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262-538-1900

www.healthytrees.com  
wachtel@wachteltree.com



## It Is Never Just One Thing

by Bill Reichenbach, Certified Arborist WI-0188A

**R**arely does any one factor determine the final outcome, from a single event in life or in nature. It is just too complicated; so many factors come into play over the course of time that determine the final outcome. This is certainly true with trees and tree health. Trees in developed landscapes and in the forest are continually subjected to various **stress factors** that, depending upon circumstances, can lead to decline and eventual death of a tree.

Tree stress may result from a natural causal agent or may be from human activity. A myriad of factors may be involved which may include, but is not limited to, some of the following:

- Improper planting depth / poor tree selection
- Nutrient poor / poorly drained / poorly aerated / compacted soils
- Drought
- Overwatering / flooding
- Mechanical damage – physical injury
- Insect damage – defoliation / vectors for pathogens
- Disease organisms – defoliation / cankers / root and trunk rots / vascular wilts
- Severe weather – cold / heat / storm damage
- Improper pruning
- Root damage – from construction activities / soil cuts / fills
- Competing vegetation – turf grass

Generally, if only one factor is involved, a vigorous, healthy tree can tolerate a single stress event. Unfortunately, this is typically not what happens. Usually multiple factors are involved and build over time.

**Predisposing factors** are long-term. Often, climate, site, age, genetic predisposition and construction activity

are predisposing factors. These may not lead to obvious problems, but predispose trees to ►

**Inciting factors** are short-term. Events like insect defoliation, frost damage or drought are examples of inciting factors. If not for the predisposing factors, trees could recover, but predisposed trees go into decline and are vulnerable to ►



*Proper pruning is one thing that improves tree health, longevity and appearance!*

**Contributing factors** may be opportunistic fungi like Armillaria root rot and insects such as bark beetles. These can be the straw that breaks the proverbial camel's back. They finish off the tree, but normally would not do so unless the tree was already declining from the cumulative effect of consecutive stresses.

Trees cannot move and leave a stressful situation, and many stress factors are often at work over the course of the year(s). When it comes to developing a management plan for confronting stress, multiple procedures and treatments need to be considered. Ensuring long-term tree health and beauty is typically accomplished by employing a variety of plant health care procedures over the years.

First, it is best to start with a quality tree, properly planted, that is matched to the site. Next, water and mulch properly through the years to relieve moisture stress and build healthier soils. Control insect and disease issues preventatively and as they arise, many of which are with us year after year. Fertilizing will add needed nutrients that are often limited in disturbed soils and when trees are competing with turf grass. Improve root health with mycorrhizae and compost teas. Proper pruning will remove dead and diseased wood and improve structural integrity.

Your trees are valuable assets subject to a variety of stresses through the years. We need to reduce and ameliorate those as we can, and remember, it is never just one thing.