

Pruning Trees and Shrubs



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COOPERATIVE EXTENSION

Publications on Pruning

Pruning Deciduous Shade Trees

<http://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1139.pdf>

Pruning Citrus

<http://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1455.pdf>

Pruning Shrubs in the Low and Mid Elevation Deserts in Arizona

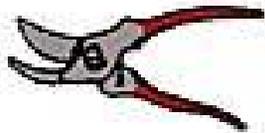
<http://extension.arizona.edu/sites/extension.arizona.edu/files/pubs/az1499.pdf>

Pruning is the intentional removal of parts of a plant for a purpose.



Pruning Equipment

Pruning Shears



**Scissor
Action**

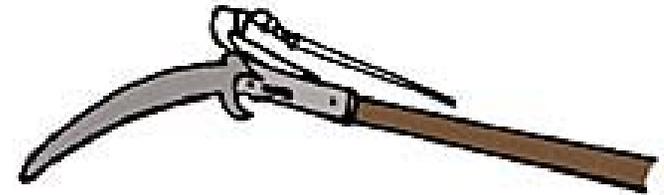


**Anvil
Action**

Lopping Shears



**Scissor
Action**



**Figure 2. Combination pole
saw pruner**



**Figure 4. Pruning saws
(*folding saw and bow saw*)**



**Figure 3. Hedge shears
(*manual and power*)**

Sterilizing tools

Virus, vascular fungus,
bacteria

Avoid oozing cankers

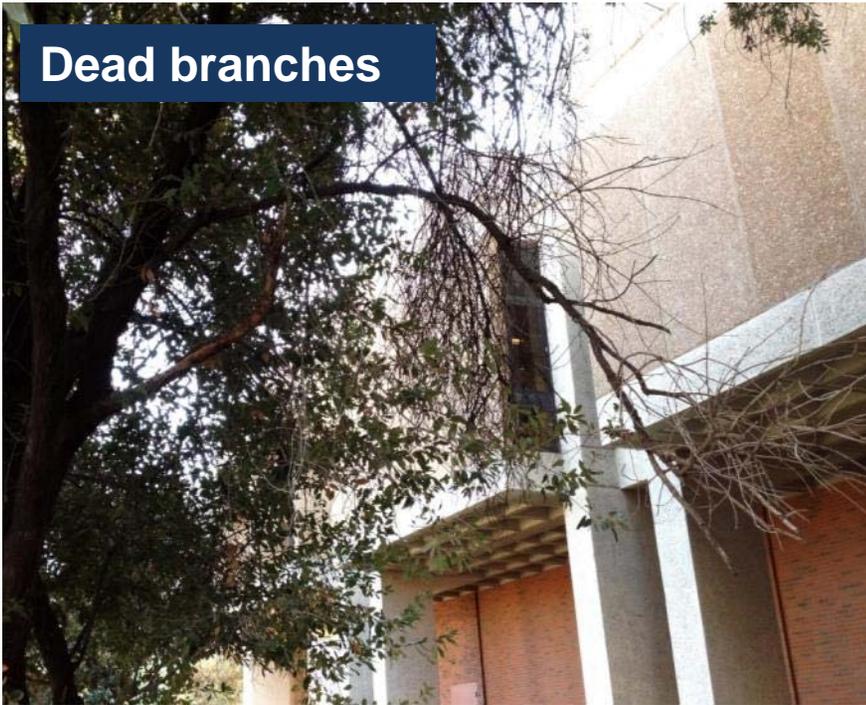
70% Isopropyl alcohol

Listerine, Lysol, Pine-Sol

Why Do We Prune Plants?

- ✓ To remove damaged/broken branches
- ✓ To remove rubbing, crossing, inwardly growing branches
- ✓ For visibility & safety considerations
- ✓ To train young plants
- ✓ Control plant size
- ✓ Rejuvenation of plants
- ✓ Increase flowering, fruiting and vigor

Dead branches



Sign blocked



Broken branch



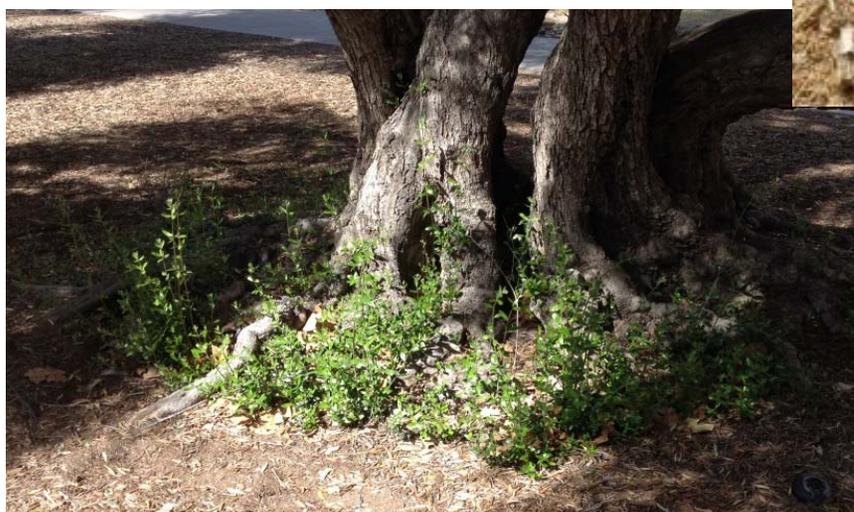
Rubbing/crossing branches





Co-dominant leader

Remove suckers, root stock suckers, and adventitious buds growing on the stem

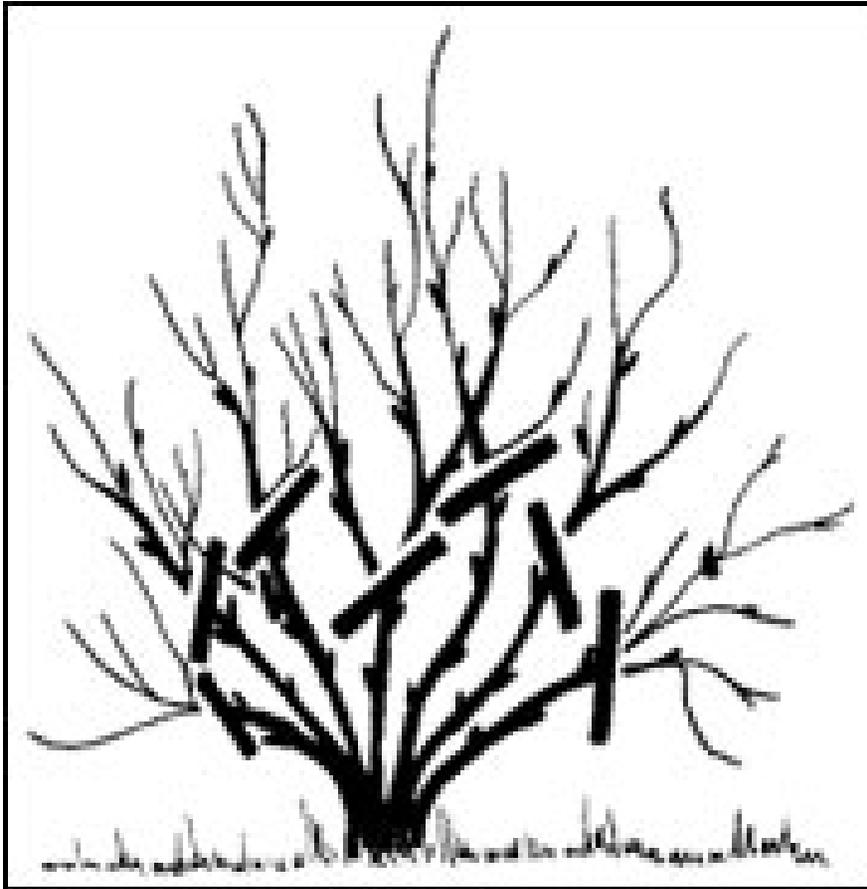


Pruning Basics

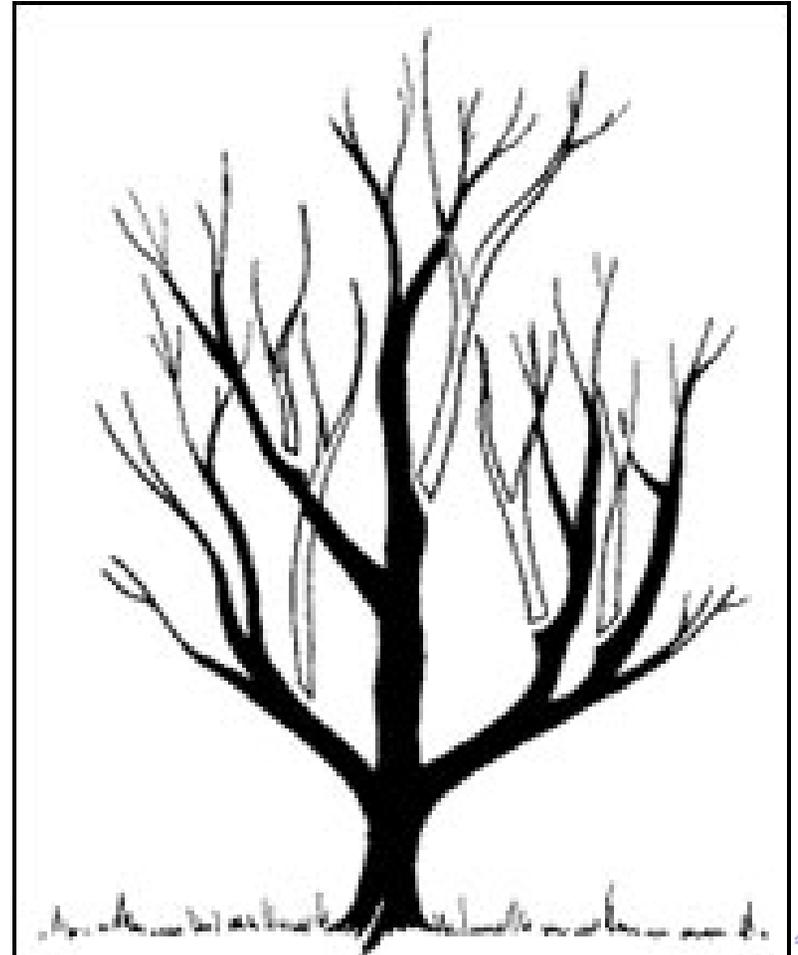
- **Never remove more than 25-30% of the canopy in any given year**
- If the plant requires frequent pruning, then it may not be the best suited plant for that situation
- Usually best done in the early life of the plant
- Shearing of shrubs is labor intensive, generally unnecessary, requires regular repeat shearing

Pruning Basics

Heading versus Thinning



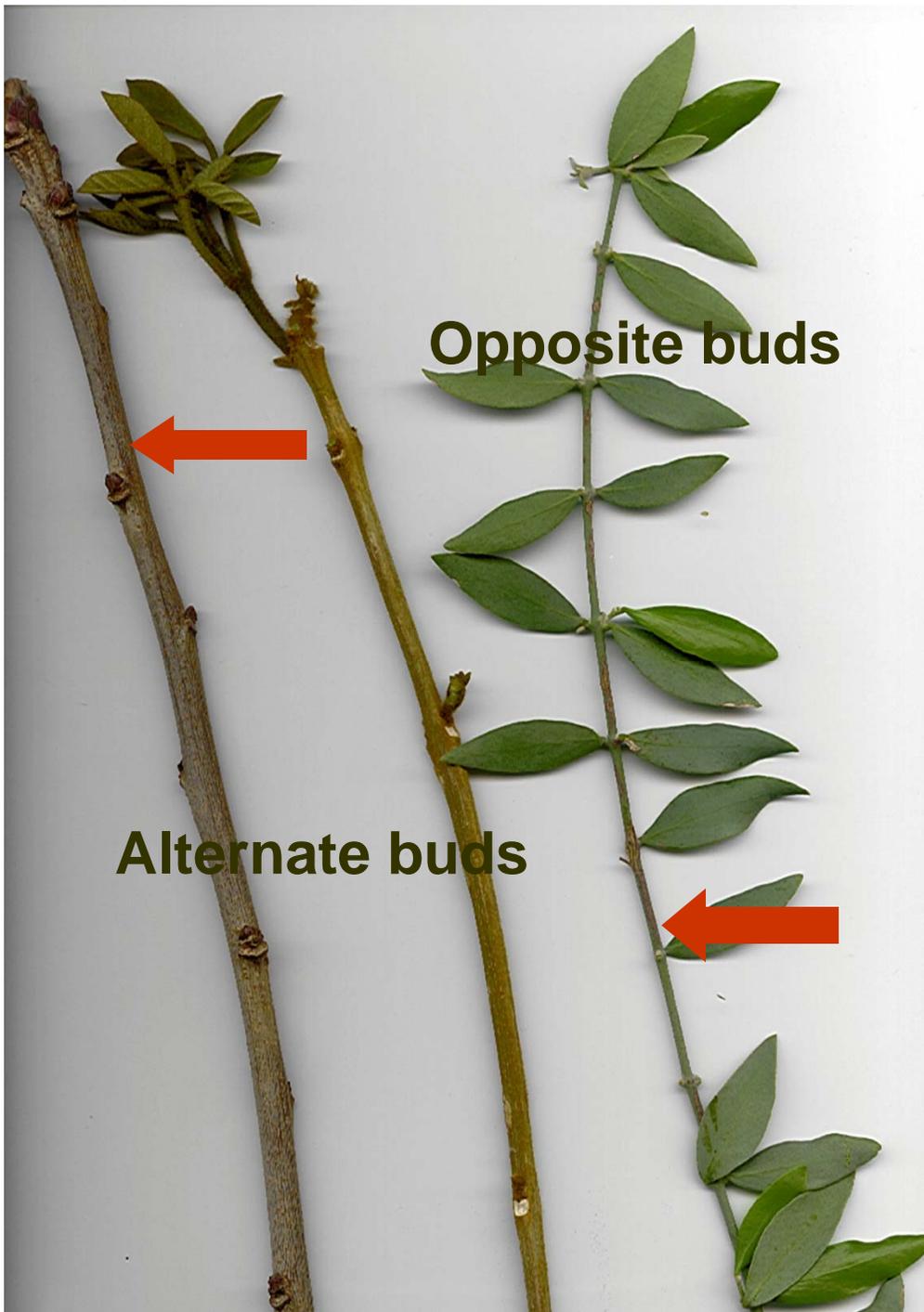
Cut anywhere
Leaves STUBS



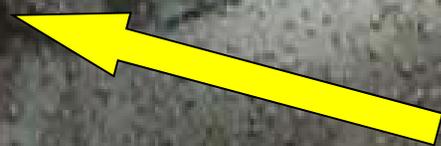
Cut back to next lateral branch
NO STUBS

Where to cut?

Above a bud when possible. Prevents unsightly stubs that die back.



Where to cut?

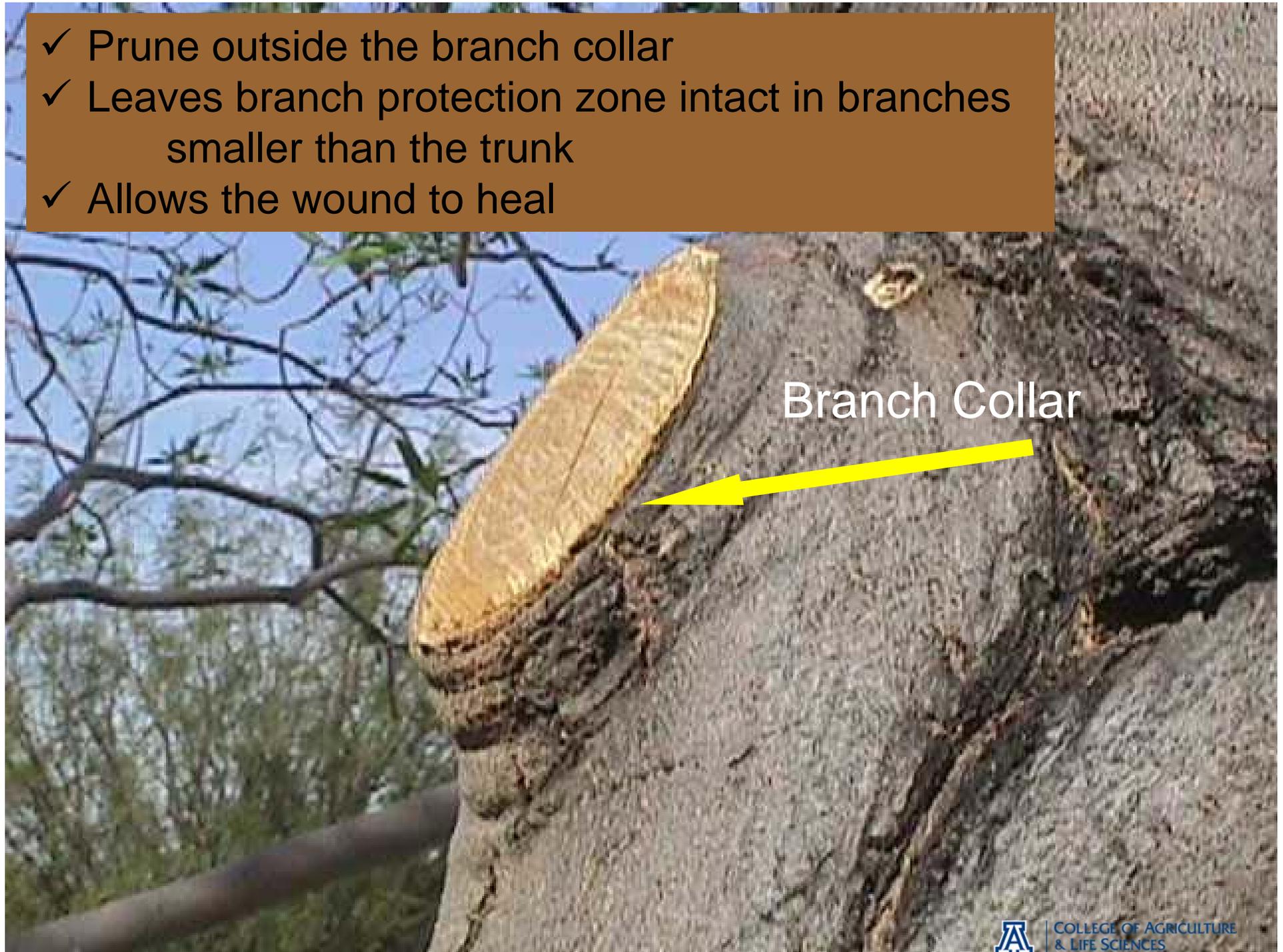


Branch Bark Ridge

Branch Collar



- ✓ Prune outside the branch collar
- ✓ Leaves branch protection zone intact in branches smaller than the trunk
- ✓ Allows the wound to heal



- ✓ **Leave the cut to heal naturally**
- ✓ **Do not apply paint to the cut surface**



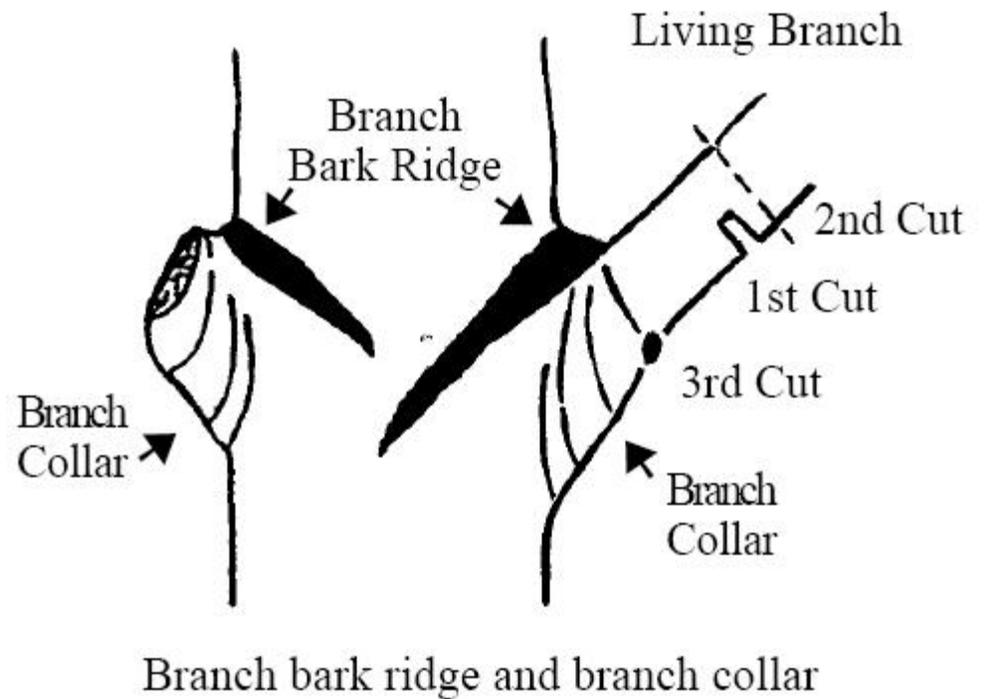
Proper pruning cuts

- ✓ Cut outside the branch collar
- ✓ Do not leave stubs
- ✓ For branches larger than 1” diameter use the **3 cut method**
- ✓ This prevents tearing the bark

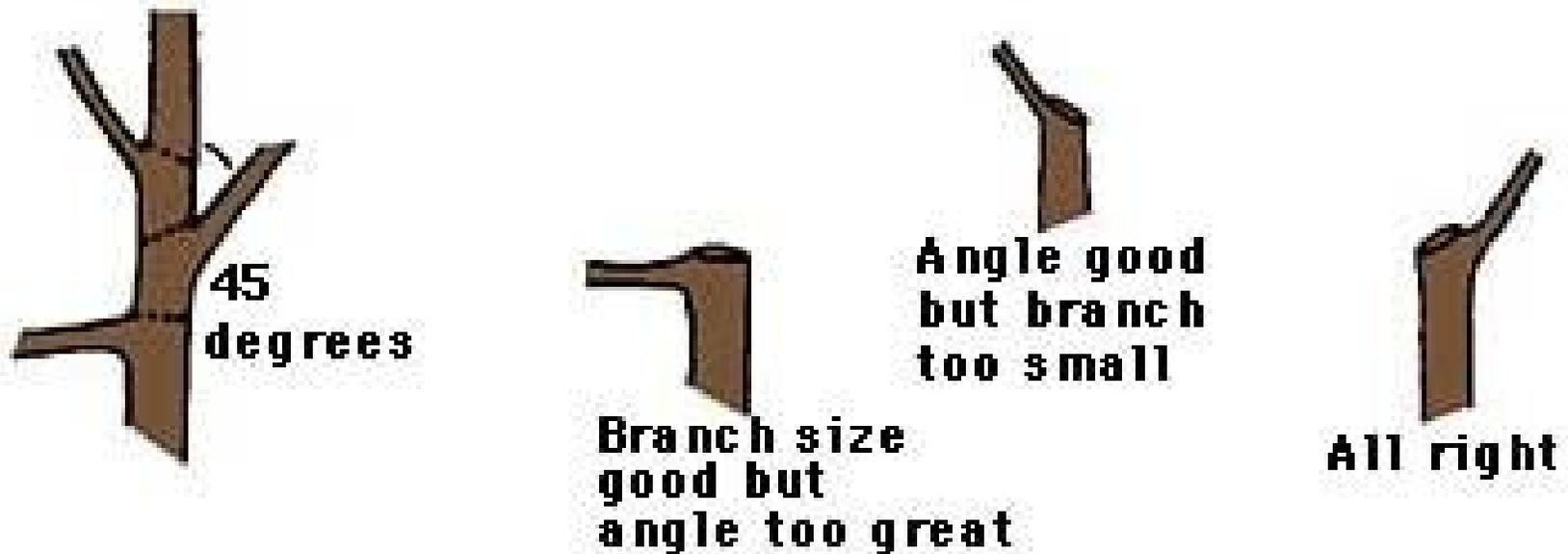
Removing Branches

3-cut method to remove larger branches

- Locate the branch collar
- Make first cut from below
- Make second cut from above and outside of first cut
- Make final cut to preserve branch collar



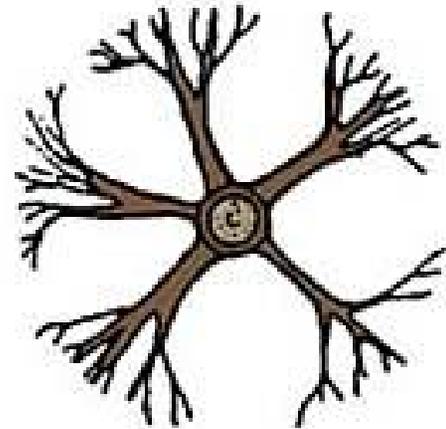
Branch Angles and Removal



- 45 to 60 degrees is a good angle
- The branch you cut back to should have a diameter of at least half that of the branch to be removed

Branch Spacing

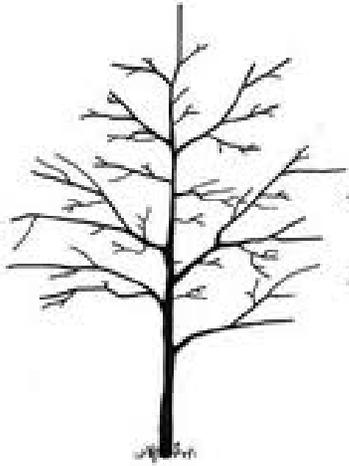
- Vertical spacing should allow for radial branch growth
- Radial spacing should be as balanced as possible



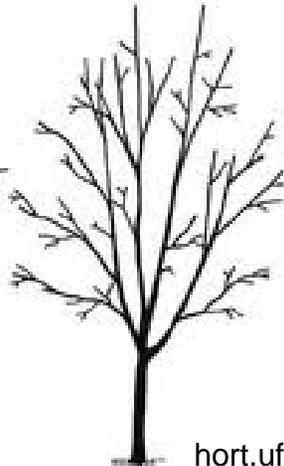
Training young trees

- Develop sound canopy structure
- Single leader, well spaced branches
- Remove or shorten co-dominant stems
- Remove or shorten competing stems
- Identify lowest permanent branches, control growth of temporary branches (usually about 5 years after planting)

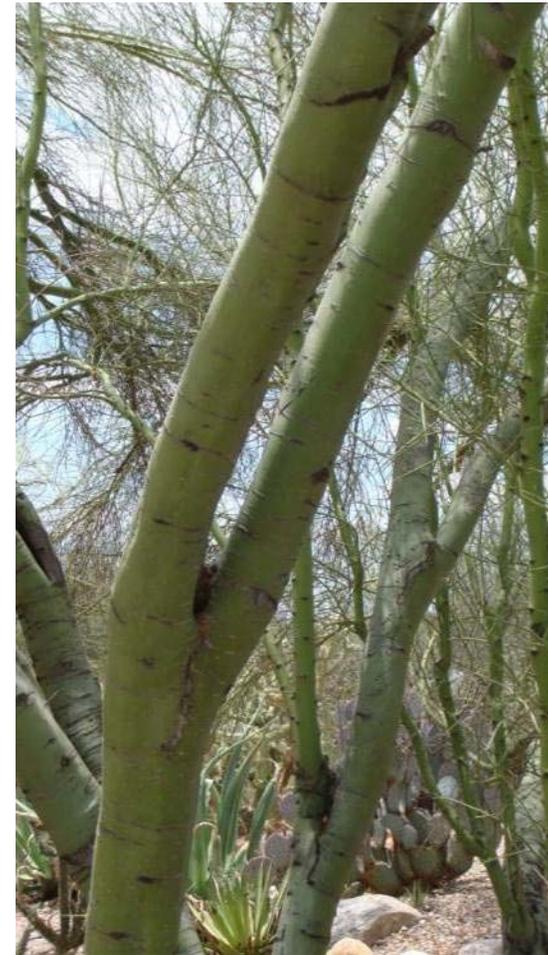
Good quality



Poor quality



hort.ufl.edu



Co-dominant
stems

When to prune trees?

- **Deciduous trees – winter dormancy**
- **Conifers – winter dormancy**
- **Native trees – summer**

- **In the low desert pruning can be done almost year round.**

Do not top trees



- Removes too much foliage
- Entry for disease organisms or insects
- Destroys the structure of the tree
- Does not control tree height
- New branches are weakly attached





Crown reduction reduces tree height



Reduction cut – controls size

- Cut branch should be no more than three times as thick as remaining branch
- Branch is cut back to lateral
- Also called drop crotch cut



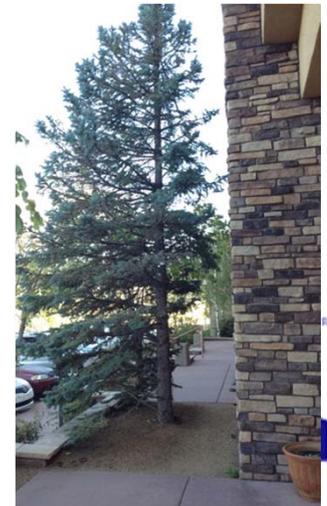
Pruning Conifers

- Single leader – excurrent form when young
- Strong apical dominance
- Laterals naturally well spaced
- Maintain this natural form!



Pruning Conifers

- Conifers growing in a landscape with sufficient space do not require pruning.
- Prune dead, dying, damaged, or hazardous branches.
- Common pruning is removal of lower branches to allow traffic to pass.
- Reduction and thinning cuts are not appropriate.
- Most conifers cannot grow new shoots from old wood – prune light



Pruning palms

- Remove only dead or dying fronds
- Leave all horizontal and upward pointing fronds
- Removing green fronds stresses the plant





Pruning Shrubs

- Schuch, U.K. 2009. Pruning Shrubs in the Low and Mid-Elevation Deserts in Arizona. University of Arizona CALS Publication AZ 1499.
<http://cals.arizona.edu/pubs/garden/az1499.pdf>
- Topics covered include why, when and how to prune, hedges, renovating overgrown shrubs, and training shrubs into small trees.

Pruning Shrubs

- Maintenance begins at planting and pruning should begin before the plant reaches the desired size
- Slow growing shrubs normally have a well defined branch structure
- Shearing should be avoided
- Fast growing shrubs generally have many shoots originating at the base of the plant and require regular pruning

Other Shrub Pruning Concepts

- Visualize what the plant will look like with the branch in question removed
- Never remove more than 25-30% of the old branches annually
- If the plant must be drastically reduced in size, reduce it over a 3-4 year period
- Make cuts on shrubs at varying lengths in order to leave the shrub with a textured natural look
- Fast growing plants such as oleander can be pruned to within 6 inches of the ground and will re-sprout rapidly

Selective thinning removes branches to point of attachment (left) or to the base of the plant (right)

Before



After



Before



After





A heading cut results in multiple shoots.



**Avoid stubs,
they just
die back**

Shrubs for the low and mid-elevation deserts in Arizona that require little or no regular pruning. Light pruning for size control or selective thinning can be done anytime.

Latin Name

Common Name

Dodonea viscosa

Hop bush

Fallugia paradoxa

Apache plume

Juniperus chinensis cultivars

Juniper

Larrea tridentata

Creosote

Ligustrum japonicum

Waxleaf privet

Nandina domestica

Heavenly bamboo

Pittosporum tobira

Japanese mock orange

Rhus microphylla

Little-leaf sumac

Rhus ovata

Sugar bush

Rhus virens

Evergreen sumac

Simmondsia chinensis

Jojoba

Thuja cultivars

Arbovitae

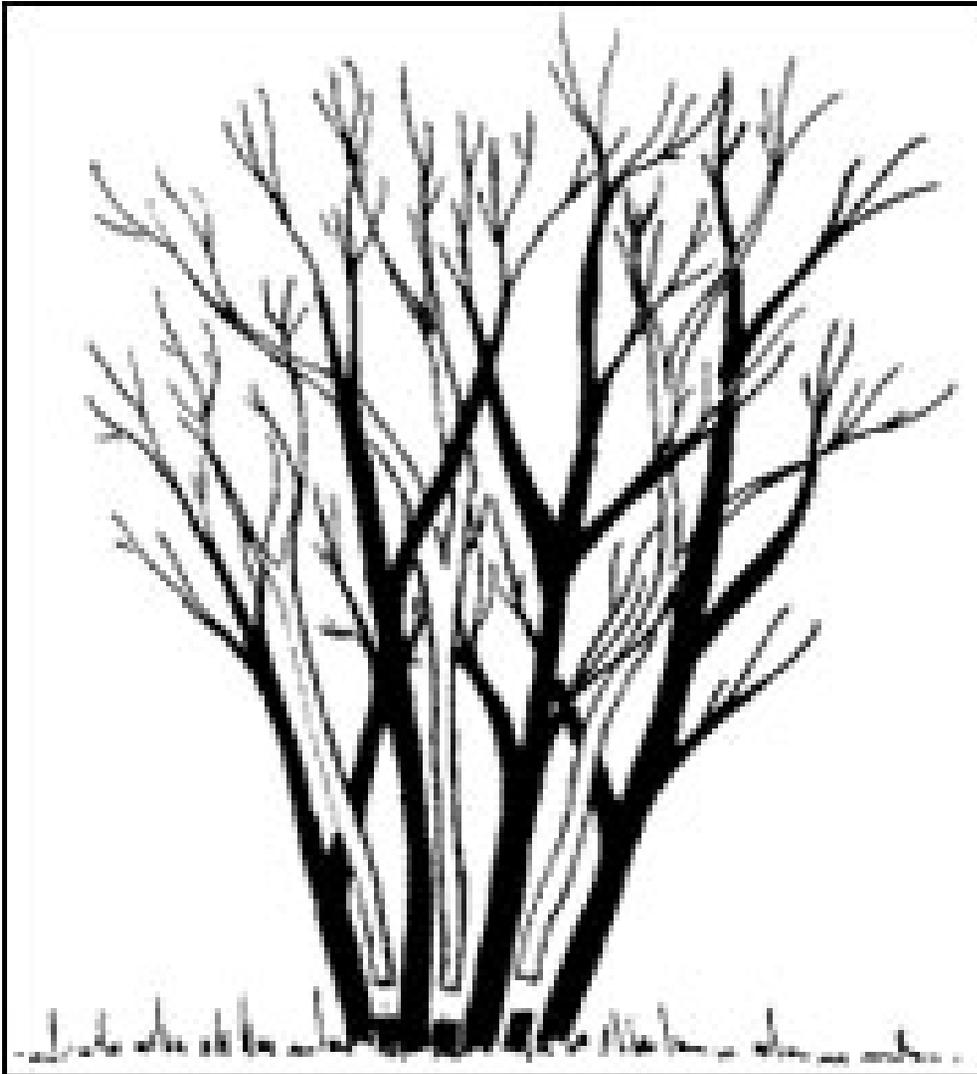
Vauquelinia californica

California rosewood

Xylosma congestum

Xylosma

Rejuvenation



Remove old or crowded stems from multi-stemmed large shrubs **at the base**

Rejuvenation of shrubs



Cut shrub 12-18 inches above the ground

Late winter/ early spring

Thin branches out and cut back in height during summer

By fall the shrub has grown a full new canopy

Fast growing shrubs respond well

Does not work for arbovitae, juniper, rosemary

Why Not Shear Shrubs?

1. It looks unnatural
2. Flower production is decreased
3. It is very labor intensive
4. Plants soon become woody on the interior
5. Height is more difficult to control
6. Design intent is lost



Hedges

Choose evergreen plants with small leaves, short internodes, dense branching and that are able to sprout from old wood.

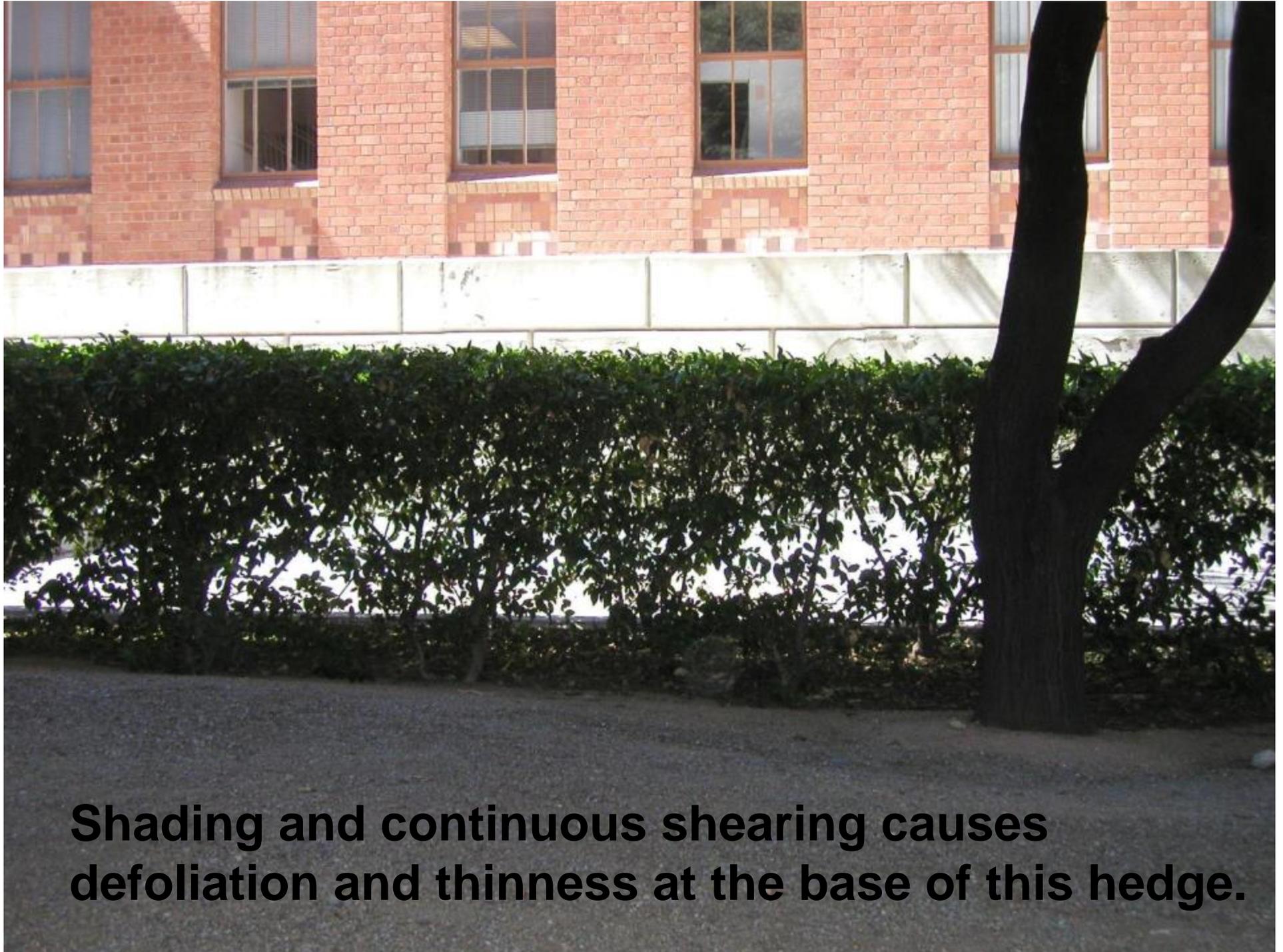
Keep the number of hedges to a minimum because they are labor intensive.

Shrubs suitable for formal and informal hedges

Latin Name	Common Name	Informal	Formal
<i>Buxus microphylla</i> <i>japonica</i>	Japanese boxwood	+	+
<i>Ligustrum japonicum</i>	Waxleaf privet	+	+
<i>Myrtus communis</i>	Myrtle	+	+
<i>Simmondsia chinensis</i>	Jojoba	+	+
<i>Xylosma congestum</i>	Xylosma	+	+
<i>Juniperus chinensis</i> cv.	Juniper	+	+
<i>Carissa grandiflora</i>	Natal plum	+	+
<i>Dodonea viscosa</i>	Hop bush	+	
<i>Leucophyllum frutescens</i>	Texas ranger	+	
<i>Leucophyllum laevigatum</i>	Chihuahuan sage	+	
<i>Nandina domestica</i>	Heavenly bamboo	+	
<i>Nerium oleander</i>	Oleander	+	
<i>Punica granatum</i>	Pomegranate	+	
<i>Thuja</i> cultivars	Arbovitae	+	



**Formally sheared
Xylosma hedge**



Shading and continuous shearing causes defoliation and thinness at the base of this hedge.



**Informal pomegranate
hedge, minimal
maintenance required.**



Informal *Myrtus communis* hedge works also well for shearing

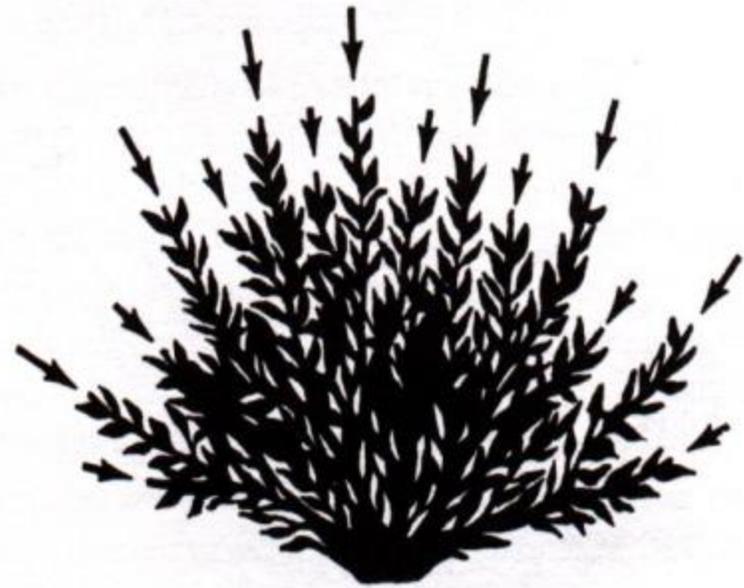
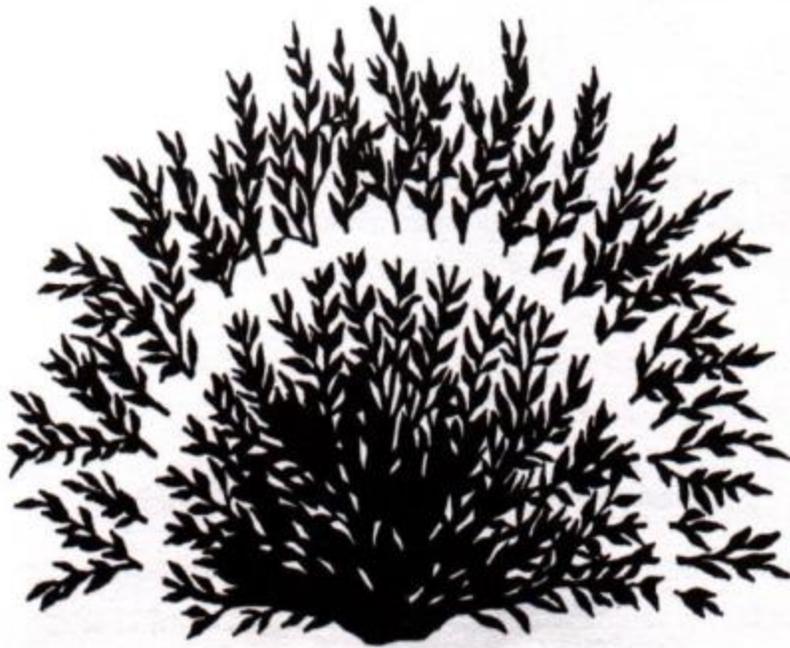


How to Avoid Shearing Shrubs

1. **NEVER** use hedge shears.
2. Selectively cut branches, cut just above a bud or side shoot.
3. Remove stems throughout the plant.
4. Cuts can be as severe as you desire.

Naturalistic Shrub Pruning

1. Cut branches back to a rough globe shape.
2. Cut every other branch back 6-9 inches to the first large V.



From: Johnson, 1997

How to Prune Shrubs

1. Know the flowering period for the shrub
2. **Prune after bloom period**
3. Try not to remove major branches which will open up the plant to sunburn
4. Keep pruning to a minimum

5. If a shrub requires continual pruning, consider removing the plant and replacing with a slower growing or smaller size plant

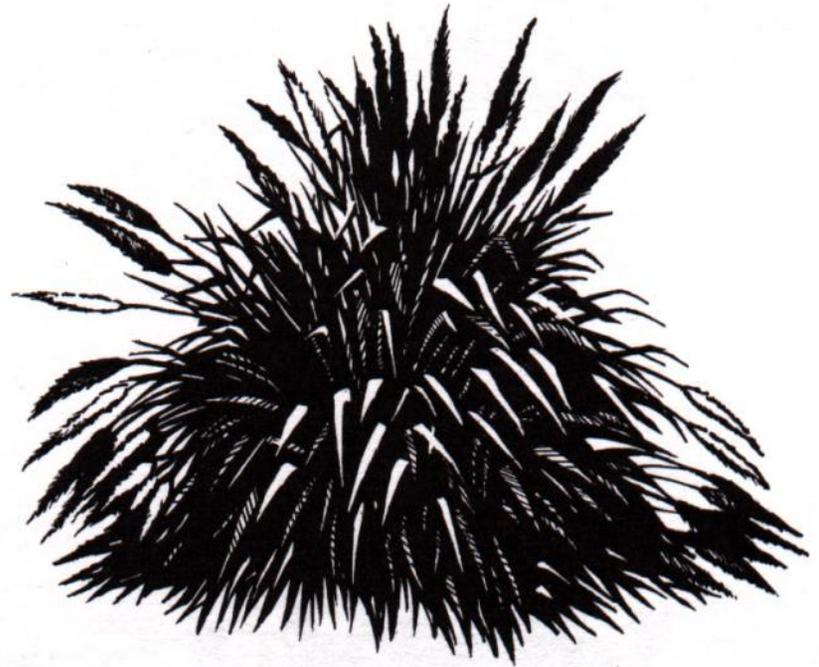
6. Remove dead flowers 'deadheading' as soon after bloom as possible to reduce seed production and litter

7. If possible, attempt to cut above a bud on the stem

Pruning grasses

Cut back to 6 inches above ground in late winter when grass is dormant.

Plants produce vigorous new growth in spring.



Pruning roses

When?

- Prune in late winter when buds begin to swell.

What?

- Remove dead wood.
- Remove crossing branches rubbing against others.
- Remove old, unproductive canes.

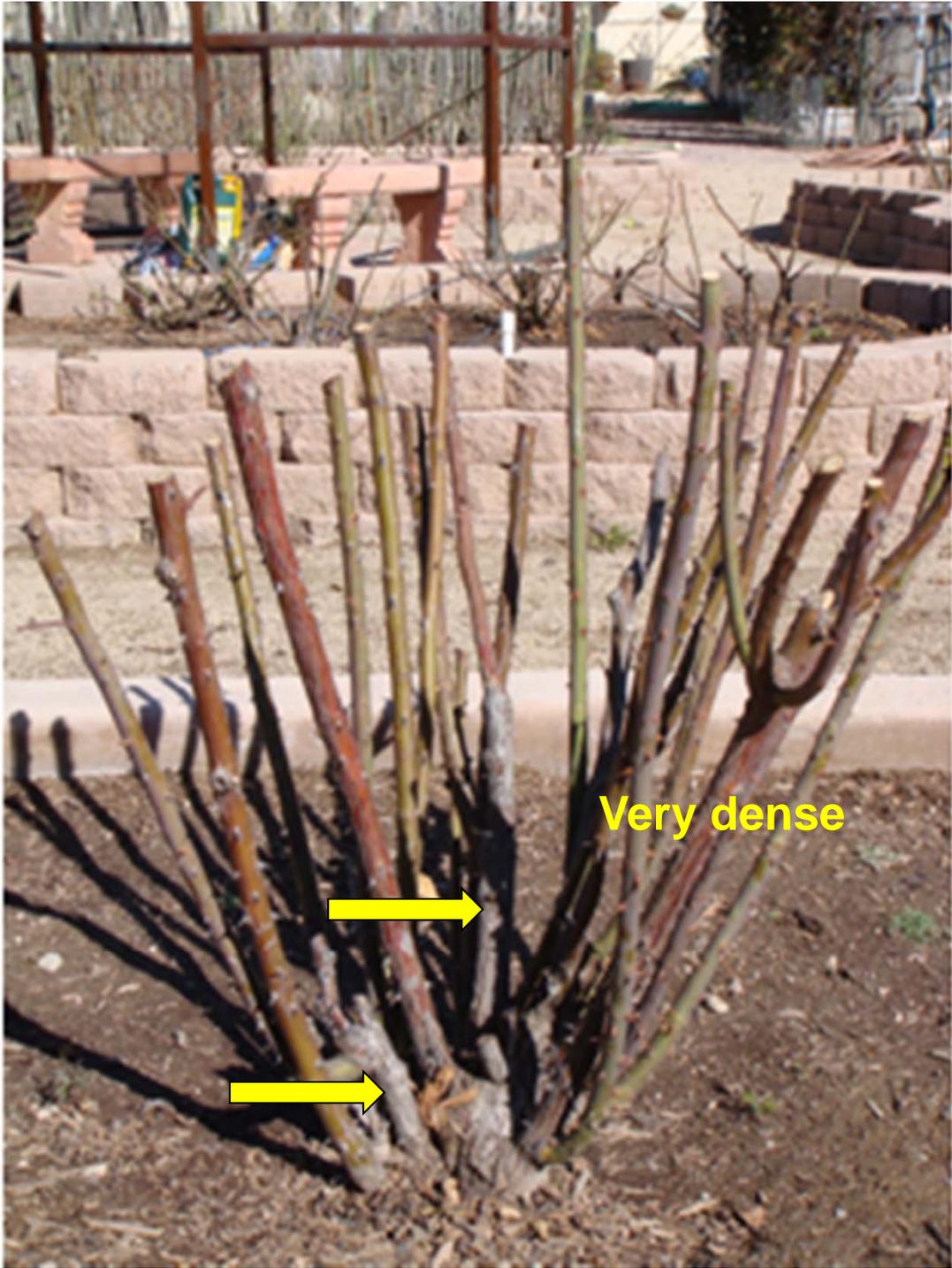
- Remove one third to no more than one half the length of previous season's growth.
- Remove suckers.
- Keep center of shrub open.
- Cut above buds to direct new growth away from the center of the shrub.



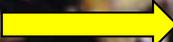
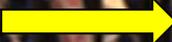
Cut canes above a bud
slanting away from bud

Remove spent flowers to
the newest 5-leaflet leaf





Very dense



Hybrid tea and grandiflora

Hybrid teas have large flowers, one per stem, and are 2-6 ft. tall. Most popular.

Grandiflora (hybrid tea x floribunda) have hybrid tea-type flowers, good for mass color.

- Leave 5-8 canes, more on vigorous shrubs.
- Cut back to a height of 18 to 24 in.
- Cut back new canes by one third.

Floribunda

Floribunda (hybrid tea x polyantha) produce flowers in clusters on vigorous, bushy plants. Good for mass color, hedges, informal borders.

- Leave as many strong new canes as plant has produced.
- Cut back previous season's growth only by one fourth.
- Can be pruned to hedge effect.



Texas olive
(*Cordia boissieri*)
can be grown as
shrub or tree













Shrub pruning summary

- Unless necessary, don't prune.
- Prune at the right time of year.
- Use the natural growth form of a shrub as a guide for naturalistic pruning.
- Don't shear unless required for formal hedges.



Save the date

Desert Horticulture Conference

June 5, 2015

JW Marriott, Starr Pass

Tucson

<http://cals.arizona.edu/deserthort>

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