



Prune It Right!

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In general:

- Trees are a long term, and very valuable investment, both for the pleasure they provide, and for their financial value.
- Think ahead as you prune, to next year, three years and five or more.
- An adherence to long-term developmental pruning gives wonderful aesthetic rewards.
- Keep in mind the natural growth habits of the tree.
- Shrubs are small trees, trees are large shrubs; the same pruning techniques apply to both.

When to prune:

- Light pruning can be performed throughout the year.
- Heavier pruning should occur in the dormant season, after leaf drop.
- Desert trees can handle pruning in warmer weather better than can non-desert trees.
- Be careful in summer, not to open a hole in the foliage that lets the mid to late-day sun into a spot that was previously heavily shaded, especially for thin-barked trees.

How much to prune:

- General rule of thumb: don't remove more than 25% of the trees foliage in one year.
- Younger trees (if vigorously growing) can handle slightly more than 25%, but only if needed.
- As trees grow older, pruning amounts should reduce over time.
- Old trees (20-30+ years old) should have pruning amounts minimized to 5-10% or less.
- Every cut is a wound. Removing branches (foliage) removes energy sources (leaves). Less is often better!

The 3 types of pruning cuts:

1. Remove a branch entirely.
 - Look for the branch collar and branch/bark ridge where the branch is attached to the trunk, and make the final cut *just outside* of both, leaving the collar and ridge *intact*.
 - The branch collar is a swell of tissue, usually most prominent on the bottom and sides of the base of a branch.
 - The branch/bark ridge is a *δ*splashing up δ of bark on the topside of where the branch meets another branch or the trunk. It looks like a little wave.
 - Branch collars and ridges vary greatly from species to species, from one branch to another, and even varies from one side of the branch to the other. Look for indicators to its presence and location.
2. Remove a branch back to a lateral branch that's growing off of it.
 - The secondary branch that's growing off the side of the branch needs to be at least 1/3 of the diameter of the branch being cut back.
 - If the secondary branch is too small (less than 1/3), the branch will die back further because the small branch is not strong enough to take the leadership role.
3. Pinch back a bud on the growing tip or cut back a tiny branch to a side bud.
 - This type of pruning is especially good in training young trees.
 - Removing the tip stops a branch in its tracks, and it takes a while to start growing again.
 - If one branch is tip-pruned and another not, the tree will send most of its growth-energy into the branch that's intact, and it will grow much quicker compared to the one that's been tip-pruned.
 - Tip pruning is great for influencing future growth, without removing much foliage!

What to prune:

- Remove dead and dying branches.
- Remove rubbing branches and branches that cross or will cross in the future.
- Remove suckers (straight, up-right, fast growing shoots from the base of the tree).
- Remove water-sprouts (like suckers, but originate from the trunk or branches).
 - A tree that has been pruned too much will often send up many water-sprouts. If this is the case, remove about 1/2 and pinch-cut the rest.

Structural pruning:

- Branches should have space to grow. Allow 6 inches to 2 feet vertically between permanent branches, depending on the mature size of the tree (6" for small trees, 2' for big ones)
- Branches should radiate out in all directions around the trunk.
- Watch out for narrow (weak) crotches! Remove them, preferable while they are small.
 - Weak crotches can occur between 2 branches, or between a branch and trunk. They are characterized by a narrow angle of attachment (a narrow θ)
 - Wider angles of attachment (a wider θ) are much preferred!
 - In a weak crotch, bark becomes pinched between two branches, or between a branch and a trunk. This prevents the tissue from continuing to grow together and acts like a partial cut at the top of the connection.
 - If not removed, a weak crotch can split and rip a tree, leaving a huge and devastating wound
 - Different species have different tolerances to narrow crotches. For instance, the same angle of weak crotch is less likely to fail in an Ash tree than in a Mesquite.

The Special Needs of Young Trees:

- Good, proactive pruning has its greatest impact in young trees. The goal is to develop good structure that can greatly reduce pruning and potential problems later in life.
- Young trees often come from the nursery with very poor form or topped and/or stripped of branches along the trunk(s).
- Think of branches in young, structurally challenged trees as permanent or temporary:
 - Permanent branches will remain throughout the life of the tree.
 - Temporary branches are serving a purpose right now, but will eventually be removed.
- Small branches attached to the lower trunk(s) aid the tree greatly in youth:
 - They protect from sunburn
 - They directly strengthen the trunk
 - If none exist at first, and then sprout out, leave them.
 - Such small branches along the trunk are temporary.
 - Pinch them back occasionally, to keep them from getting too big as the trunk grows strong.
 - Remove them eventually, usually after two to three years. Don't let them get too big.
 - Remove a few each year, starting lower on the trunk the first year and moving up each year after that.
- Trees that are topped at the nursery need to have structure addressed:
 - A topped young tree responds by putting out many new shoots (branches).
 - They crowd one another and are likely to be full of narrow (weak) crotches.
 - Each year, remove some of them. But don't prune too much off in one year!
 - Choose branches for removal that are growing between other branches or this has the greatest positive impact, giving branches that remain on both sides room to grow.
 - Choose branches to keep that have good spacing and wide angles of attachment between them.
 - Such correctional pruning often takes several (3-4) years to achieve.
 - After choosing which branches are permanent, pinch back the temporary branches you can't prune this year or remember, you don't want to prune too much! This slows the temporary branches down, and the permanent ones grow *much* more quickly in comparison!

Making the Cut – Tools and How to Use Them:

- Use good quality hand pruners. You get what you pay for!
 - Use by-pass type (scissor action) and not anvil type (blade on flat anvil) pruners.
 - Keep the blade sharp and clean, and use small amounts of lubricant to keep the cutting motion easy.
 - Use hand pruners only for small cuts that the tool can easily handle.
- For larger cuts, use a good quality hand saw ó don't use loppers:
 - Keep the saw clean and sharp, and don't let it touch the dirt.
 - Rotate the saw a little as you make the cut ó it's so much easier.
 - Loppers are great for chopping branches to fit in trash cans ó don't use them for final cuts in the tree.
- Be very careful with chainsaws:
 - Keep your face and body away from the throw of the chainsaw (in-line with the blade).
 - If you need a chainsaw to make a cut, you probably waited too long.
- Use the 3-cut method for removing branches that are hard to handle:
 - This method removes most of the weight of a heavy branch before making the final cut.
 - Make the 1st cut on the under-side of the branch, about (almost) half-way through, 6-12 inches out from the position of the final cut. This is the undercut.
 - Make the 2nd cut about 1-6 inches further out the branch than the undercut ó shorter distance on smaller branches, further on larger branches.
 - These two cuts will drop most of the weight of the limb.
 - Make the final cut with just a small portion of the weight remaining.
 - The 3-cut method keeps branches from tearing the collar, or ripping down the trunk!

Other Important Points:

- Pruning paints and sealers are a waste of time and money, are ugly, and may inhibit natural wound closure.
- Remove the turf from the base of trees, to a minimum diameter of 3 feet. Turfgrass is a very heavy competitor for water, air and nutrients. Other plants (perennials, annuals, etc) may be planted in place of the grass. The removal of this turf will greatly enhance tree vitality, and prevent mower and weed-eater damage.
- Consider using an organic mulch 2 ó 4ö deep around the base of non-desert trees. Organic mulches greatly improve soils and tree health. Do not allow it to pile it up against the trunk of a tree.
- Watch out for girdling (encircling) roots!
 - These are caused by being in a nursery container too long.
 - The root ball should be cut with vertical slices at planting time.
 - Wiggle the trunk of the tree before you buy it. There could be girdling roots already, from when it was in a smaller nursery container.
 - Girdling roots slowly kills trees or causes them to fall over!

Shrubs:

- Treat shrubs much as you would small trees. They are both woody perennials.
- When maintaining size on shrubs, use a "worst offender" approach. Cut out the longest, straggling branches first, and then work back from there.
- Time shrub pruning so as not to cut off the flower buds. This is often best done by doing maintenance pruning shortly after the plant has bloomed.

Palm Trees:

- The best thing for palms is to remove fronds only when they're dead or half-dead. This is because palms "recycle" nutrients from fronds.
- If you remove live fronds, don't remove them above a horizontal position! Leave the top half of the canopy full.

Watering:

- Water deep, wide and infrequent.
- The difference between low water-users and high water-users is in how *often* they get watered, not in how much!
- Roots provide structural support as well as nutrient, water and air uptake. Make sure there are emitters in place to provide an *over-lapping* wetting pattern from emitter to emitter (3-4 feet apart) in *all* 4 directions from the trunk.

Staking:

- Stakes are only temporary and should be removed within 1-2 years.
- If a tree cannot stand on its own within 2 years, it should likely be removed and replaced.
- On planting day, remove any stakes placed directly against the trunk.
- *If* stakes are needed, use 2 (preferably 3) placed outside of the rootball.
- Cut off any excess portion that might rub against branches.
- Check the tie material frequently to make sure it doesn't choke the tree.
- Make sure staking allows a small trunk to flex in the wind. This makes the trunk stronger.

Finally:

- **Please help STOP the topping of trees! It is cruel, useless mutilation, and criminal! It hurts us all, in financial value, in beauty and in the livability of our communities!**

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