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NEWS RELEASE

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Tree Decline

We think of the Bakersfield area as the garden spot of California, and trees are a part of the attraction of our fair city. Trees pass through the circle of life, i.e. growth, maturity, decline and death, and in Kern County they do so more rapidly than in many other locations. Unfortunately, most trees in landscapes do not live to great age in Kern County in part because the Kern climate often does not resemble where respective shade trees grow naturally. More specifically, stresses caused by warm summer temperatures, low humidity, and alkaline soils can shorten tree longevity. Perhaps the most obvious example is coast redwood, *Sequoia sempirvirens*, remarkably successful in Bakersfield considering mountain locations of natural stands, but frequently displaying needle discoloration even in young trees due to stress.

The term decline refers to progressive loss of vigor and health. Decline may include slow growth, sparse foliage, dieback and undersized foliage. Decline is an inclusive word where more specific causes of a malady may not be known, and trees exhibiting poor growth often do not have one identifiable cause responsible for their decline. Insects, fungi, microorganisms, and the growing environment may all contribute. Sometimes the word "pressure" is used to describe the effect on trees of parts of the environment which are not favorable.

Decline because of age is to be expected. Trees of the same species and similar ages may simply decline together without a specific infectious agent moving among them.

Decline can be caused by perennial or continual irritation by one factor, e.g., decline of pin oaks due to inadequate uptake of iron. Many tree species can be affected by drought stress or sunburn. Also, as trees become larger, demand for water increases, and so previously adequate irrigation may become limiting. Trees weakened by these factors become abnormally susceptible to fungi and insects, especially boring insects.

Decline can be caused by drastic injury plus secondary stress, e.g., the decline of native oaks after root loss as the result of construction of excavation. Although less severe a consequence, sycamore or ash may be affected by defoliation caused by anthracnose. Defoliation is most damaging if the foliage is removed just as leaves become fully expanded. This loss triggers a second flush growth during the same season, and the replacement of growth depletes the stored carbohydrate reserves of the tree and leaves it more susceptible to attack by secondary insects.

Decline can be caused by contributing factors such as girdling roots, restricted rooting space leading to water stress, cankers and water molds, soil compaction, or severe trunk wounds. Trees in parking lot plantings often have very small soil volumes for roots with resulting stress, stunting, and short life.

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