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Type of Pruning Depends on Age of Tree

"Pruning is the single best 'investment' a property owner or community can make to ensure survival and lengthen the life span of their trees," according to Robert Rouse, staff arborist for the National Arborist Association (NAA). However, pruning performed incorrectly can damage or even kill your valuable tree.

"Older trees require more consideration before pruning," cautions Rouse. "When you prune a tree, you need to take into account both the tree's health and its stage in life. Older trees, or trees with health problems, cannot withstand pruning as easily as younger, vigorously growing trees."

When a pruning cut is made the tree has to both defend the newly exposed tissue from invading diseases and insects and somehow replace the lost living tissue that was pruned off. The life span of a tree is determined by a number of factors, including its pattern of tree growth, maintenance history and environment. Because of these factors, age alone is not a good determination of a tree's potential life span. Instead, arborists categorize trees by "life stages." After determining what life stage a tree is in and its overall health, the professional arborist can then decide how to prune.

The first stage is **establishment** and includes seedlings and transplants. The key factor is that the tree concentrates growth on root system development and top growth. Often the tree is competing with other plants for space and resources. In this stage, pruning should be limited to crown cleaning. Little or no leaf tissue should be removed since the tree is relying on food produced in those leaves to fuel growth.

The next stage is **juvenile**. In this stage trees are established in their environment and grow at their most rapid pace. The have ample energy to run an active defensive system against invading diseases and insects, so they can withstand pruning well. They are also able to simply outgrow many of the invaders. This is the time that structural pruning to develop good branch structure should be done. This type of pruning will help eliminate major branch defects that will cause limb failure in the future.

The **mature** stage is next. Growth continues at a slower, steady pace. The tree may self-prune some of its branches that are no longer productive. The tree has a good balance of energy reserves, allowing it to fight diseases effectively. However, the option to outgrow diseases is diminished. Crown thinning can be done at this time to improve tree health and structure.

The **post-mature (over-mature, past mature)** stage is characterized by both a very slow growth rate and by intolerance to disturbances. Energy reserves in the post-mature tree become limited. The tree itself is healthy, however any disturbance resulting in the removal and/or death of living tissue will have adverse effects. The post-mature tree has limited energy reserves to fight invading diseases and insects, especially at pruning wounds. Because of these factors, post-mature tree pruning is usually limited to crown cleaning. Removal of live tissues is avoided. With proper maintenance, a post-mature tree can remain healthy for a long period of time.

Senescence (declining) is the final life stage of a tree. The senescent tree has lost the ability to defend itself effectively from invading organisms. Senescence often begins as a result of trauma such as a lightning strike, over pruning, construction injures, etc. The invading organisms overcome the tree's defenses and cause tissue death and/or internal wood decays. Major limbs succumb to the diseases, eventually breaking off the tree. The trunk usually becomes hollow. Hazard-reduction pruning removes hazardous and/or dead limbs. Senescent trees may have some useful life left in them, but there are no measures that can be taken to restore the health of the tree. The tree should be removed once the potential hazards and cost of maintaining the tree outweigh the benefits.