

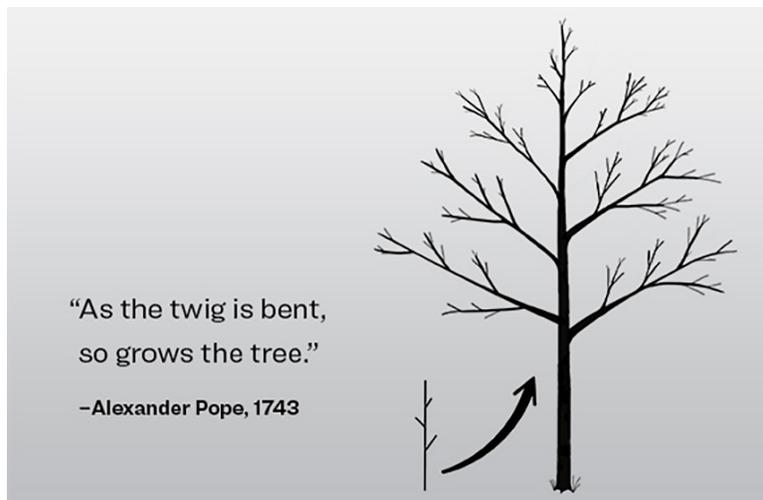
Training Young Shade Trees

Bracken Henderson

Why Prune My Shade Trees?

Pruning young shade trees to enable the development of a strong, healthy tree structure is a frequently overlooked practice. This publication provides a brief overview of the necessary tools, practices, and procedures so that you can improve the life and longevity of your trees.

The most common reason older trees require professional (and likely expensive) pruning is structural flaws that developed when the tree was young. Professional arborists can remove defective branches, but this can leave a misshapen tree for years. You can reduce the need to hire an arborist when trees are older by pruning your trees when they are young. Indeed, investing a little time early on will likely pay dividends years into the future.



Appropriate Pruning Tools

When it comes to training young shade trees, the right tools are important:

- Bypass hand pruners (a pruning tool with blades that pass each other like scissors, a design that creates clean cuts that heal quickly)
- Long-handled loppers (bypass type)
- Pruning handsaw
- Pole lopper/saw for reaching high branches (optional)
- Stepladder (optional)

Note: All tools should be clean, sharp, and in good working condition to minimize pruning injury to the tree. For work requiring a chain saw or that is beyond the reach of a pole lopper/saw, hire a certified arborist.



at a glance

- The size of pruning wounds affects the speed at which they heal.
- Trees don't heal wounds in the same way animals do; they slowly grow new tissue that covers the wound from the outside edges inward. Trees can't repair damaged tissue, they instead seal off wounds.
- Pruning does not stop growth; rather, it redirects where growth occurs.
- As trees grow in height, each limb will always be the same distance from the ground.
- Removing more than 20% of the foliage during a single pruning event can cause loss of vigor and reduce tree health.

When to Prune

Most pruning is done while trees are dormant. Late winter/early spring is the best period to carry out the primary pruning of most species. This is when it least impacts the tree and it is easier to assess needs when branches are leafless. Minor trimming and pruning can be done in the summer. Summer pruning of maple species also avoids excessive bleeding. Removing dead, diseased, or damaged branches is okay to perform year-round.

Types of Cuts

Each time you cut a branch you are telling a tree where/how you want it to grow. Be sure you are sending the right message.

- Thinning cuts (Figure 1)
 - Improve light and air penetration
 - Help a tree retain a healthier form
 - Remove suckers

- Heading cuts (Figure 2)
 - Correct shape problems
 - Control size (to a limited extent)
 - Encourage dense growth habit

Also, important to conducting successful pruning is knowing where and how to make the cuts. Figures 3–6 illustrate the right and wrong ways to make pruning cuts. Correctly positioned cuts allow the tree to recover quickly. Identifying the branch collar (the swollen area of trunk tissue that forms around a branch base) is part of pruning a tree properly.

- Because treating wounds with sealant or paint may increase disease issues, leave pruning wounds exposed to allow optimal healing.

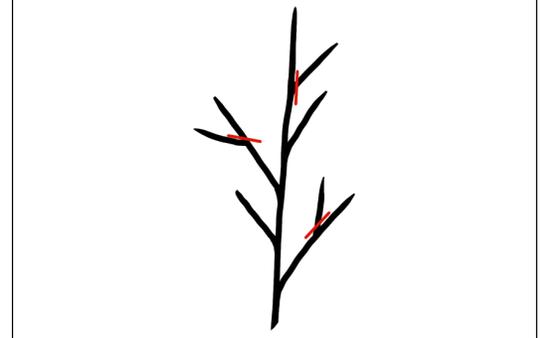


Figure 1. Thinning cuts (red marks) remove minor growth back to a larger branch.

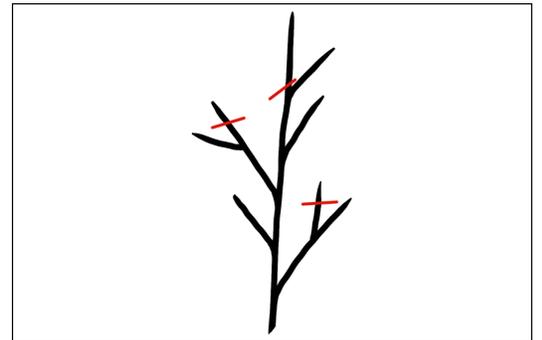


Figure 2. Complete heading cuts (red marks) to remove any major growth back to a smaller branch or a bud.

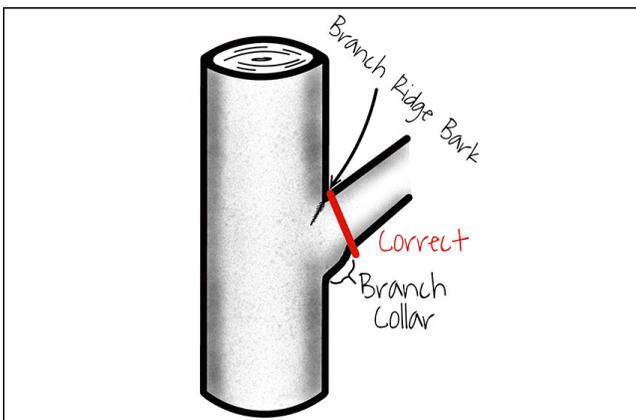


Figure 3. A properly performed pruning cut (red mark) avoids damaging the branch collar or branch ridge bark. The resulting wound will seal over quickly.

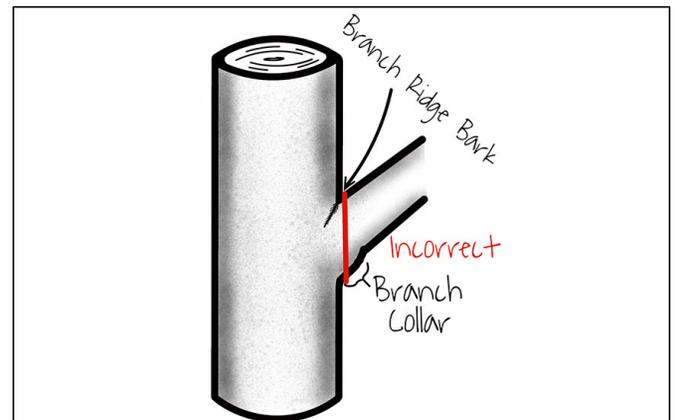


Figure 4. An incorrectly performed cut (red mark) damages the actively growing meristem in the branch collar, resulting in significant delay in the sealing process.

Note that the bud just below a cut produces a branch's dominant growth. In most cases this bud should face away from the center of the tree.

Let's Start Pruning

It's best to adopt a consistent procedure when pruning, beginning with taking a good walk around the tree. This will allow you to assess its needs so you can develop a more effective overall pruning plan:

1. Remove damaged, diseased, and dead branches.
2. Select and maintain a strong central leader. Remove codominant leaders and remove or reduce competing branches.
3. Select temporary branches below the lowest permanent branch (if the tree is small). Temporary branches are left on the tree for a few years but will eventually be removed. These may be reduced to keep them from competing with permanent branches.
4. Select lowest permanent branch (if the tree is tall enough for this action). When you identify the lowest permanent branch, you are defining the height at which the tree canopy will begin. Mark this branch with water-based paint for reference.
5. Select the scaffold branches. These are permanent branches that will form the canopy of your tree. Competing branches should be removed or reduced. Scaffold branches should be at least one foot from each other and be distributed radially around the center of the trunk.

Completion of these pruning steps assumes repeated pruning and training over a period of years. The walk-around initial assessment and steps 1 and 2 should be completed annually or every other year until the tree is large enough to exhibit a mature growth habit. Step 3 should be completed when the tree is small and still lacks mature form. Begin steps 4–5 when the tree is tall enough to grow permanent branches and repeat them until the tree exhibits a mature growth form.

Training your trees should begin as early as possible. The following guidelines will help you know when you should expect to conduct pruning/training. These are general guidelines. Actual timing depends on the tree species and growth response.

- 1–3 years after planting, remove only dead and damaged branches and retain trunk branches.
- 3–5 years after planting, remove one branch of a double trunk, if needed.

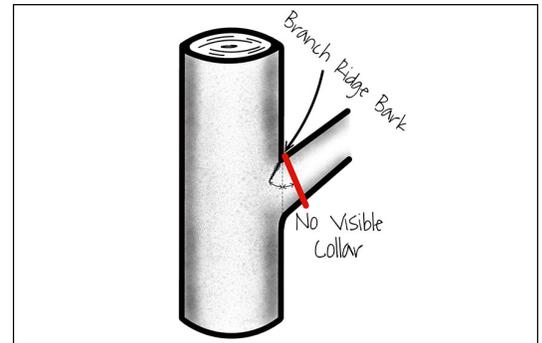


Figure 5. If there is no visible branch collar, an imaginary line (dotted line), connecting the trunk above and below the branch to be cut can be used to gauge where to cut (red line).

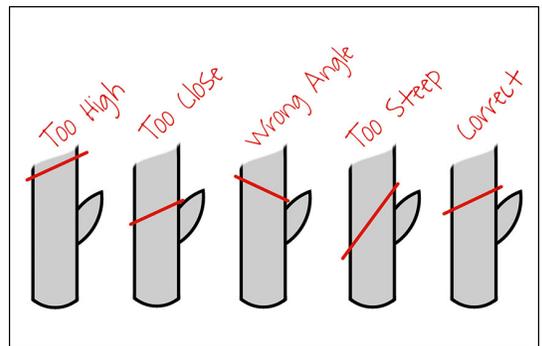


Figure 6. When making heading cuts back to a bud, you should position your cut to be just above and slanting downward away from the bud (red marks).

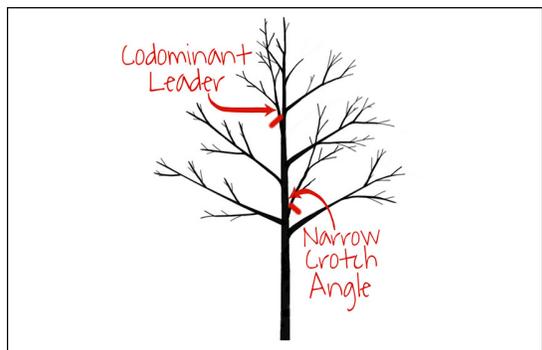


Figure 7. Removing a codominant leader (upper part of image; red mark indicates proper cut location) will help your tree maintain a central leader. In lower portion of image, the red mark indicates a needed cut to eliminate a narrow crotch angle.

- 5–6 years after planting, begin removing lower (temporary) branches and identifying and training permanent ones.

Other guiding principles to consider when developing a pruning plan:

- Maintain a central leader (Figure 7).
- Over time, build a scaffold with both horizontal and lateral balance (5–10 branches).
- Avoid creating sharp crotch angles at the juncture of trunk and branch (45°–60° degrees is best; see Figure 7).
- To raise the crown, remove branches only from the bottom third of the tree (Figure 8).
- For large branches, use the 3-cut rule to avoid ripping the bark (Figure 9).

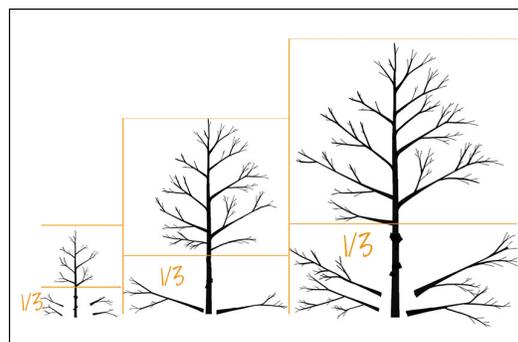


Figure 8. Removing branches from only the bottom third of a tree strengthens its crown growth.

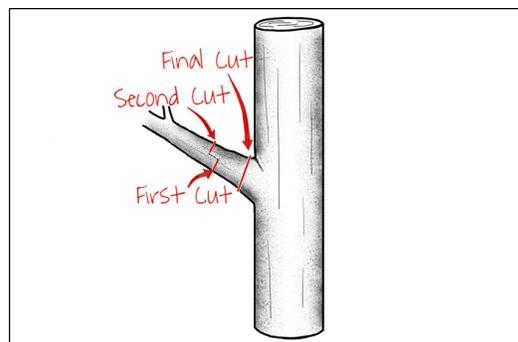


Figure 9. The 3-cut rule. Following the 3-cut rule for large branches prevents the tearing of bark below the branch as it falls. Red lines indicate where to make each cut and in what order.

About the Author

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