

Below, we have compiled some information regarding Codominant Stems and the risks they pose to trees. This is extremely common in trees we find in the Valley, particularly in Willow *Acacia salicina*.

Information below from University of Florida

<http://hort.ifas.ufl.edu/woody/trunk-and-branches.shtml>

Codominant stems, trunk and branch structure

Trunks need enough wood tissue [arranged appropriately](#) to hold the tree up in stormy weather. Branches well attached to the trunk can remain secured for a long time (left and center photos). Weakly attached branches (right photo) can [split](#) from the tree. Trees with weakly attached branches fail more often than trees without these defects.

The two **codominant stems** on the right are weakly attached because they are the same size and because of the bark inclusion between them. The codominant stems below are better attached because there is no bark inclusion. Cabling and bracing can be used to help hold certain trees together (**See: [cabling and bracing](#)**). Trees can also be structurally pruned to either prevent or modify the impact of this defect.



Information below from University of Massachusetts

http://www.umass.edu/urbantree/factsheets/35codominantstems_rev1.html

Codominant Stems

What does that refer to?

- The term "codominant stems" is used to describe 2 or more main stems (or "leaders") that are about the same diameter and emerge from the same location on the main trunk.
- As the tree grows older, the stems remain similar in size without any single one becoming dominant.

Why are such stems important to recognize?

- **Codominant stems tend to fail much more often than others**, especially in storms.
- Though such stems may look fine to the casual observer, they may actually be dangerous.
- Early recognition of such stems allows remedial action when it does the most good.
- Many of our most common street, highway, and park trees commonly form codominant stems.
 - Maples and oaks
 - Conifers that have lost the terminal during development

How can you tell if there is a serious problem?

- Classifying codominant stems into 3 risk stages can aid in their management:
 - **Risk Stage 1:** does the union between the two stems form a "V" but there are no other symptoms?
 - A "V" union is much more likely to fail than a "U"
 - Stems with a "V" union compress bark between them as they grow, leaving little physical connection
 - **Risk Stage 2:** are there symptoms of decay in the union?

- Can you see rotted matter between the stems?
- Is there any fluid flowing from the union?
- Are there woody plants growing in the union?
- Do you see wide "ears" (swelling) on either side of the union?
- **Risk Stage 3:** is there any sign of failure?
 - Can you see any cracks in the union itself?
 - Is reaction wood being formed rapidly at the base of the stems?

What can be done about them?

- **Risk Stage 1**
 - If the tree is young enough, prune out one of the stems; the tree will fill in the missing canopy
 - For codominant stems greater than about 4" in diameter, pruning out one stem can cause more problems than it solves
 - It leaves an unbalanced crown susceptible to mechanical failure
 - It creates a large open wound susceptible to decay fungi
- **Risk Stage 2**
 - Carry out an aerial inspection, probing the union itself to estimate its depth
 - Reduce the end weight of the stems through proper crown reduction techniques
 - For specimen trees, cabling and pruning can help in some situations
 - You need a balanced crown and sound wood in the upper leaders for attaching hardware
 - Make sure any such work follows the ANSI A300 standards
 - When the stem is large and you can not cable, consider removing the tree--especially when there is a significant target such as a busy road or inhabited building
 - Use a drill or other tool (such as a Resistograph®) to determine the thickness of sound wood
 - There are no firm published criteria, but look for at least 1" of sound wood for each 6" of attached stem diameter
 - The longer the stem above the union, the greater the breaking force, so give yourself an extra margin of safety for long stems, particularly those with lots of foliage
- **Risk Stage 3**
 - If there is a crack or other indication of incipient failure, remove the tree as soon as possible--especially if there is any kind of target