Tree Selection

• Right tree, right place
• Site characteristics
  – Urban <or> wildlands
  – Soils
    • Winter drainage
  – Size
    • Powerlines
    • Views
  – Microclimate
    • Coastal
      – Powdery mildews
    • Inland
      – Drought / Heat stress
## Site challenges, broadly

<table>
<thead>
<tr>
<th>Resource</th>
<th>Urban</th>
<th>Interface</th>
<th>Wildland</th>
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<tr>
<td>Irrigation</td>
<td>Easy?</td>
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<td>Challenging?</td>
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<td>Weed competition</td>
<td>Moderate</td>
<td>Often severe</td>
<td>Moderate</td>
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<td>Space &amp; light</td>
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<td>Herbivory</td>
<td>Limited</td>
<td>Often severe</td>
<td>Often severe</td>
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<tr>
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<td>Usually fine</td>
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<tr>
<td>Cal IPC listed</td>
<td>OK?</td>
<td>Not OK</td>
<td>Not OK</td>
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<tr>
<td>Selection</td>
<td>Exotic?</td>
<td>Native</td>
<td>Endemic</td>
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The best species are almost always endemic to the area. Yes, it’s hackneyed, but: Think globally, act locally.
Endemic?

- **LOCALS ONLY, DUDE**
  - A rural ethic
- **Soil and climate rule**
  - Redwoods: Iconic California natives
    - Marin County natives to boot, but:
    - Not in Novato, Terra Linda, San Rafael, or even Bolinas!
  - Look at what grows locally
    - For more possibilities, look for missing (?) members of the plant community
- **Climate is easy (?)**
- **Soils – not so much**
Tree Root Growth

Mimics Top Growth

Not quite …
Conceptual Tree Root Growth
Actual root growth, mature apple tree on deep alluvial soil
Shallow roots?

• Tree form has always been a dance between genetics and the environment
  – Above ground
  – … and below
A deep hole is a grave

A wide, shallow hole is better
Planting

- Plant in the fall
- Check roots, cut off:
  - Dead
  - Damaged (the 3 D’s)
  - Disoriented
  - OR
  - Reject trees (contract?)
- **Hole size:** Wide,
  - Deep only if compacted
- **Plant slightly high**
  - Or mound to keep crown dry
  - Reduces chances of crown & root rot
  - Upper roots just below ground, graft union well above soil
  - Allow for soil settling
Planting

- Remove the nursery stake
- Backfill only with native soil to grade
  - Water soil if it’s dry
- Soil amendments may be incorporated above grade, if desired
  - Vitamin B is just very expensive fertilizer
- 2-4” of mulch
  - NOT against trunk
  - Weed suppression improves establishment success, and growth by 30%
  - Too much mulch is a bad thing though
Planting

- If necessary, loosely stake spindly trees for support, especially in windy areas
- If you’re lucky enough to get trees with low foliage, keep it
  - Don’t prune at planting
- A 50/50 mix of interior latex and water painted on trunk can be used to prevent sunburn on thin-barked species (thumbnail test)
  - If needed, tree wraps can prevent rodent damage, and sunburn too
- Water the tree in
  - Unless the soil’s already wet
Post Planting Care

- Water the root ball and just beyond
  - When the top few inches of soil is dry
- Best delivery:
  - Drip
  - Soaker hose
- Worst = in a lawn with sprinklers
- Water should reach at least 1 ft. deep
- A 2-year-old tree can use about 2 gal./day
- A mature tree can use >50 gal./day
Drip Irrigation

Mulch pulled back
Post Planting Care

• Move emitters to dripline as tree grows
• Remove takes and ties after six months
• Prune out dead, dying, and disoriented branches, as well as co-dominant stems
  • Trunk sprouts can help shade trunks and heal wounds
    • Keep them small?
  • On grafted trees, always remove suckers
• Refresh mulch annually
Suckers...

...and water sprouts
Carbon: Planting for the long haul

- Right tree, right place
  - Soils
  - Climate
  - Space
- Don’t plant deep
- Water is critical to establishment
  - First year essential
  - Monitor second year?
  - Move emitters as the tree grows
  - Remove stakes after six months
- Let the tree tell you how it’s doing
References

- **Soils & Climate**
  - A&L Western Agricultural Labs: [www.al-labs-west.com/](http://www.al-labs-west.com/)
  - Perry Laboratory: [http://perrylaboratory.com/](http://perrylaboratory.com/)
  - USDA Soils Map: [https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm](https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)
  - Sunset Climate Zones: Sunset Western Garden Book

- **Selection**
  - SelecTree: [https://selectree.calpoly.edu/](https://selectree.calpoly.edu/)

- **Planting**
  - Arbor Day Foundation: [https://www.arborday.org/trees/planting/containerized.cfm](https://www.arborday.org/trees/planting/containerized.cfm)

- **Care**
  - Arbor Day Foundation: [https://www.arborday.org/trees/tips/](https://www.arborday.org/trees/tips/)

- **Policy Resources**
  - California ReLeaf: [http://californiareleaf.org/](http://californiareleaf.org/)
  - TreePeople: [https://www.treepeople.org/](https://www.treepeople.org/)
Thanks!

- **UC IPM:** [http://www.ipm.ucdavis.edu/](http://www.ipm.ucdavis.edu/)
- **Presentation on-line at:**
  - [http://ucanr.edu/MarinIPM](http://ucanr.edu/MarinIPM)
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