



Pruning Dosage:

Excessive Thinning of Mature Trees Will Cause Decline

Traditional practices are not always best.

The more we learn about trees, the more we realize some traditional practices are harmful. Such is the case with excessive tree thinning. Often, for mature trees, it is more destructive than beneficial.

Your tree is an energy system.

Tree wood is made of living cells. These cells transport, metabolize, store energy and react to intrusions. Generally, the more energy stored, the healthier the tree. All tree care practices must be designed to increase stored energy.

How does excessive thinning injure a mature tree?

Live tissue needs a continuous food supply. A tree manufactures this carbohydrate energy in

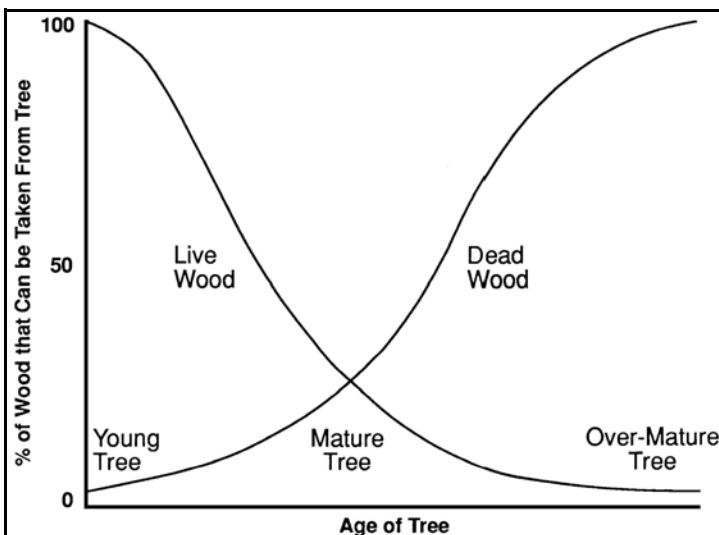
the chlorophyll regions of the tree, principally the leaves and small diameter branches. Pruning live wood removes these important food manufacturing sources. This damage immediately results in a substantial net loss of energy, and can lead to serious consequences for a tree low in stored energy. A tree in this condition is weak and susceptible to pathogens. Unfortunately, if a tree cannot replace its energy producers, it will decline. A declining tree is one which uses more stored energy than it can make. This becomes visible as die-back and often takes 3-15 years to recognize.

MYTH: Trees break in high winds because they are too full.

Trees do not form sails in high winds. Branches break because they have weak branch junctions, decay pockets, or are brittle from poor health. Improper pruning cuts are access points for decay and disease. Inappropriate thinning actually makes a tree more prone to wind damage by exposing the remaining branches to more of the winds force. The loss of strong, healthy, live tissue will mean a loss of stored energy in the tree and an increase in dead non-responsive tissue. Dead tissue is more prone to decay organisms.

FACT: Poor soil conditions, not wind, are a tree's worst enemy.

The most serious problems faced by trees in our urban environment are not wind or storms, but rather problems associated with the soil. Lack of nutrients, over-watering, soil compaction, and herbicides all contribute to the fact that yard trees live an average of one fourth the life span of a tree in a woodland environment.



(Diagram from *Modern Arboriculture*, Dr. Alex Shigo)

A larger percentage of living wood in the canopy of young trees can be safely removed than in older trees. As the tree reaches maturity there is an increase percentage of deadwood removal, and very little living tissue should be removed,