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WINTER HOURS

7:00 am to 4:30 pm Monday through Friday
Closed Weekends and Holidays

UPCOMING EVENTS

MARCH 12-13

11th Annual High on the Desert Gardening & Landscaping Conference

Sponsored by the Cochise County Master Gardeners and the University of Arizona Cooperative Extension. Buena High School, Sierra Vista, AZ. Information: Contact the Extension office at 520.458.8278 ext 2141

MARCH 12-14

Kingman Home and Garden Expo

Sponsored by the Mohave County Fair Association/Mohave County Fairgrounds, Kingman, AZ. Information: Call 928.753.2636

MARCH 12-14

Spring Plant Sale

Tohono Chul Park, Tucson, AZ
Information: 520.742.6455

MARCH 13-28

Spring Landscaping Festival & Plant Sale

Boyce Thompson Arboretum, Superior AZ
Information: Contact 520.689.2811

MARCH 17-23

San Francisco Garden Show

Cow Palace, San Francisco, CA
Information: Call 415.750.5441

MARCH 20-21

Spring Plant Sale Festival

Desert Botanical Garden, Phoenix, AZ
Information: Call 480.941.1225

MARCH 27

Spring in the Desert Plant Sale

Community College of Southern Nevada and the University of Nevada Reno Co-Op Extension. CCSN West Charleston Campus Garden Center. Information: Contact Kevin Potts at 702.651.5052

APRIL 23-25

FloraFest 2004 Spring Plant Sale

Chihuahuan Desert Gardens, University of Texas—El Paso, El Paso, TX
Information: Call 915.747.5565

MAY 9-12

Western Chapter ISA 2004 Annual Meeting

Konocti Harbor Resort and Spa, Clear Lake, CA. Information: Contact the WC ISA at 530.892.1118 or rtate@wcisa.net

MAY 21

13th Annual Desert Horticulture Conference

Tucson Convention Center, Tucson, AZ
Information: Contact Jack Kelly at 520.626.5161

March/April 2004

BEST PRUNING PRACTICES

Pruning is certainly an art. It requires considerable skill and often a great deal of strength and untold bravery to prune a tree. Shrubs might be a bit easier to prune but it is still hard work. We should all respect the work of an arborist. Unfortunately, one important ingredient is sometimes left out of the mix. That element is a sound knowledge of pruning. To prune trees without understanding how plants grow and the consequences of our actions may lead to a disastrous outcome.

Experienced arborists study the response of trees and shrubs following pruning events such as limb removal and shearing. With keen observation, one can predict the outcome of each activity with fairly reasonable accuracy. Some tree technicians even write a date on a pruning cut with an indelible marker so that they can “time” the progress of the closure. It is amazing to watch the work of a master arborist armed with sharp intellect, as well as instruments, helping Mother Nature do her work.

Unfortunately, not all landscape personnel have training in arboriculture, defined as the care of woody plant materials. Too often, trees and shrubs are pruned when no action is really required. Others are disfigured by incorrect pruning practices. We see this happen nearly everyday, from freeway plantings to residences. Trees that have been humbled by a topping operation, or those neglected with limbs left too crowded, or mutilated shrubs clipped into grotesque, unnatural forms. This is the work of the untrained.

Before we look at a few of the Best Pruning Practices, perhaps it would be a good idea to note some poor pruning practices.

Topping Trees

Call it what you want: topping, pollarding, hatracking, dehorning or just plain tree butchery, this practice is not acceptable. More commonly found on mature shade trees like elms and mulberries in older neighborhoods, this insidious practice should be stopped. Topping is defined as the pruning of large branches, cutting them back without regard to the location of the cut. This procedure is often done in an attempt to control the height or width of a tree. The result is a mass of new growth arising close to where the cut was created, appearing much like a contorted witch's broom. The new shoots emerge from latent buds held in suspended animation just below the surface of the bark. These buds exist to rebuild the tree in case of a catastrophic event such as fire, or the loss of a limb due to wind or damage from an animal.

Technically, we would be able to categorize topping as damage from an animal, man. The resultant growth is very weakly attached and may break easily in windstorms. As most of the food producing foliage has been removed from the tree, considerable storage reserves are depleted in the production of new shoots. The density and awkward arrangement of the branches leaves the tree disfigured, weakened and abnormal looking. This is not to mention the fact that a huge

wound has been created that closes slowly, if at all. As a rule, do not top trees unless there is a serious problem such as disease, insect or lightning damage or breakage from wind that requires the equivalent of amputation.

Lion Tailing

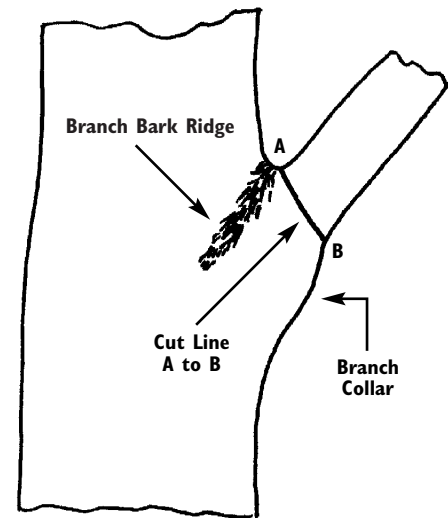
This practice is almost as injurious as topping. It is defined as the stripping out of all interior foliage, leaving only a tuft of foliage on the end of the branch, much like a lion's tail appears. The result of this procedure is the weakening of the limb. These shoots once provided nutrition directly to the limb, aiding branch development and increased girth. The loss of these shoots along the length of the branch results in a thinner branch, and an increase in weight at the end of the branch placing a great deal of stress on the branch. Lion tailed branches often fail in the event of heavy wind, ice or snow. This is a common occurrence on trees like mesquite and other fast growing trees.

So if we avoid these two misguided procedures, will everything else be perfect in the world of tree care? Well, probably not, but many problems would simply cease to exist. Here are some of the Best Pruning Practices.

Natural Target Pruning

Most professional arborists acknowledge natural target pruning as the best point to remove a limb. Dr. Alex Shigo, a famed plant pathologist who worked for the U.S. Forest Service, first

developed the concept. He observed that trees in the forest shed branches that are no longer functional. This occurs at a specific point of attachment to the trunk. The point at which this abscission or shedding occurs allows for rapid wound closure and limited or negative advance of decay organisms into the parent trunk. Dr. Shigo observed that the natural target area is just outside the branch bark ridge at the top of the limb and the branch collar, located at the bottom of the limb. This research reversed all previous thinking that cutting the branch flush with the trunk was the best practice. This is not to say that stubs should be left on a tree. These are likely locations for disease and insect entry as well. Natural target pruning revolutionized tree care, and everyone should adopt this practice.



Pruning Paints

Once flush cuts were abandoned, it was determined that pruning paints were no longer necessary to "seal" pruning wounds. Most arborists

today have adopted a "no paint" policy when it comes to treating pruning cuts. With the use of natural target pruning, wound closure is rapid, eliminating the need for paint.

Lowest Permanent Branch

As young trees are trained we should recognize where the lowest permanent branch will be on the tree. All branches are permanently affixed for life at the same height on a trunk, so several factors should be considered to determine the lowest branch. The species of tree often dictates this decision. For example, many conifers, like Cypress or Pines, look exquisite with a whorl of boughs near ground level. If there is ample room, this appears perfectly natural and is considered healthy for the tree. On the other hand, if there is a need for clearance under the tree, then the lowest branch may be at a point considerably higher up on the trunk. For pedestrian traffic, this might be 6 or 7 feet from ground level. For vehicular traffic, the height might be 14 feet or more. For this reason low branching species would not be well suited for high traffic sites. The same could be said for multiple branched trees like palo verdes or mesquite trees. Considering that these species really prefer to remain more shrub-like, determining the lowest permanent branch becomes more difficult. Regardless, the concept should be addressed early in the formative years of tree training.

Temporary Branches

All the branches that arise from below the permanent branch are considered temporary branches. These limbs are very important, especially to juvenile trees. By allowing the lower branches to remain temporarily, they provide

nutrition directly to the trunk, which aids in the increase of trunk girth. As an additional benefit, these branches shade the trunk reducing the incidence of sunscald (a potential entry point for insects and disease) and also help to deter vandalism.

Retain the Natural Shape

For some reason, humans tend to think of trees looking natural if they have a rounded crown on a long, bare trunk. You might picture a gumdrop on a stick. While many trees might naturally grow this way, numerous others do not. As mentioned previously, many trees have multiple trunks and appear perfectly normal with several or more trunks. Most desert species fall into this category, appearing as low, squat specimens. This would include mesquites, palo verdes, desert willows and chaste trees. Single trunk trees include pistache, ash and many oaks. It is important to learn the natural shape of tree species so that when pruned, they retain a normal appearance. This holds true for shrubs as well.

Select Strong Scaffold Branches

Regardless of species, multi or single trunk, all trees should be trained to develop a strong scaffold branch system. These branches form the basic framework from which all the rest of the canopy develops. In single trunk trees, the lowest permanent branch starts the scaffold branches. Each of the branches above this one should have some space between them. The distance varies from species to species, but as a rule it might be 12 to 24 inches. In addition, the placement of those branches should be staggered so that there is good radial spacing as well. Picture the steps on a spiral staircase. For multi-trunked trees or

low branches species, the development of good scaffold branches is equally important. It is essential to provide ample space between branches so that as the trunks enlarge in diameter, they do not push against one another. If smaller limbs are pruned out to allow for proper trunk development, the possibility of failure is reduced greatly. Also be sure to inspect the angle of attachment on low-branched species. Prune out those limbs that have very narrow crotches, as these too may pose problems as they increase in girth.

Thin Canopies to Reduce Wind Resistance

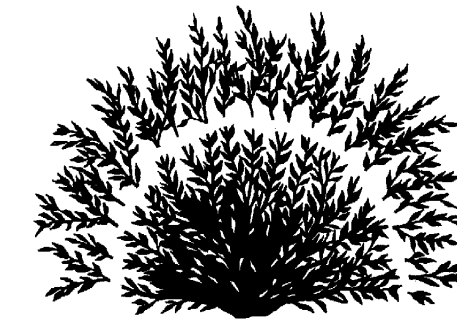
As trees mature, especially in urban landscapes, the upper part of the tree canopy may become quite dense. This growth phenomenon is often enhanced by ample irrigation and nutrition. As a result, many trees become so dense that the canopy "outgrows" the root system. These trees are vulnerable to wind throw, in which the entire root system is tipped out of the ground by strong winds. This is devastating in a landscape, particularly if considerable time and effort, not to mention money, have been invested in the growth of the tree.

Many arborists attempt to balance the shoot to root ratio by removing some of the top growth when needed. Thinning a tree reduces the "wind sail" effect of the canopy. There are several guiding rules for thinning. First, attempt to keep the majority of the foliage confined to the lower half of the tree. Or in other words, do not create a top-heavy tree. In addition, do not remove more than 20 to 25 % of the foliage in any one pruning session. This severely weakens the tree if more than this amount is removed. Pruning less is often better for the health of the tree.

Thinning a tree consists of removing limbs that are not essential to the scaffold branch concept, like those that cross back into the interior of the canopy or branches that are rubbing on one another. In arborist lingo, this would be known as crown cleaning. In addition, canopies may be further thinned by the selective removal of outer lateral branches. These are pruned back to a secondary branch that is large enough to take the role of the limb removed. This sounds complicated, but it's not really. With a little practice, trees may be quickly thinned allowing better wind penetration. Just remember that well maintained trees do not have to appear as if they have been pruned. That would be the highest compliment you could pay to an arborist (or a tree for that matter).

How About Pruning Shrubs?

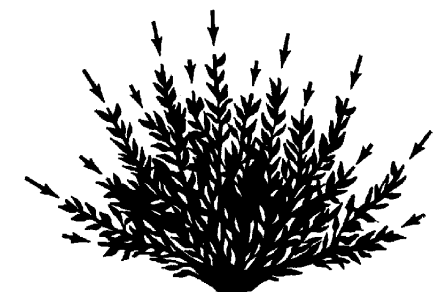
This is likely the most misunderstood area of landscape maintenance. For some reason, many landscapers believe it is their rightful duty to prune shrubs into formal shapes like boxes, globes and flattops. Of course, part of the blame must be placed on landscape designers who place shrubs too close together. Come on, let's give plants



Step One: Use hand pruners to cut back branches and stems, creating a rough globe shape.

some space.

But formal pruning for the most part is abnormal, especially for desert adapted plant materials like Texas Rangers and Cassias. We should all adopt informal pruning practices. The late Eric Johnson had a great method for pruning shrubs, called the Two-Step Naturalistic Approach. He recommended pruning the outer canopy of the shrub to create a rough, rounded globe shape. This reduces the size, perhaps by one-third, and the density of the shrub. Then every other large branch is cut back to the first "V" crotch in the interior of the canopy. This reduces the overall height of the shrub. By varying the length of the cuts randomly, the overall appearance is very natural looking. This works great with creosote, Texas Rangers, Cassias and many other shrubs. An alternative method is known as Rejuvenation Pruning. In this procedure a shrub is reduced in height and width by pruning very hard, to near ground level. It works well on overgrown shrubs or those that may have been damaged by cold, wind or animal damage. It appears a bit unsightly at first, but the established root system allows for rapid recovering and regrowth.



Step Two: cut every other branch back to the first "V." Vary length of cuts randomly from 6 to 9 inches long.

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