Common Tree Pests & Solutions
Topics of Discussion

- Tree biorhythms
- Insects
- Disease
- Abiotic
- Solutions

*Each one of these topics could be a 2 day workshop or more!*
Recognizing Tree Biorhythms

- Trees are doing different things at different times of the year.

- Depending on the nature of the stress, different symptoms might appear depending on the season.
The Seasons

- Spring - primarily vegetation development
- Summer - energy production (dormancy)
- Fall - primarily root development
- Winter - dormancy
Insects

- Most of what I see is cosmetic damage.
- Typically, severe cases have underlying problems.
- Some insects → once you see them, it’s too late.
Oak worms

They are here every spring.

Some don’t hang from strings.

Adds to stress complex
Mountain Laurels

redbugs → Lopidea major
caterpillars → lepidoptera

See them every year

typically cosmetic damage
Borers

Typically too late by the time you see damage.

Some beetles only affect already-dead wood.
Spider Mites

Typical in Italian cypress

difficult to treat

paper test
Diseases

● Decay
  ○ heartwood
  ○ sapwood

● Leaf spot

● Vascular

*I’ve left out viruses and nematodes
Heartwood Rots
Ganoderma

two forms: one more rapid decay than the other

both will yield problems < 5 years
Laetiporus

Chicken of the woods

Tree can live long time with this.
Phellinus

Many different species.

Hard to get specific ID.

Often quick killer.
Summer Limb Drop

Not sure on ID

Phellinus spp ???

See it every year starting in late June.
Sapwood Infections
Hypoxylon

Most prominent disease last 5-7 years.

Drought related.

Can mimic oak wilt pattern of spread.
Kretzschmaria

Very rapid killer.

If you see it, take the tree down ASAP.

Can be hard to see.
Endothia

kill branches or trunks sections at a time.

limb removal is good option.

Can kill whole tree.
Leaf Spot

- Oak leaf blister
- rusts
- anthracnose
Vascular → Oak wilt

- **don’t** be a fear monger
- **do** get multiple opinions
- **do** make calculated decisions
- **do** consider alternate diagnosis
- **do** plant resistant trees
Abiotic Disorders

I like to call (most of) these human disorders.

→ Probably the most manageable and least considered

I’m not going to discuss the stuff we can’t address acutely: urban heat island, air pollution, etc...
Construction & Site Changes

● tree decline and decay development can take 20 years some times.
● physical injury during construction process
● over pruning and elimination of forest layers
● creating limited root zones
● altered drainage patterns
Root Flare Problems

- girdling roots in nursery stock
- grade changes
  - soil microbes will decay trunk tissue
  - potential for girdling roots to develop
    - thick bark trees take time to develop problems: > 5 years
    - thin bark trees develop problems quickly: < 5 years
Drought (one year)

- **Long term →** Severe depletion of reserves
  - dieback
  - susceptible to opportunistic pests

- **Short term →**
  - year by year consideration → good rain year, tree starts bouncing back right away. May not regain full strength in one year.
Irrigation

Doesn’t replace rainfall, but it’s very good life support during drought.

→ if existing irrigation is randomly shut off, trees will die.

→ installation of irrigation can damage tree roots.
Poor Drainage

Very typical in high density neighborhoods.

If soil doesn’t dry in 10 days there will be problems.

Moving water doesn’t seem to be a problem.
Herbicides

- Weed-n-feed still a prominent tree killer
- Lawn care companies use very tree-toxic products: metsulfuron, 2-4D

I always look for presence of weeds in a yard.
Other Chemical toxins

- Pool water
- Well water → can change unexpectedly
Chlorosis

Common in:

- red oaks → iron
- maples → manganese

Typically not chemistry problem, but tree health issue or species selection issue.
Solutions
the tools in our bag
Irrigation

- Irrigation is a very good thing.
- Very difficult to over water in Austin → more likely to have drainage problems.
- Need to be mindful of cutting trenches in root systems.
- Spray vs. drip?
-Extent of watered area (drip line)?
Soil Amending

● Composting
  ○ incorporate into the soil with airspade, or
  ○ top dress on soil

● Mulching
  ○ not more than 5” depth
  ○ will settle to $\frac{1}{2} - \frac{2}{3}$ of volume
  ○ doesn’t fix soil problems

● Airspading to restructure soil is the fastest approach to “fixing” bad soils.
Airspade

- soil amending
- trenching around tree roots
- exploration to determine construction feasibility
- root flare excavations
- root pruning
Root Pruning

- On construction sites → instead of tearing our roots with excavation equipment.
- Remove girdling roots.
- Inspect (fix?) root bound nursery stock.

→ Best done in the fall or winter *(before February)*
Fertilizing

**Very important to consider timing:**

- too much nitrogen in spring will cause excessive foliage growth $\rightarrow$ summer heat stress.
- Root feeding in the fall with slow release fertilizer: urea formaldehyde, methyl-urea
What is a Fertilizer?

- humic & fulvic acids
- compost teas
- mycorrhizae
- micronutrients
- vitamins
- enzymes
- growth hormones
Tree Pruning

- Removing diseased/damaged limbs
- Improving structural problems
- Removing deadwood → long term reduction of decay.

→ Sick trees typically don’t get better from pruning.
Pesticides

Pests are usually secondary problems; we call them opportunistic. Using pesticides can be useful for stopping their damage, but if you don’t address the tree’s underlying problems the treatments are in vain.
Prognosis vs. Diagnosis

I think prognosis is *much* more important
Diagnosis

Can be a process.

- Many problems only surface at certain times of the year.
- Data collection can take time.
- Historical info may not be available.
- Getting specific ID of some decay fungi is nearly impossible.
Prognosis

● How bad off is the tree, really?
● Is it worth the time to go through a thorough diagnosis process?
● How long will the tree live with our without treatment?
● Regardless of what caused the damage, what is the opportunity to get better, if any?