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Species and Condition Depreciation Factors in Plant Appraisal

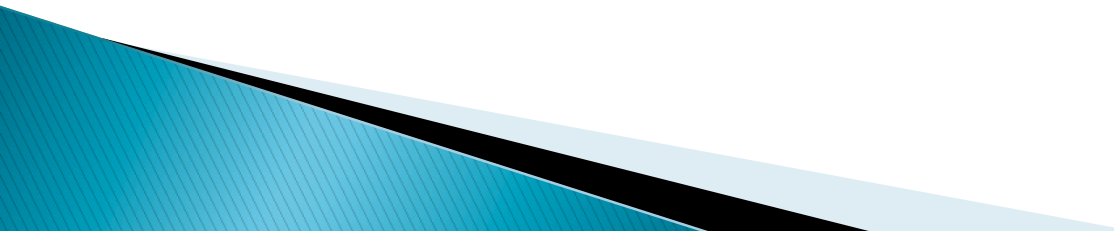
IUFC Annual Workshop
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CONDITION

The use of the CONDITION factor

- ▶ The condition factor is a number from 1% to 100% that is used to depreciate the tree value derived by any cost method.
- ▶ It is usually rated in increments of 10% but using the method we will discuss, it may be much more deterministic.

The Question:

- ▶ Will the tree die early due to
 - A current insect infestation
 - A current disease
 - other condition (toxic chemicals, compaction, pH)
 - ▶ What is the risk of failure especially if there are targets in the vicinity? Has it changed?
 - ▶ Does the tree function in the landscape the same way as it did before an injury?
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This requires a critical evaluation of the findings

- ▶ Some conditions rarely impact tree health and can be ignored
 - Sycamore blight
 - Diamond scale
 - Sycamore borer in oak and sycamore
- ▶ Others depend on severity
 - Mistletoe
 - Wood decay
 - Oak root fungus
 - pH

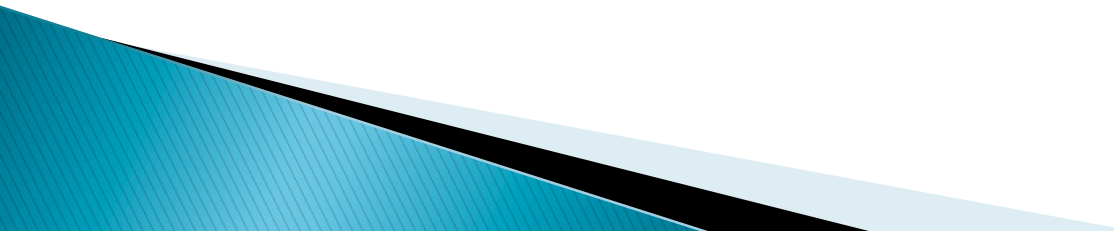
The tree is a Modesto ash.

Is it dead?

Do you need more information?



What it takes to be a good judge of CONDITION

- ▶ Should know what the tree looks like in health
 - ▶ Must be knowledgeable about tree health factors (it helps to have a Plant Pathology degree)
 - ▶ Must know about mechanical properties of trees
 - ▶ Requires the skills of an investigator
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Method suggested in the “Guide”

- ▶ Scoring system rates 5 “factors” of a tree on a scale of 1–4 as follows:
 - 1 no apparent problem
 - 2 minor problem
 - 3 major problem
 - 4 extreme problem

The 5 “factors” to be rated

Factor:

- ▶ Roots
- ▶ Trunk
- ▶ Scaffold branches
- ▶ Small branches and twigs
- ▶ Foliage and/or buds

Rated for:

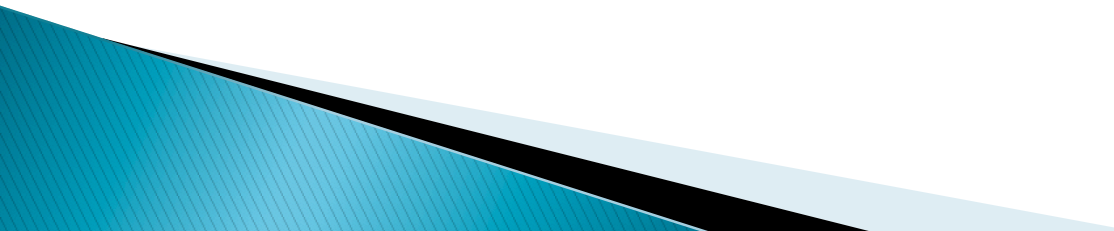
- ▶ Health and Structure
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- ▶ Health only
- ▶ Health only

There are 8 ratings worth 4 points for each. Add the “factor” scores, divide by 32 and multiply the fraction by 100 to get the percentage for dep

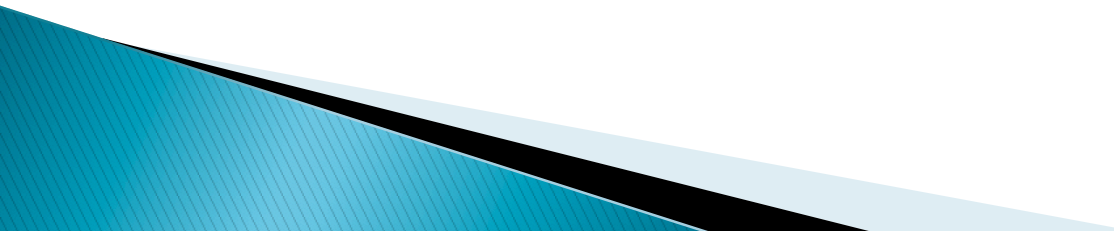
Why I don't like this method

- ▶ Many defects within the factor of roots, trunk or scaffold could reduce condition to 0% but not necessarily in the numerical process.
- ▶ I have difficulty with the idea that a disease or insect infestation of the leaves could be as significant as a similar problem on the trunk or scaffold branches

More issues with the method:

- ▶ It gives the appearance of precision but still requires judgment of the assessor to rate the seriousness of the problem within the factor
 - ▶ I have seen assessors use this process when the tree was removed before they appraised it.
 - ▶ There is nothing here about appearance of the crown. Where does it fit in?
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How I judge condition

- ▶ I look at the entire situation and determine what the key risk factors are, ignoring most others as not significant.
 - ▶ I then judge how the key risks affect the tree's expected longevity and assign a rating.
 - ▶ I think it is similar to facial recognition – I don't need to fill out a check sheet to know that the a person in my presence is someone I know.
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Complications

- ▶ In order to know the implications of a problem, you have to know what the problem is
 - You may have determined that shoot growth or annual trunk growth has slowed dramatically in recent years.
 - This alone doesn't tell you if the condition is permanent or whether it can be alleviated

More complications

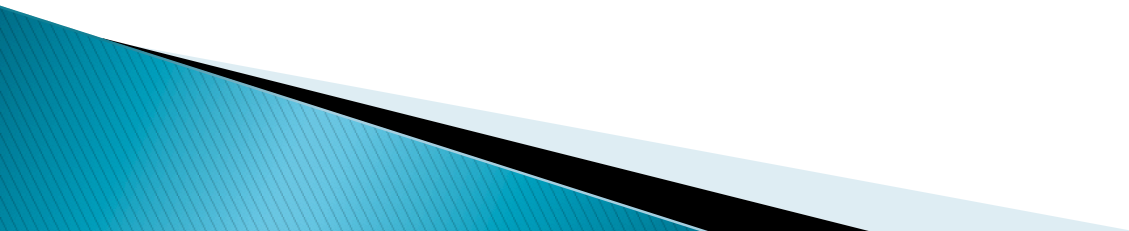
- ▶ Condition problems may be correctable.
 - Assess the tree as though the problem were corrected and subtract the cost of the correction from the value
- ▶ You may be asked what the loss in value has been
 - Identify the value before the injury
 - Assess the value after the injury
 - The difference is the loss
 - DO NOT just multiply the pre-injury value by the % change in condition

Still more:

- ▶ The tree is gone!
 - Try to find photographs
 - Pre damage
 - Post damage
 - Aerial photographs
 - Try to get a description of the tree (for what it's worth)
 - Be conservative: use lower values when working for the injured party than if working for the defendant

Yet more complications

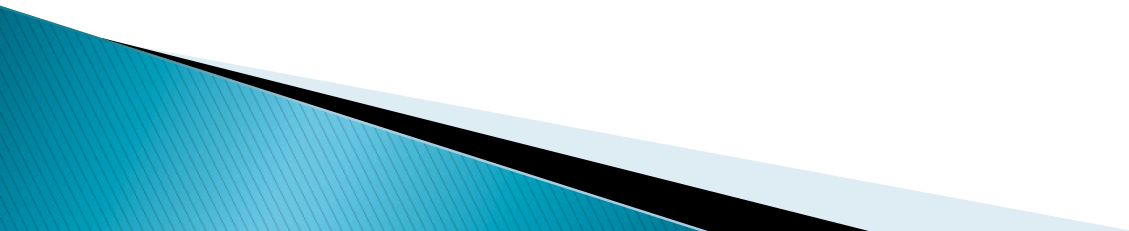
- ▶ A tree that has been damaged by construction but it takes years for the injury to manifest



And still more

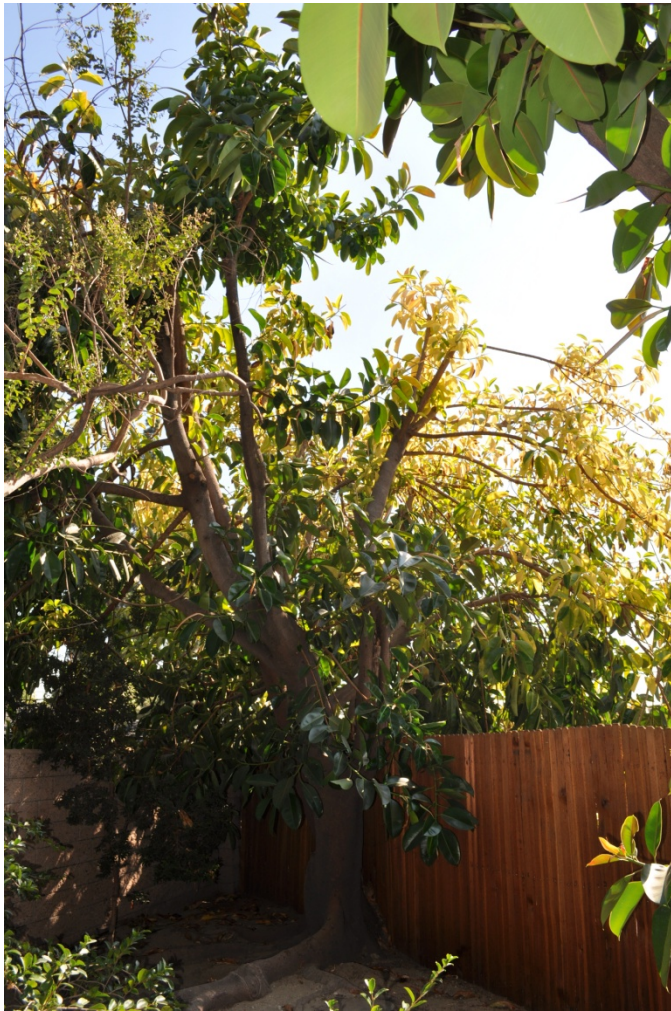
- ▶ Consider the season and seasonal changes
 - Several evergreen trees lose leaves just before or just after bud growth and can look awful for a brief period
 - Insects or diseases may make foliage look awful but new foliage replaces the damaged foliage in time
 - Some diseases appear only periodically over a course of years

Can you think of trees that have seasonal declines in appearance?



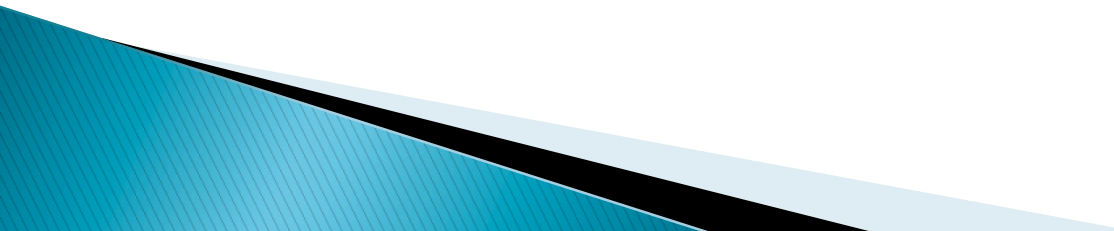
How about chemical trespass?

- ▶ Usually, the tree find the chemical, rather than the chemical moving on to adjacent property so the chemical rarely trespasses.
- ▶ However, if there is a reasonable expectation that there are roots in the treated area, the applicator is responsible.



Flood control drainage channel
in San Bernardino County and
a homeowner's ficus

You need a toolkit

- ▶ Diameter tapes or calipers
 - ▶ Steel tape measure, 100 foot tape, rototape
 - ▶ Tags and aluminum nails
 - ▶ hammer and mallet
 - ▶ Pruning gear – saws, pruner head and 9 foot pole in 3 foot sections
 - ▶ Digging tools and a brush (wall paper brush is good)
 - ▶ Chisel
 - ▶ Plastic bags
 - ▶ Plumber's torch
 - ▶ Soil tube and auger
 - ▶ Height measuring tools such as clinometer, range finder, your iPhone (theodolite)
 - ▶ Possibly a cooler (for beer and samples)
 - ▶ The number of a good lab
 - ▶ Drill and 3/16" bit, increment borer, sonic tomograph, resistograph
 - ▶ Lot of references
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Avoid becoming an advocate for the person who hired you

- ▶ Proper role of the assessor is as a disinterested party –
 - Your opinion of value based on the facts as you see them.
 - Avoid stretching them to meet your clients needs or you lose credibility.

What to say if you are asked whether your judgments are subjective

- ▶ Yes, they are subjective, but not arbitrary
- ▶ Or, yes, and they are based on my years of training, experience and practice.

SPECIES

The Question: how do we judge the relative value of a species of tree?

- ▶ As for CONDITION, the depreciation factor for SPECIES is rated as a percent, usually in increments of 10%.

The most important characteristics to consider in relative species value

- ▶ Expected life span
- ▶ Susceptibility to pests and diseases that have lethal potential
- ▶ Climate adaptation
 - Frost sensitivity
 - Need for chilling (accumulation in winter of hours under 45°)
 - Heat injury
 - Drought sensitivity
- ▶ Structural issues
 - Wood stability
 - Tendency for weak architecture

Life span

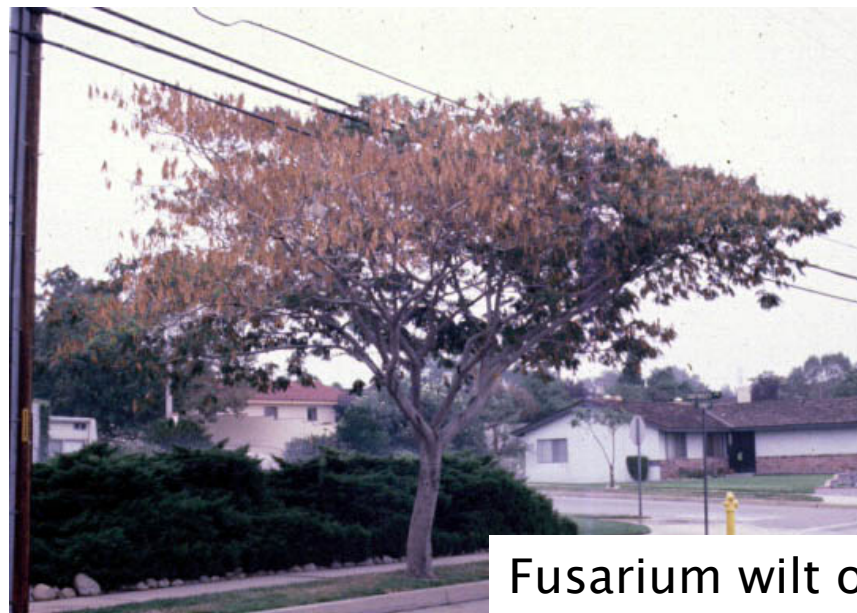
- ▶ Trees with short life spans, generally 30–45 years, tend to rank in the middle
- ▶ This can be a bigger consideration if the specimen is nearing the end of, or beyond, its expected life
- ▶ We have a number of genera with short life spans even under good conditions
 - Alder
 - Acacia

Susceptibility to pests and diseases that have lethal potential

- ▶ If it is likely that a species will die from a widespread disease, it gets very low marks
 - Leyland cypress – cypress canker
 - Weeping willow – several cankers
 - American elm in parts where Dutch elm disease is present
 - Recent additions
 - Liquidambar – bacterial scorch
 - Purple-leaved plum – bacterial scorch
 - Silk tree – fusarium wilt
 - Olive – bacterial scorch
 - Oleander – bacterial scorch
 - Others soon? – polyphagus shot hole borer



Liquidambar scorch



Fusarium wilt of Albizia



Cypress canker

Courtesy of J. Robbins, University of Arkansas Div. Agriculture

Climate adaptation

- ▶ Frost sensitivity – citrus, sub-tropical figs, some species of eucalyptus,
- ▶ Need for chilling – many species native to colder climates
 - maples
 - Linden
 - Some elms
- ▶ Heat injury
 - Japanese maples
- ▶ Drought sensitivity
 - Coastal redwood



Flowering cherry in Redlands – cankers due to stress of insufficient winter chill

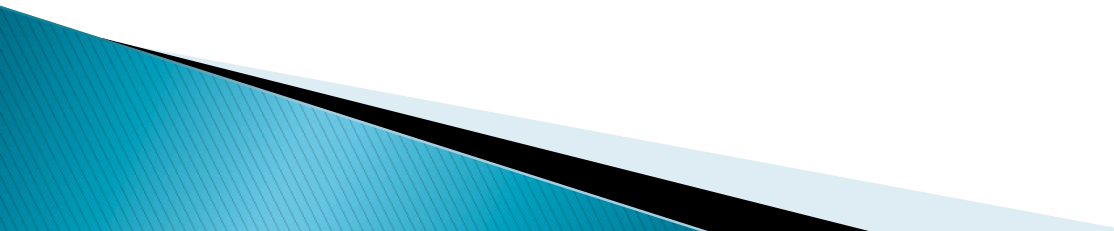
Structural issues

- ▶ Wood stability
 - Coral trees
 - Some eucalyptus (summer branch drop)
- ▶ Tendency for weak architecture
 - Ash
 - Callery pears
 - California pepper
 - Siberian elm
 - Monterey pine



Poor structure of callery pearAn ash failure due to weak structure

But wait, there's a bit of help!

- ▶ The Western Chapter of the International Society of Arboriculture has published a book titled Species Classification and Group Assignment, 2004.
 - ▶ This lists the suggested species value for most trees in the Western Chapter, with consideration of climate zone.
 - ▶ Species are assigned to one of 5 ratings in 20% intervals.
 - ▶ It invites the appraiser to move 10% in either direction based on experience or preference.
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A big word of CAUTION

- ▶ The reference is now nearly 10 years old and there have been lots of changes in the environment
 - Red gum lerp psyllid and eucalyptus long horned borer are much less of a problem
 - Bacterial scorch has become enormously damaging
- ▶ You need to keep abreast of the current pests and diseases and differential susceptibilities.

The future of the “Guide” and the WCISA supplement

- ▶ A new edition of the Guide for Plant Appraisal has been expected for some time. The Species Classification and Group Assignment probably will not be updated until the 10th edition of the Guide is released.
 - ▶ When the Species Classification is rewritten, it will be out of date almost immediately.
 - ▶ If you can make an argument for deviating from what is written, you should do that.
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