



## NEWS RELEASE From . . .

University of California,  
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### **LARGE BRANCHES MAY DROP ON HOT SUMMER DAYS**

Over the last couple of weeks a phenomenon known as “summer branch drop” has been apparent throughout the area. Also called “sudden limb failure,” the phenomenon occurs during periods of very hot weather when apparently sound, relatively large limbs break out of large, mature shade trees. Since most people think that branches only break during windy conditions, a large branch crashing to the ground on a hot and calm day causes some excitement.

Branches that fail due to summer branch drop are usually long and horizontal, rather than more upright. Oddly enough, many times the break occurs along the length of the branch somewhere, rather than at its point of attachment to the trunk. While some broken branches may have wounds or areas of wood decay, many that drop are free of any obvious defects and appear sound. Therefore, summer branch drop is very difficult to predict.

There is still no generally accepted explanation for the phenomenon. However, most tree experts believe lack of adequate soil moisture, or drought stress, is to blame. This is a bit difficult to explain, since branches actually become lighter during hot weather as they lose more water from leaves than they gain from the root system. Studies have shown that branches actually shrink and rise during summer afternoons. Another theory is that water stress causes the concentration of ethylene, a plant hormone, to increase. Ethylene is a gas produced by all plants that effects all stages of plant growth and development, including processes involved in cell aging. There is a possibility that increases in ethylene could dissolve the cementation of cell walls in the wood, causing the branch to break. Others suggest that internal cracks in large branches, caused by wounds or improper pruning, eventually spread outward, causing the branch to fracture.

Whichever explanation of summer branch drop you choose to believe, the important thing is to minimize the hazards of branch drop whenever possible. In the Northern San Joaquin Valley branch drop may occur in ash, cedar, elm, eucalyptus, giant sequoia, Japanese pagoda tree, liquidambar, oak, pine, poplar, silk oak, silver maple, and tree of heaven. Old trees of low vigor are apparently more prone to the problem. Once a tree has lost a branch to summer branch drop, the tree is likely to lose another. Consider the following actions to reduce the hazard of summer branch drop:

- In susceptible trees, consider removing or reducing the weight of long, horizontal branches.
- Move benches and other facilities from beneath old trees known to be susceptible to the problem.
- Inspect mature, large trees on a regular schedule, and remove low-vigor limbs and limbs with structural defects.
- Keep trees healthy by watering and pruning properly.