

Meetings and Announcements

A New and Free Publication on Principles of Xeriscape

I have been working on a publication on the principles of xeriscape, that is, water-conserving landscapes. This item was first developed in the 1990s, but never made it to publication. It's better now as a result of continuing and recent research about plants and water savings. This publication is now live in the ANR catalog:

anrcatalog.ucanr.edu/Details.aspx?itemNo=6713. Might need to cut-and-paste to reach this address. I can send you a .pdf if needed.

Pruning Shade Trees

I suppose I need to say something about this.

Autumn days bring cooler temperatures, fall color development in the landscape, and the sound of chain saws echoing through city streets. Although shade trees may be pruned in autumn as a matter of routine, pruning should not be considered an annual necessity, especially if structure has been established when trees were young. Many shade trees will grow well without annual pruning, and severe pruning is damaging to most tree species. The first question to ask before pruning is "Why?" Pruning should proceed only if specific reasons exist and clear goals have been established.

Pruning may be required for the following reasons:

- **Structure:** Shade trees should have a central leader with scaffold branches spaced one to three feet apart. Branches should have wide angles of attachment to the trunk. Competing branches should be removed. Establish a dominant leader by shortening competing leaders, especially in young trees.
- **Health:** Diseased, damaged or rubbing branches can be removed.
- **Safety:** Branches which pose a hazard should be removed. Examples are branches that interfere with driver visibility at street corners and those which hang low over sidewalks. The sail area of trees may also be reduced to lessen the chances of uprooting during windstorms.
- **Appearance:** Many trees have interesting trunk and scaffold forms. Exposing the form of the tree can enhance its appearance. Trees that have been pruned correctly retain a 'natural' appearance and often don't obviously look as though they have been pruned.

Two types of pruning cuts, *heading* and *thinning* cuts, should be used. These have opposite effects on tree structure, and in most situations pruning should be done with a combination of both. A heading cut shortens branches and removes the terminal bud. The terminal bud (at the end of a branch) is dominant (apical dominance) and governs growth of laterals. If the terminal bud or shoot is removed, lateral buds will break and lateral

branches will grow faster; therefore, bushy growth results. Heading main branches to the same point every year, as is often done with mulberries, is known as pollarding. The resulting numerous branches are weakly attached and do not extend to great height nor block out much sky. In northern Europe, sunlight is at a premium and pollarded trees provide ornament in city squares. However, pollarding dwarfs trees and limits shade, and some species can be killed outright by this practice. The popularity of the pollarding style in Bakersfield is perhaps a triumph of tradition over thinking.

A thinning cut removes a smaller branch at the place of attachment to a larger branch. Thinning opens the tree crown while retaining larger limbs, and preserves a “natural” appearance of the crown. Many trees, including pines, oaks, and magnolias, respond poorly to heading cuts and new branches originate with difficulty. These tree species, especially, should be thinned and not headed, if pruned at all. Keep the central leader and key structural branches to preserve a framework within the tree crown.

The placement of the pruning cut directly affects how much decay may later occur in the trunk. Trees do not have a healing process comparable to what occurs in animals or people. Damaged tissue is not repaired but rather sealed, i.e., compartmentalized, followed by growth of replacement tissue. The first line of defense of trees against decay fungi is a layer of tissue identified by the branch bark ridge, visible in some species as a raised collar close to the trunk around each branch. A cut should be made just outside this ridge. The former practice of cutting branches as closely as possible to the trunk did produce callus growth, but the first line of defense was breached, allowing decay-producing organisms to enter. When a tree is topped, several lines of defense are breached, and direct entry to the heartwood of the tree is possible for decay fungi. Therefore, topping should be avoided unless absolutely necessary. If severe topping is necessary, perhaps tree removal is a better choice followed by replanting of a smaller species.



On left: Dieback of a broken branch to the branch collar, the tree’s natural line of defense, where a pruning cut should be made. On right: Well-pruned trees retain a natural appearance without obvious signs of pruning.

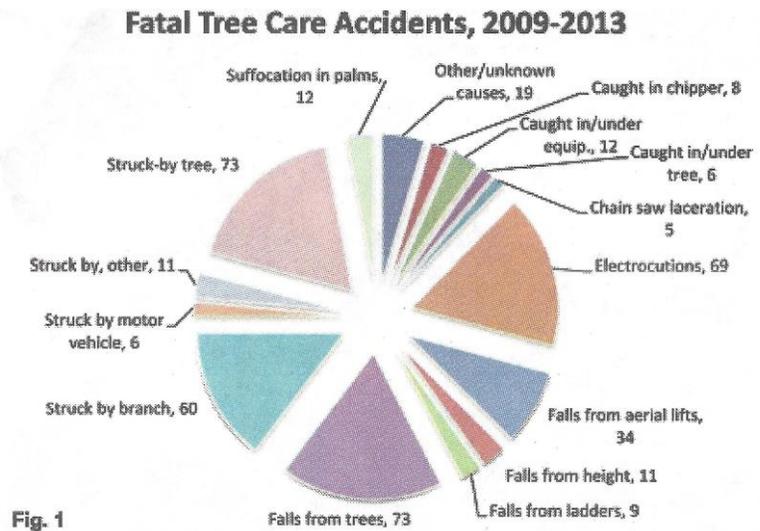
Tree Care Accidents

If you have pruning work done, make sure your contractor has safety equipment and insurance.

Below is a chart released by the Tree Care Industry Association showing fatal accidents from 2009-2013. We might suppose that for each fatal accident there were

several others in the same category that were non-fatal. These data show the types of situations that must be avoided, whether working on trees at home or as a professional. As we might expect, falls are important causes of fatalities, and that includes from trees as well as from aerial lifts. Proper harnesses are a must! More numerous than falls are accidents resulting from being struck by trees or limbs. Once trees or branches begin to move it is difficult or impossible to change their direction and speed. When trees are being felled, the trunk often moves in unpredictable directions and the butt end may jump backwards or sideways when the top of the tree hits the ground. It is best to take trees down in small pieces. Although many California neighborhoods have underground utilities, overhead wires are dangerous. Planting of smaller species under wires is sensible so that pruning will be infrequent or not necessary at all.

Graph of fatal tree care accidents, from the article by Juan Barba, *Southwest Trees and Turf*, May-June 2014, 20(4):5.



John Karlik Environmental Horticulture/Environmental Science

Disclaimer: Discussion of research findings necessitates using trade names. This does not constitute product endorsement, nor does it suggest products not listed would not be suitable for use. Some research results included involve use of chemicals which are currently registered for use, or may involve use which would be considered out of label. These results are reported but are not a recommendation from the University of California for use. Consult the label and use it as the basis of all recommendations.

The University of California, Division of Agriculture and Natural Resources (UC ANR) prohibits discrimination against or harassment of any person in any of its programs or activities on the basis of race, color, national origin, religion, sex, gender, gender expression, gender identity, pregnancy (which includes pregnancy, childbirth, and medical conditions related to pregnancy or childbirth), physical or mental disability, medical condition (cancer-related or genetic characteristics), genetic information (including family medical history), ancestry, marital status, age, sexual orientation, citizenship, status as a protected veteran or service in the uniformed services (as defined by the Uniformed Services Employment and Reemployment Rights Act of 1994 [USERRA]), as well as state military and naval service. UC ANR policy prohibits retaliation against any employee or person in any of its programs or activities for bringing a complaint of discrimination or harassment. UC ANR policy also prohibits retaliation against a person who assists someone with a complaint of discrimination or harassment, or participates in any manner in an investigation or resolution of a complaint of discrimination or harassment. Retaliation includes threats, intimidation, reprisals, and/or adverse actions related to any of its programs or activities. UC ANR is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment and/or participation in any of its programs or activities without regard to race, color, religion, sex, national origin, disability, age or protected veteran status. University policy is intended to be consistent with the provisions of applicable State and Federal laws. Inquiries regarding the University's equal employment opportunity policies may be directed to: John I. Sims, Affirmative Action Compliance Officer and Title IX Officer, University of California, Agriculture and Natural Resources, 2801 Second Street, Davis, CA 95618, (530) 750-1397. Email: jsims@ucanr.edu. Website: http://ucanr.edu/sites/anrstaff/Diversity/Affirmative_Action/.