# *On Young Tree with Branch Ratio Approaching 50%*

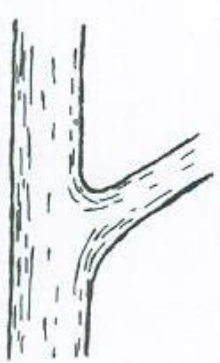
- Slow down branch by:
  - Subordination – cut back to a lateral to reduce wood and leaf area
  - Removal – if impact to tree is not severe (is less than 25% of canopy)
- With subordination, branch growth rate – in girth and elongation – will be slowed

# *Branch Angles*

- Wider branch angles are more desirable (~ 60 - 90°)
- Some cultivars tend to narrower angles
  - Know your tree and its habit
  - Remove or remediate poor angles when young
- Limb spreaders only work well on smaller diameter limbs

# Branch Attachments

Branch attachments should display a wider angle of attachment.



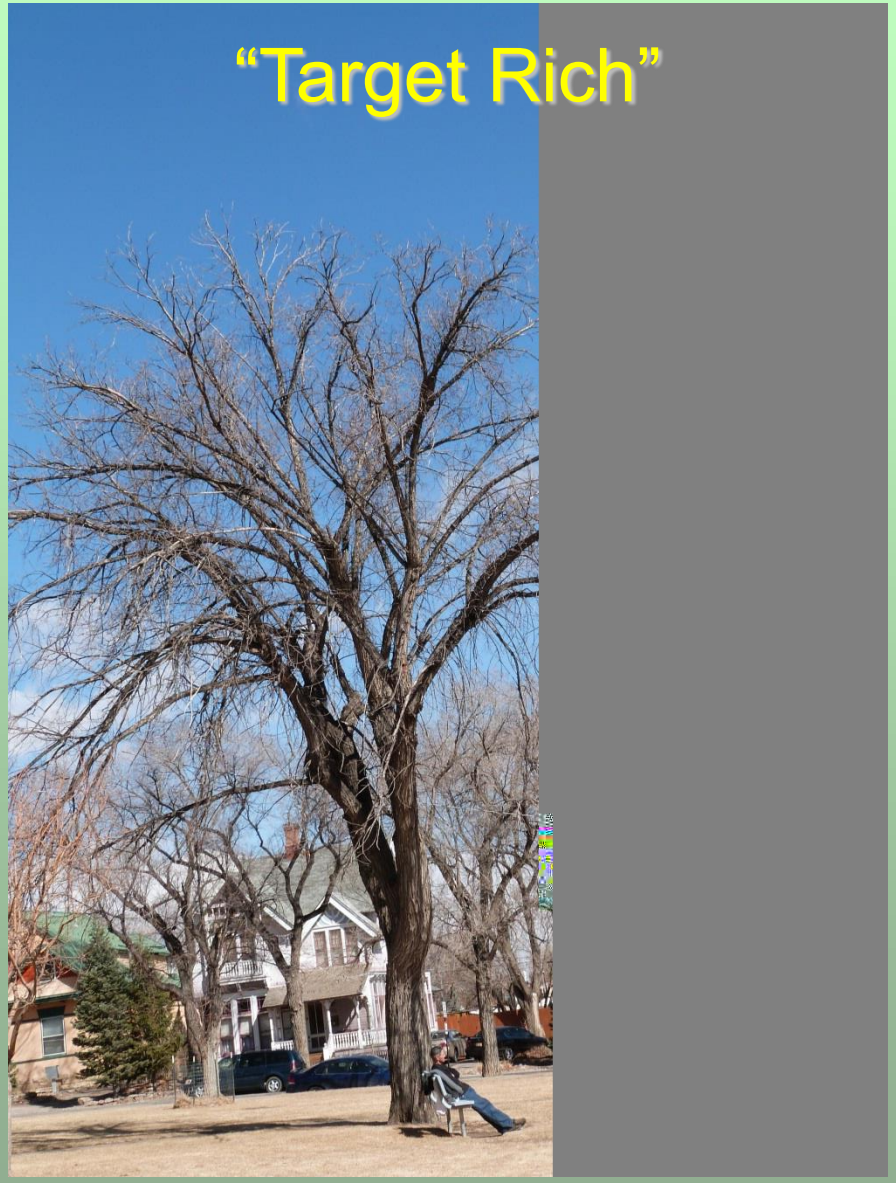
preferable

unacceptable

preferable

unacceptable

# *Co-dominant Stems – Risky Structure*




- Two (or more) stems of ~ the same size coming out of the same point
  - Results in a weak union

# *Co-dominant Stems – with Included Bark*

Branch bark ridge
in the center of this branch union

- When co-dominant stems contain included bark, they are highly prone to failure

# *Co-dominant Real Life Stem vs. Big Wind*

# *Ponderosa Snapped*

# *Snapped at Co-dominant Stem*
## *with Included Bark*

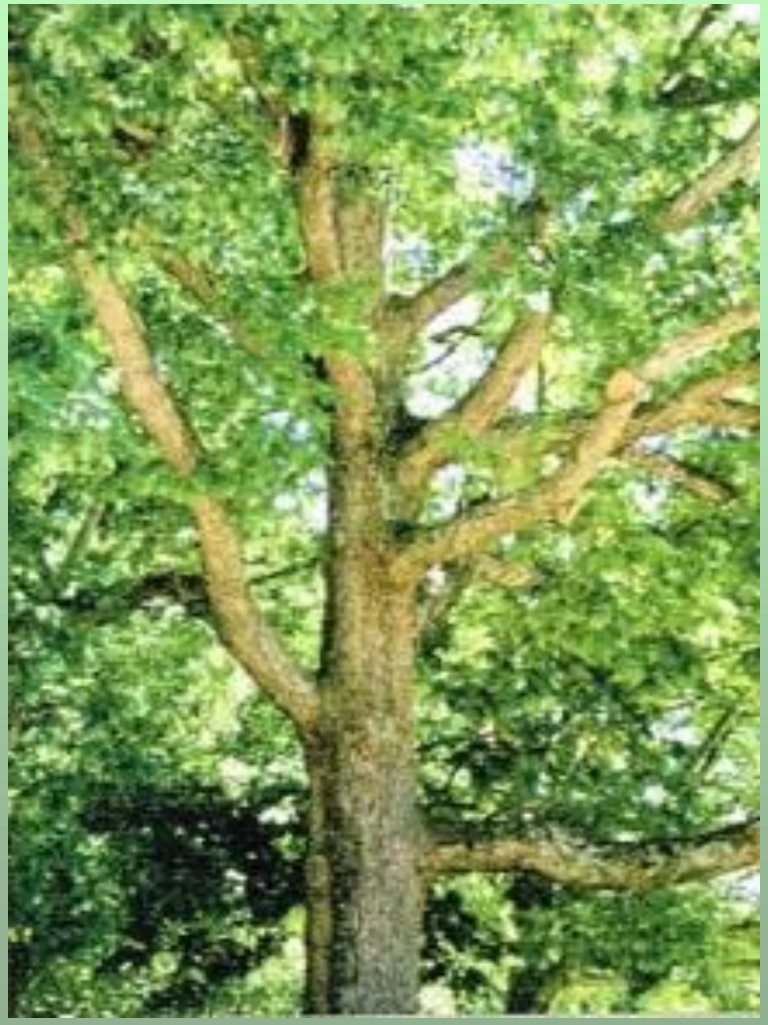
# *The Time to Correct Co-dominant Stems*
## *Is When the Tree Is Small*

- By removal or subordination (reduction cut)

# A Young Tree without Any Training

# *Oh, What a Difference Good Training Makes !*

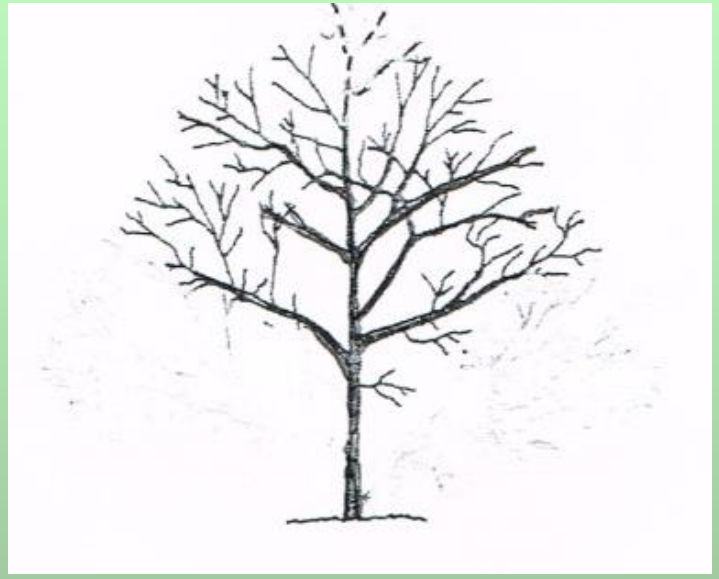
# *Eventually, the Tree Goes Decurrent*
## *And Here is What We Hope for in a Mature Tree*



- Central leader for much of the trunk
- Good trunk taper
- Scaffold branches well spaced vertically and radially
- Good branch ratio- smaller branches arising from trunk
- Good branch angles to trunk
- Absence of co-dominant stems

# *For You Fruit Tree Growers,*
# *Eventual Fruit Tree Shapes*

## Modified Central Leader



For: **Apple**
**Pear**
Apricot
Cherry (some)
Plum (some)

## Delayed Vase

For: **Peach**
Plum (some)
Cherry (some)

# *Here Is an Example of What We Often Get*
# *This Is the Hard Part;*
# *Remedial Pruning of a Neglected or Untrained Tree*

# *Untrained and/or Neglected Trees*

- Are a multi-year project; that from previous slide, 4-5 years
- Require a higher level of knowledge
  - What/where to cut (science)
  - How to cut it so it doesn't look butchered (art)
  - How to get up there to cut it (engineering)
-

# *Working with Big and/or Neglected Trees*

- First and foremost, know your limits
- Tree work can be (and often is) dangerous
- Correcting major defects usually requires a professional
- What to look for in hiring tree work
  - A company (or individual) with an ISA certified arborist on staff
  - Proof of both liability and injury insurance
  - Proper equipment and training to accomplish the job safely
- Then, watch them

# *I Use Simple (But High Quality) Tools*

- Including extremely stable 3-legged orchard ladders
- It's hard to get a good cut with loppers; I don't use them
- If my tools and I can't do the job, I call a professional

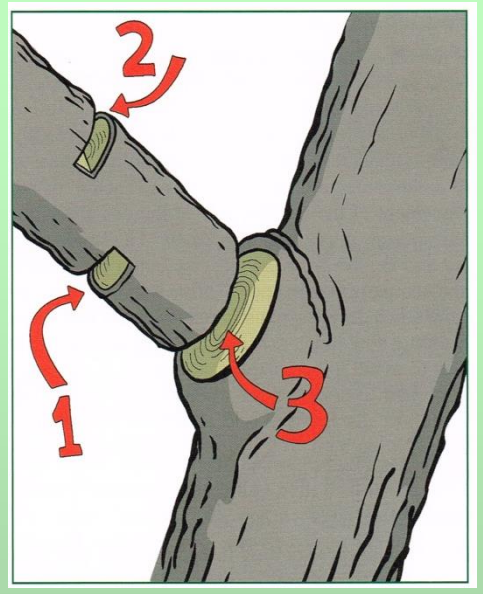
Before pruning close-up.

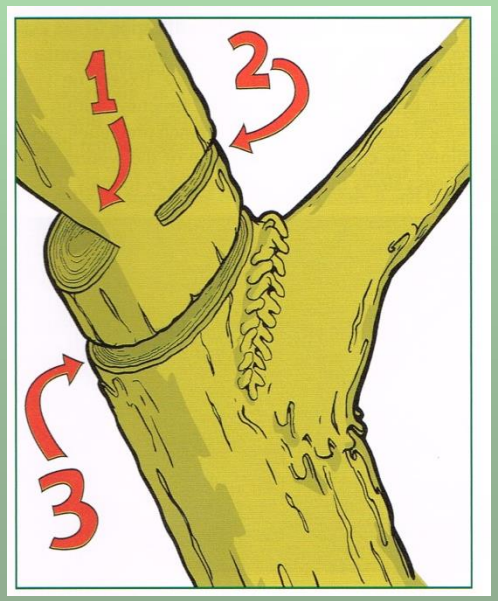
After pruning close-up showing two removal cuts.

One leader, two reduced branches, two removed branches.

Would I / could I do this?
Yes, but probably over 2 years

# *When Cutting a Large Limb*

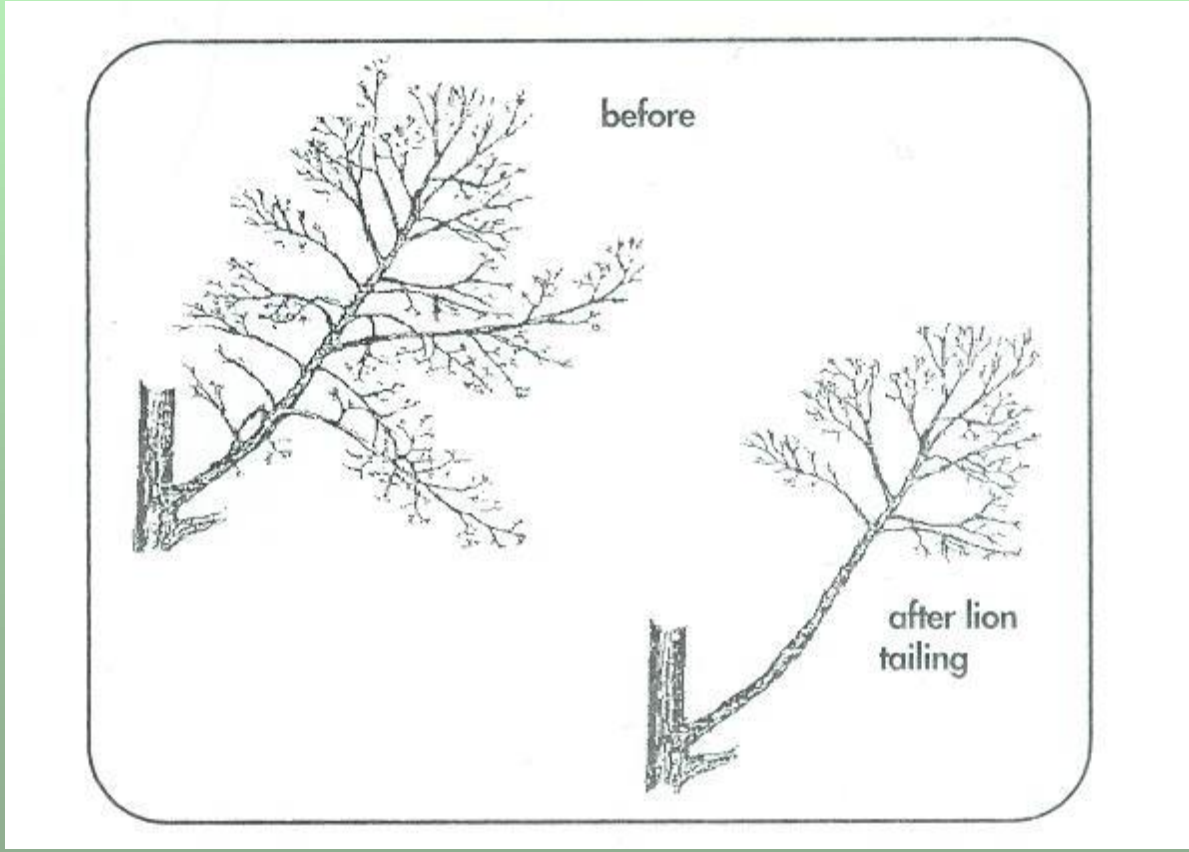



- Take the weight of the limb off first
- Then do finish cut a branch collar
- ( I undercut first, even small finish cuts )

# *Lion Tailing – Injurious to a Tree*

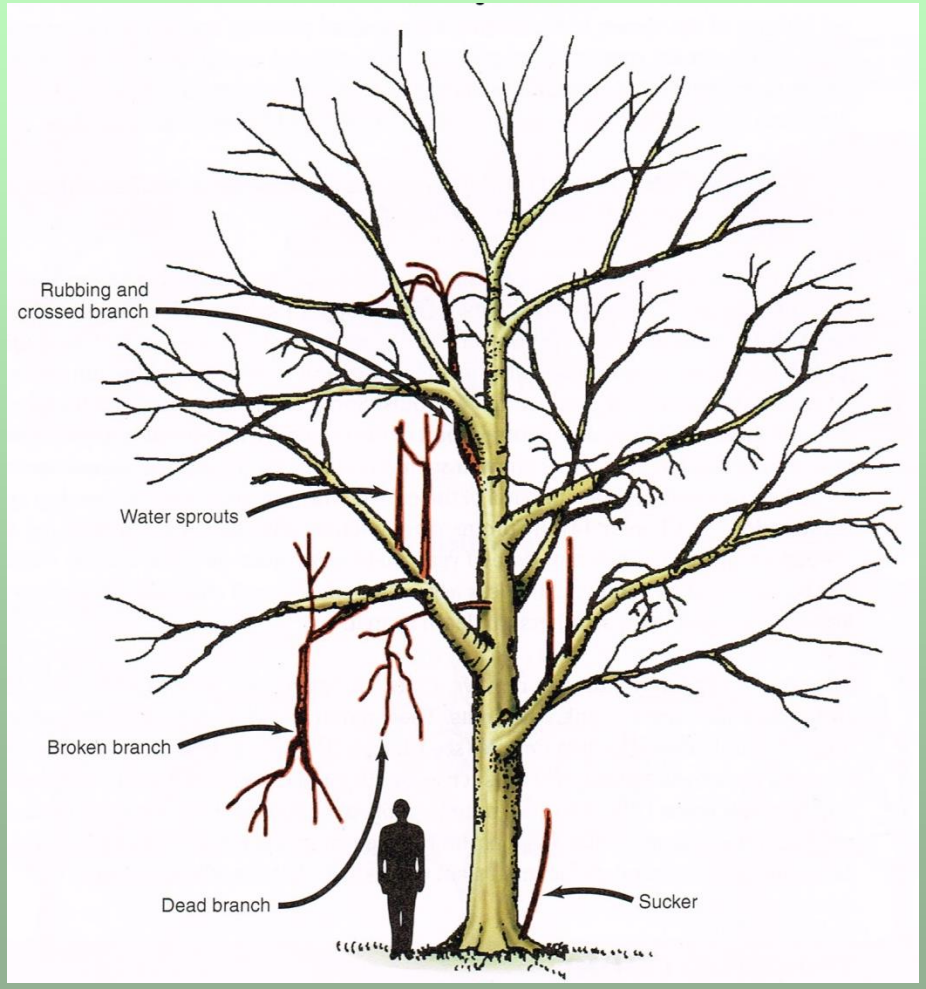
- Stripping out interior branches,
  leaving a plume of foliage at the end



# *Lion Tailing Increases Risk of Failure*

- Reduces food source dramatically
- Greatly increases risk of limb damage in wind or ice storms

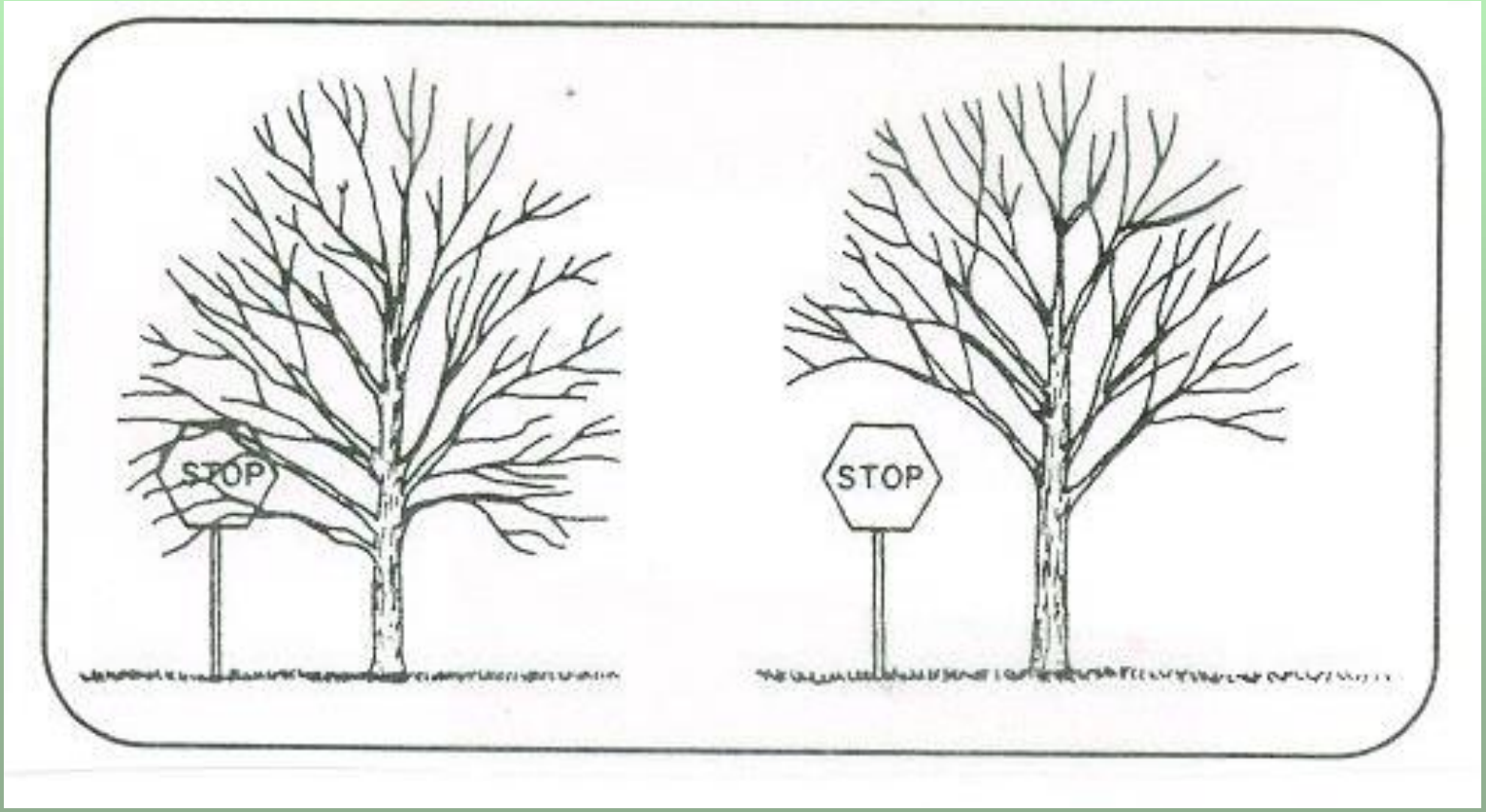
# *Examples of Procedures/Corrections for Mature Trees*




- Crown cleaning
- Removal of dead, diseased, broken branches
- Removal of suckers and water sprouts
- Removal or cutting back of crossing and/or rubbing branches
- Reduction of branchlets which will soon grow into others

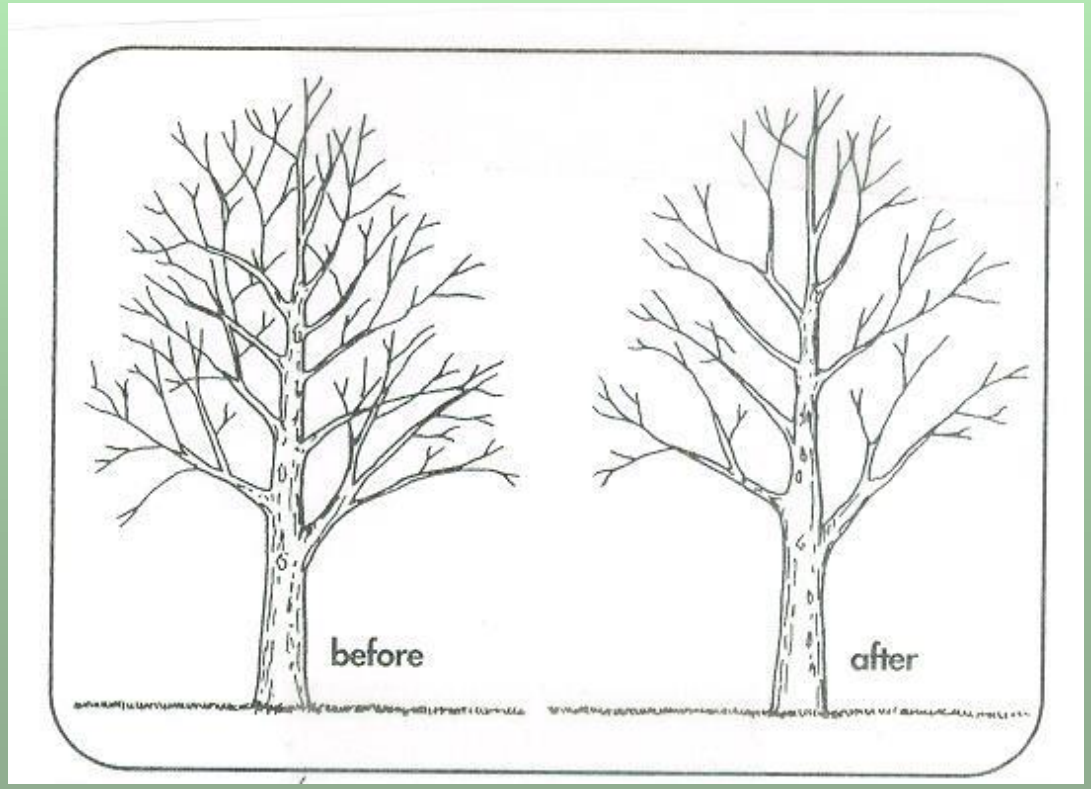
# *Mature Trees – Crown Raising*

- **Removal of lower limbs to provide clearance for**
  - People - Signs - Vistas, etc.
- **Should be done over years to prevent hurting trunk taper**



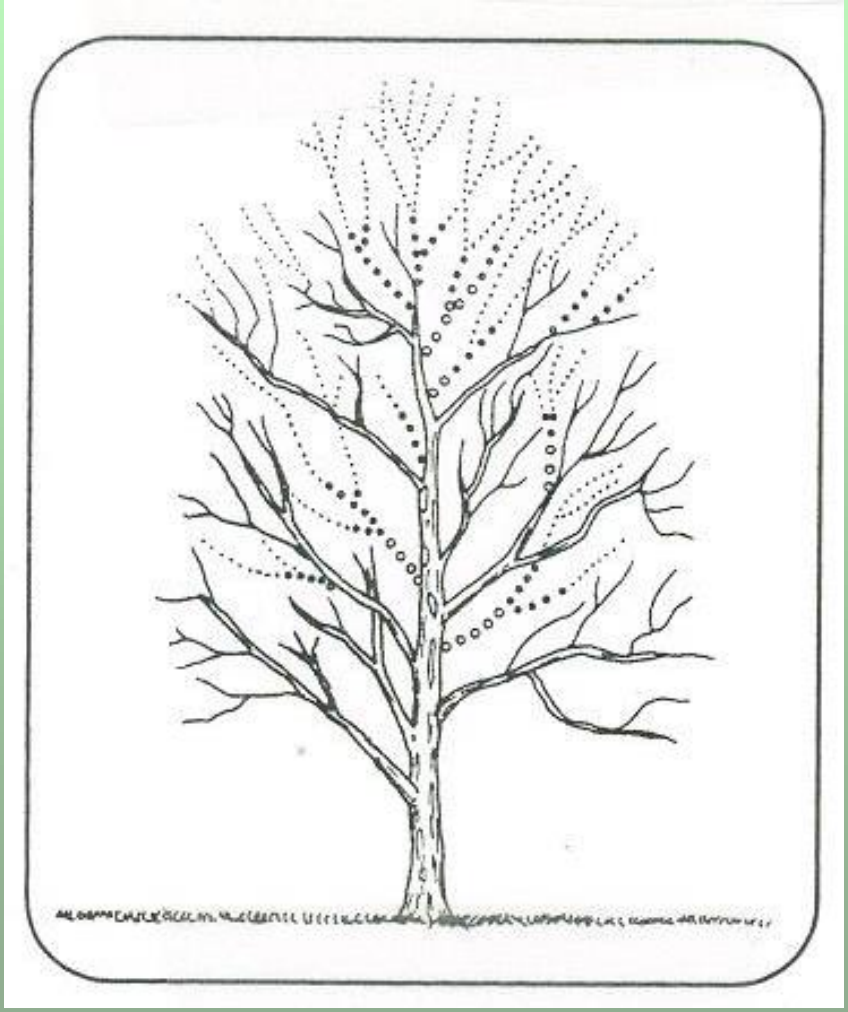
# *Mature Trees – Crown Thinning*

- **Selective removal of branches to**
  - Increase light penetration and air movement
  - Reduce wind-sail effect
  - Relieve weight of heavy limbs
  - Maintain structural beauty and natural shape
- **Crown thinning is only successful on trees without major structural defects**



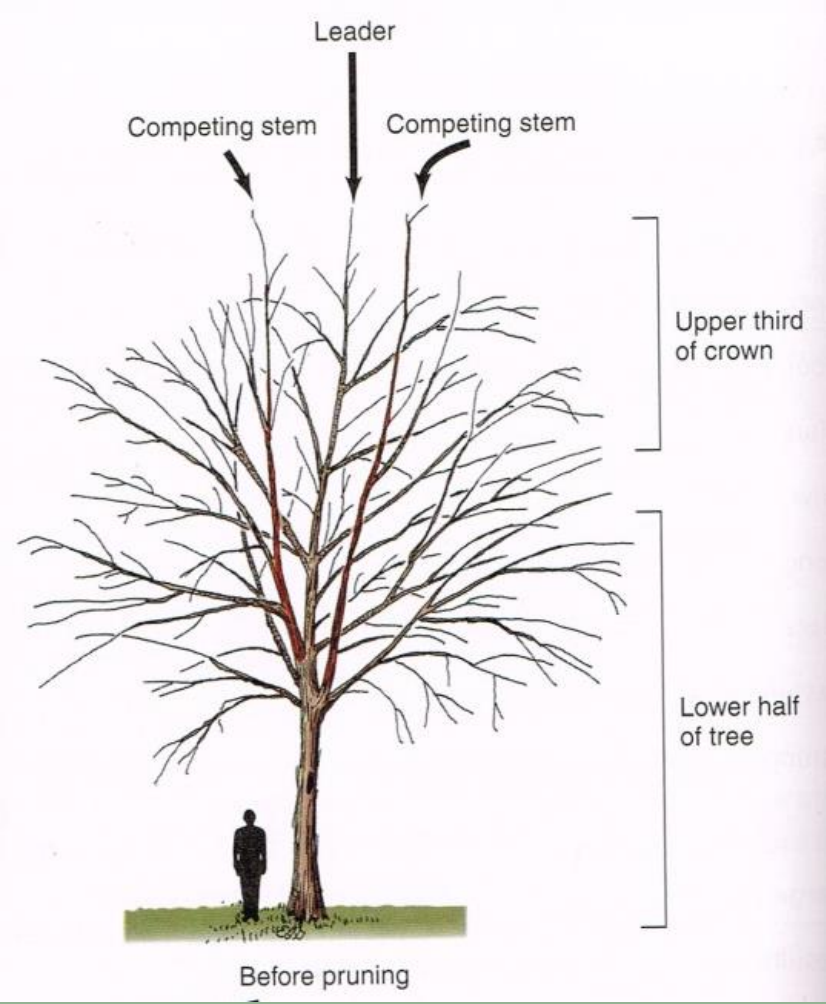
# *Mature Trees – Crown Reduction*

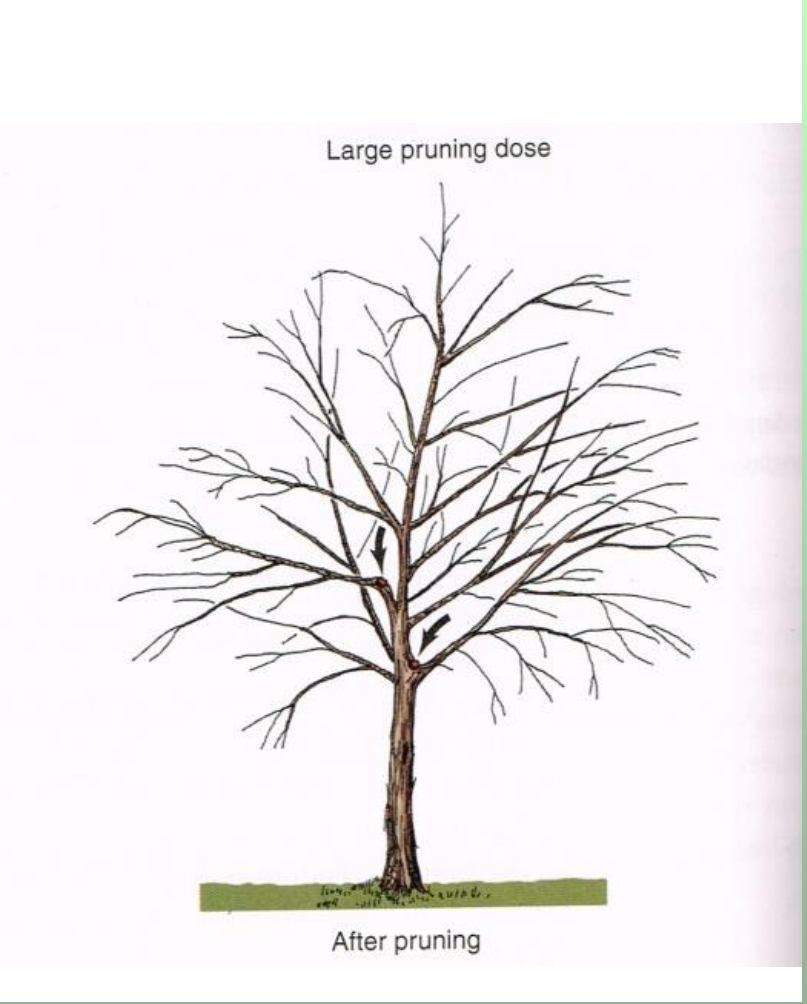
- **This is the alternative to “topping”**
- **Selectively cut back limbs to reduce height of tree**



- Done over 3 years in this illustration
- Pruning back to viable laterals, only

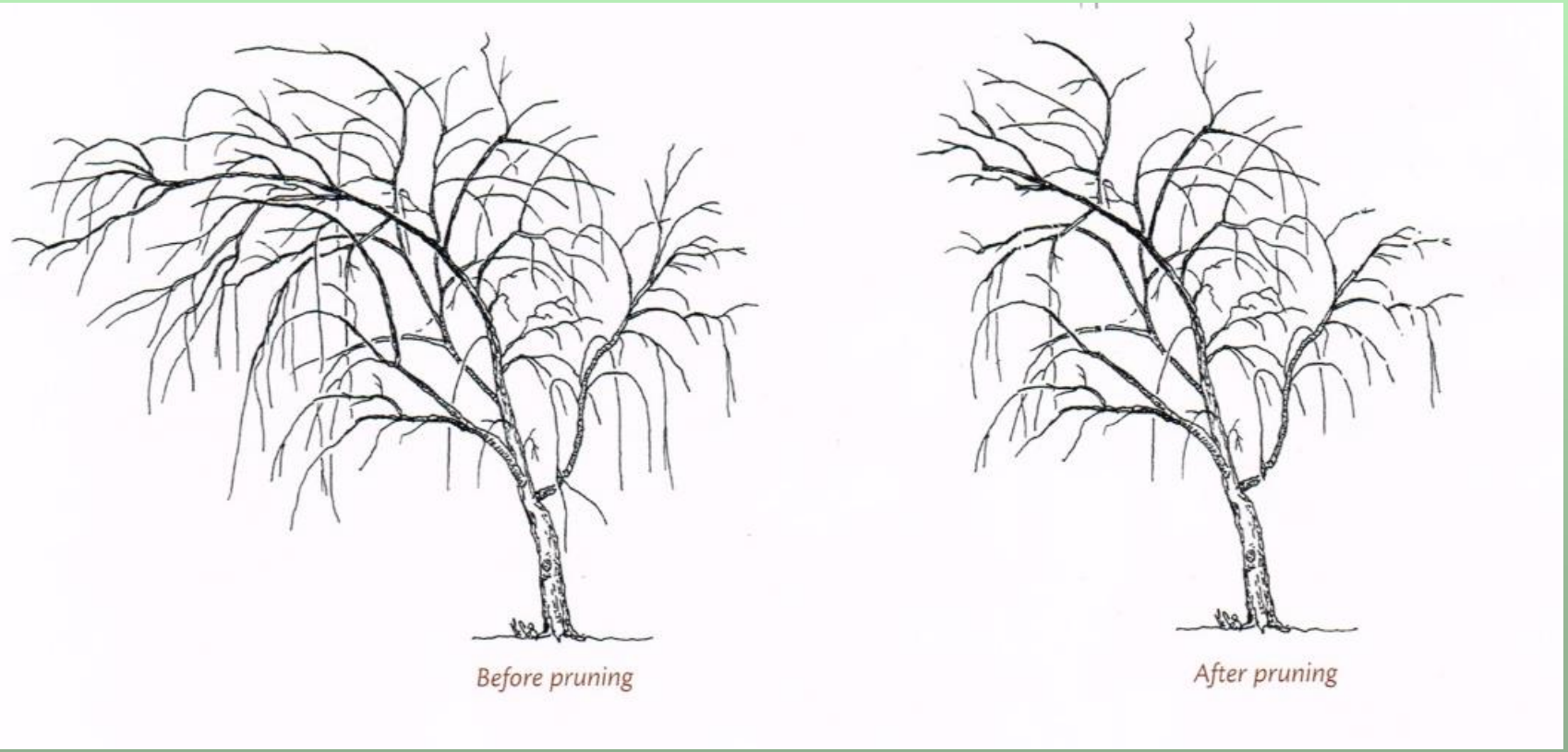
# *Mature Trees – Correcting Competing Stems*



# *Over-extended Limb Reduction*

- **Using reductions/cuts to laterals**
- **Also helps to balance weight of canopy**
- **Helps with slightly leaning tree**



# *I Think This Leaner Is Too Far Gone*

- It was shaded almost completely by huge elms (since gone)
- Trunk taper is marginal, if any
- It has an electrical conflict
- The Las Vegas Tree Board is a committee

# *For Fruit Tree Growers*

- **Eventually reduce the central leader to scaffold branches**
- **Thereafter, make reduction cuts to laterals**
  - To keep tree within bounds
  - To keep fruit accessible
- **Prune to shade the SW side of trunk to avoid sunscald**

# *Final Thoughts – Part One*

- **Get down off your ladder frequently,**
  **step back and look at the tree**

- **Do not feel bad about endearingly funky trees IF**
  - They are relatively small
  - They aren't going to injure anyone or damage any property

# *Final Final Thoughts on Pruning*

- **There is a lot of joy in knowing what you are doing**
- **It's a process … this is just a beginning**

*Thanks for Listening !*