

# **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.





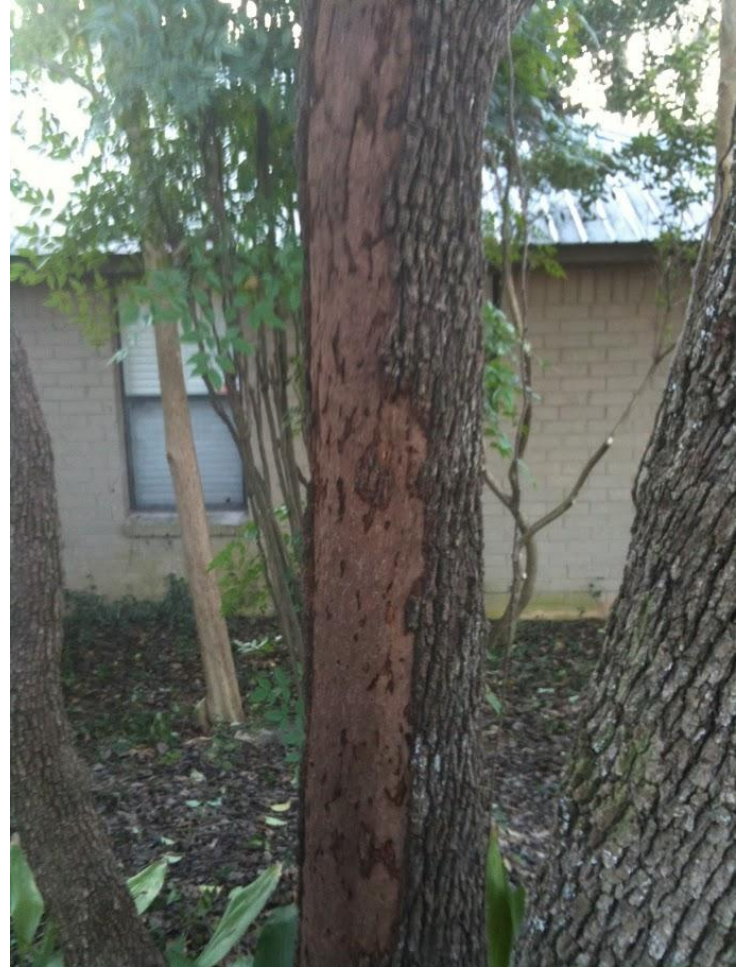
# **Sapwood Infections**

# 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

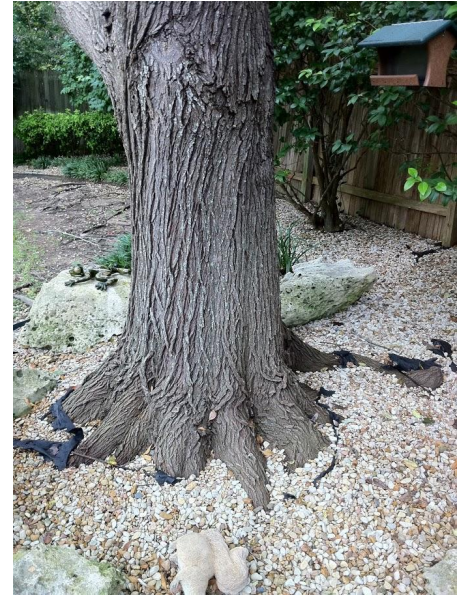
- tree decline and decay development can take 20 years some times.
- physical injury during construction process
- over pruning and elimination of forest layers
- creating limited root zones
- altered drainage patterns

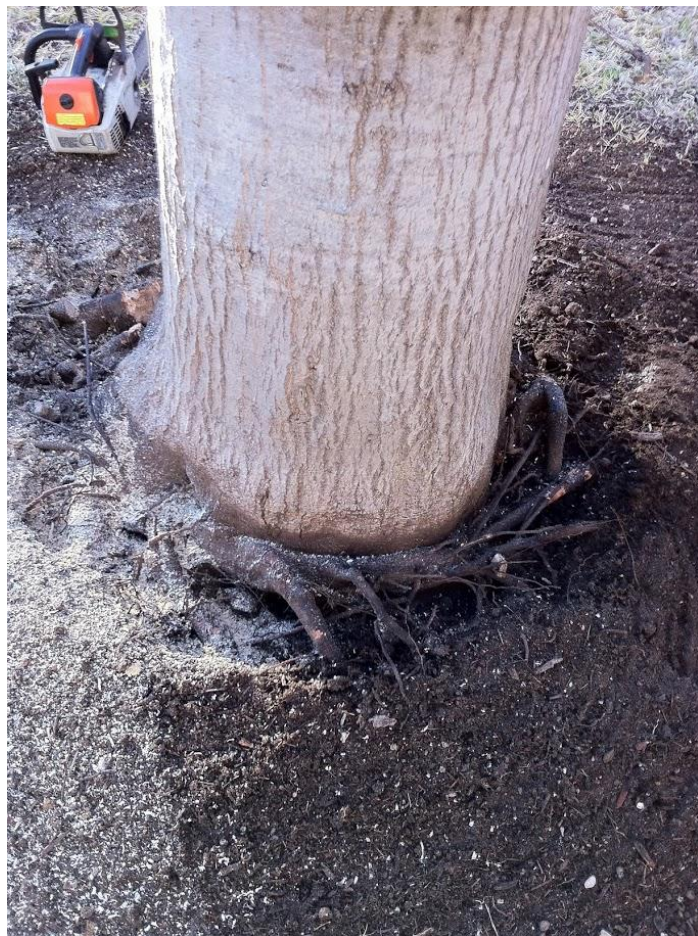
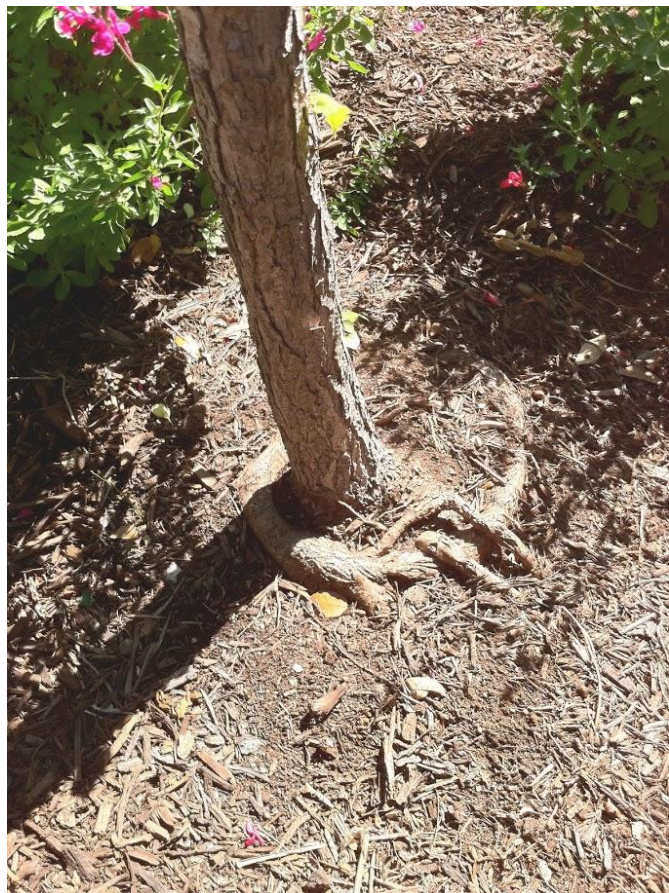




# Root Flare Problems

- 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. home sales, rentals, water restrictions.

→ 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: *metsulfurion, 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 out 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 → 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*?