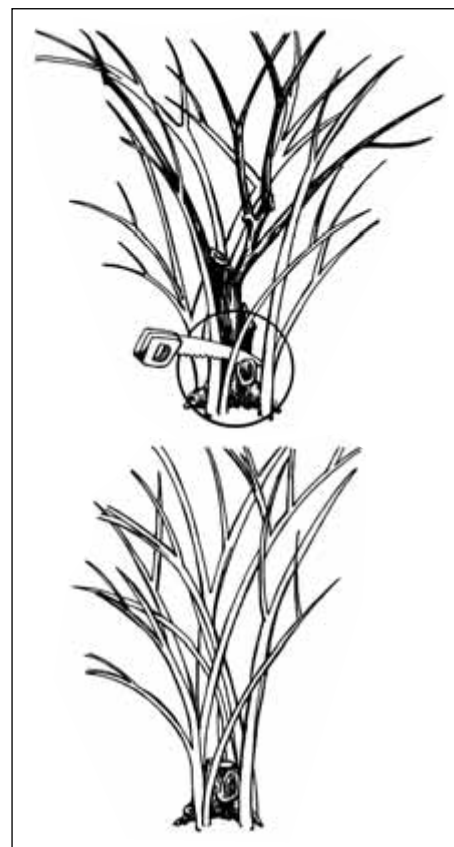
Unlike tree topping, there are many instances when shearing is an appropriate way to prune shrubs (when used as formal hedges, real topiary, and as the lower story in Japanese style gardens). Furthermore, unlike tree topping, sheared shrubbery is often considered attractive by the homeowner. This makes proper selective pruning a hard sell indeed.

Most plants can be brought back to their natural shape with rehabilitative pruning. Most, in fact, will re-achieve their natural form if left unpruned long enough. The skilled pruner can speed up the process though. Most rehabilitative pruning consists of thinning and waiting. Cane growers and mounding habit shrubs will return to a natural shape the soonest. Previously headed canes are removed to the ground; headed branches are cut back to more-natural looking laterals.

Tree-like shrubs are more difficult to rehabilitate. Often the water sprouts must be left alone long enough that they turn back into nicely arching branches with laterals. This can take many years, and the customer is often unwilling to look at the unsightly plant that long.

### Radical renovation

Many shrubs can be returned to natural form by cutting them to the ground, or to a low framework. This is usually done in the spring and it is only appropriate for healthy plants. It can take several years for the plant to re-assume its natural form. And, it is rather frightening to behold. I call this hard cutting back of previously mal-pruned shrubs "radical renovation." It is used most successfully with those plants in the cane-grower category, though it can be used with many of the other shrubs as well. But like surgery, radical renovation is a calculated risk. Serious harm is done to a plant in order to remedy a bad situation.



Pruning for cane growers. Sketch by Glen Grantham.

### Other solutions to overgrown gardens

Pruning is only one tool in the arborist or landscaper's tool kit. Landscape renovation is an integrated discipline which employs many skills and principles that cannot be covered adequately here. Activities can include: enlarging beds, complete removal of some plants, transplanting shrubs to better locations, and the addition of lower story plantings. The more one knows about what can and should be done to improve a landscape, the more valuable we become to our clients.

*Cass Turnbull lives in Seattle, Wash., is a professional landscaper, certified arborist, teacher and writer. She worked with the Seattle Parks Department landscape crew for 11 years and has owned her own landscaping business for 18 years. She founded the non-profit organization, PlantAmnesty, whose mission is to promote good pruning, and has written two books, The Complete Guide to Landscape Design, Renovation and Maintenance, and Cass Turnbull's Guide to Pruning, published last year. ⚡*