Tree selection, planting, and care

Steven Swain
Environmental Horticulture Advisor
UCCE Marin & Sonoma Counties

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

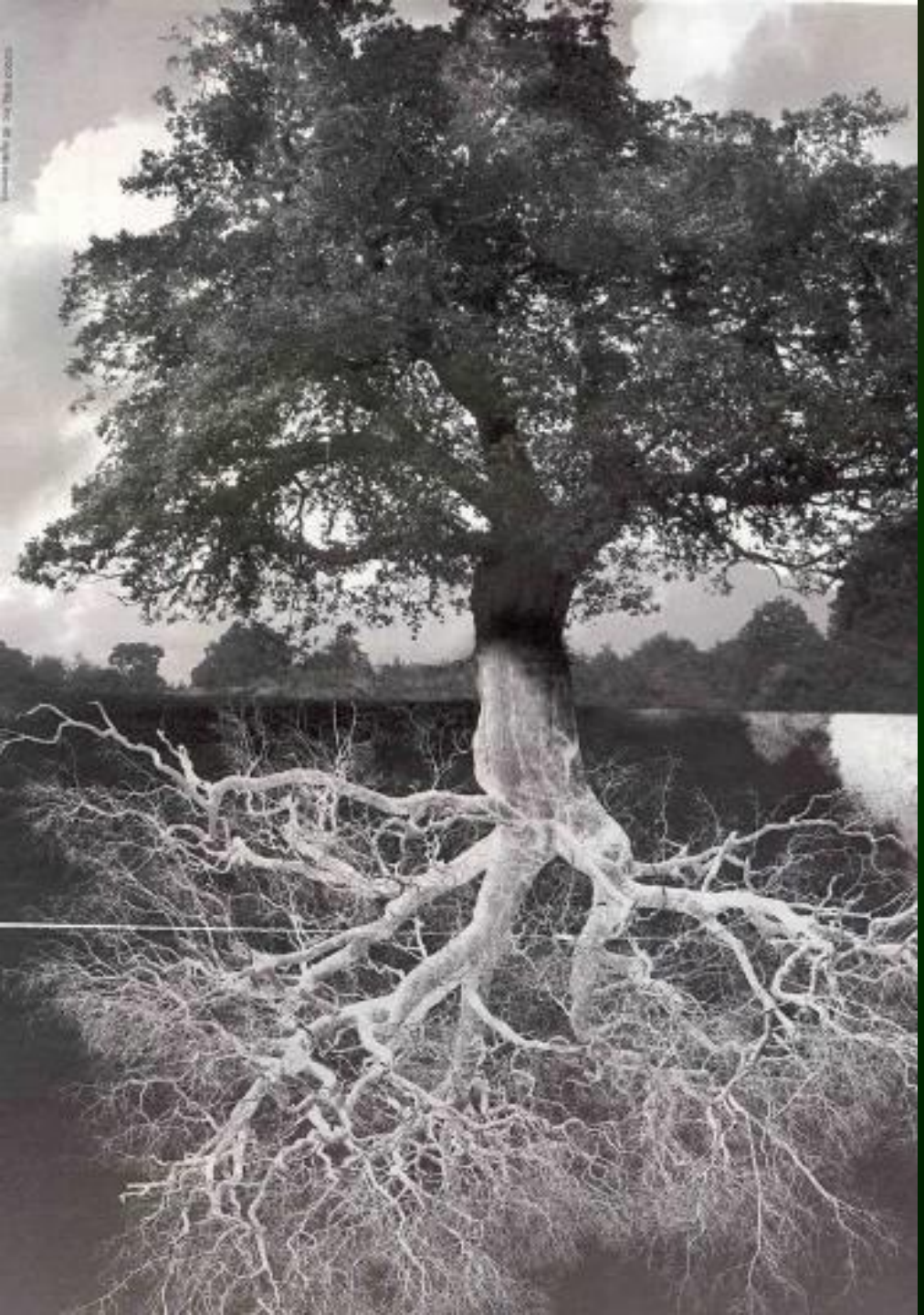
Site challenges, broadly

Resource	Urban	Interface	Wildland
Irrigation	Easy?	Not so easy?	Challenging?
Weed competition	Moderate	Often severe	Moderate
Space & light	Limited	Open?	Open
Herbivory	Limited	Often severe	Often severe
Soils	Challenging?	Usually fine	Usually fine
Cal IPC listed	OK?	Not OK	Not OK
Selection	**Exotic?**	**Native**	**Endemic**

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

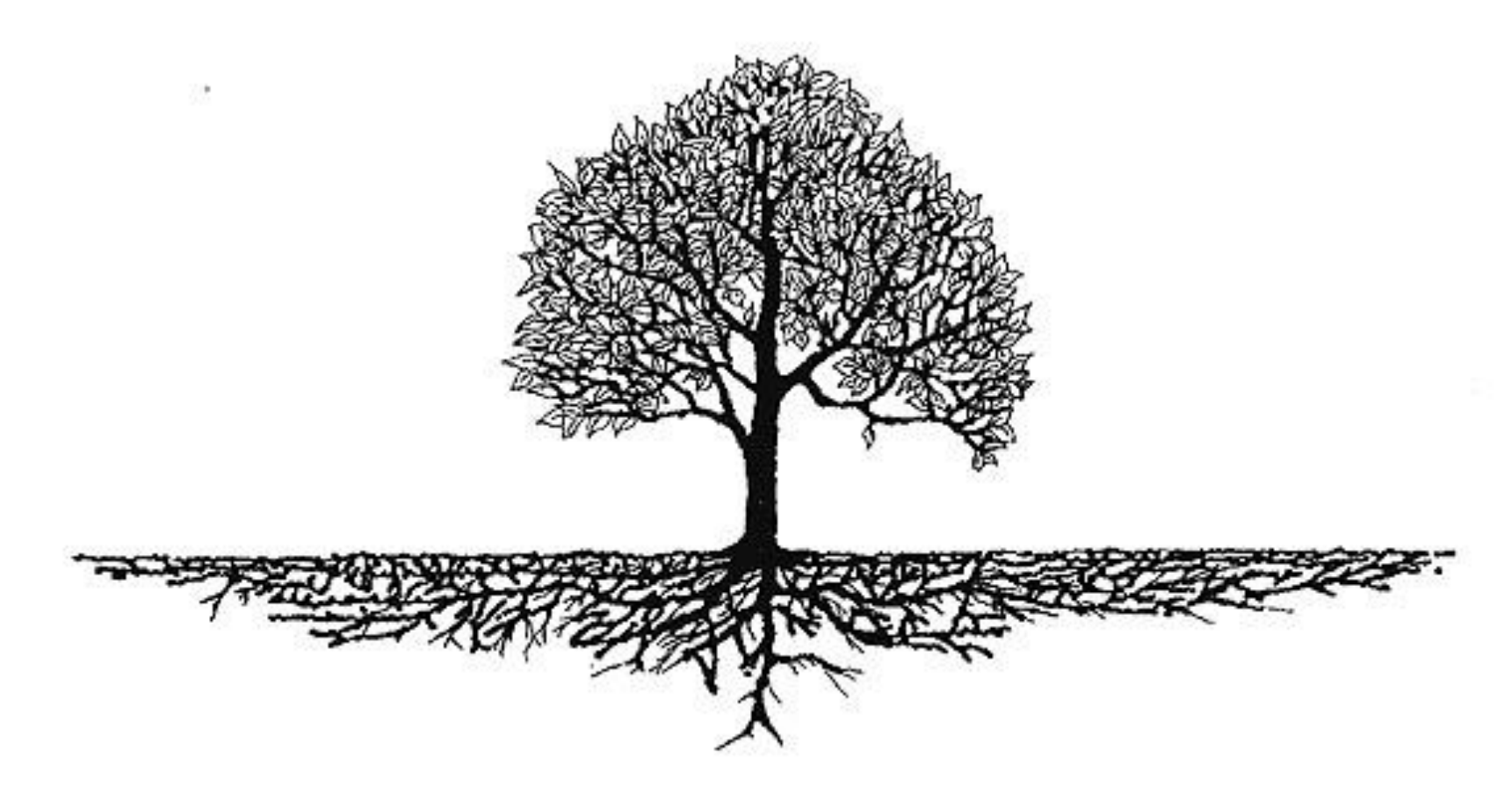


Tree Root Growth

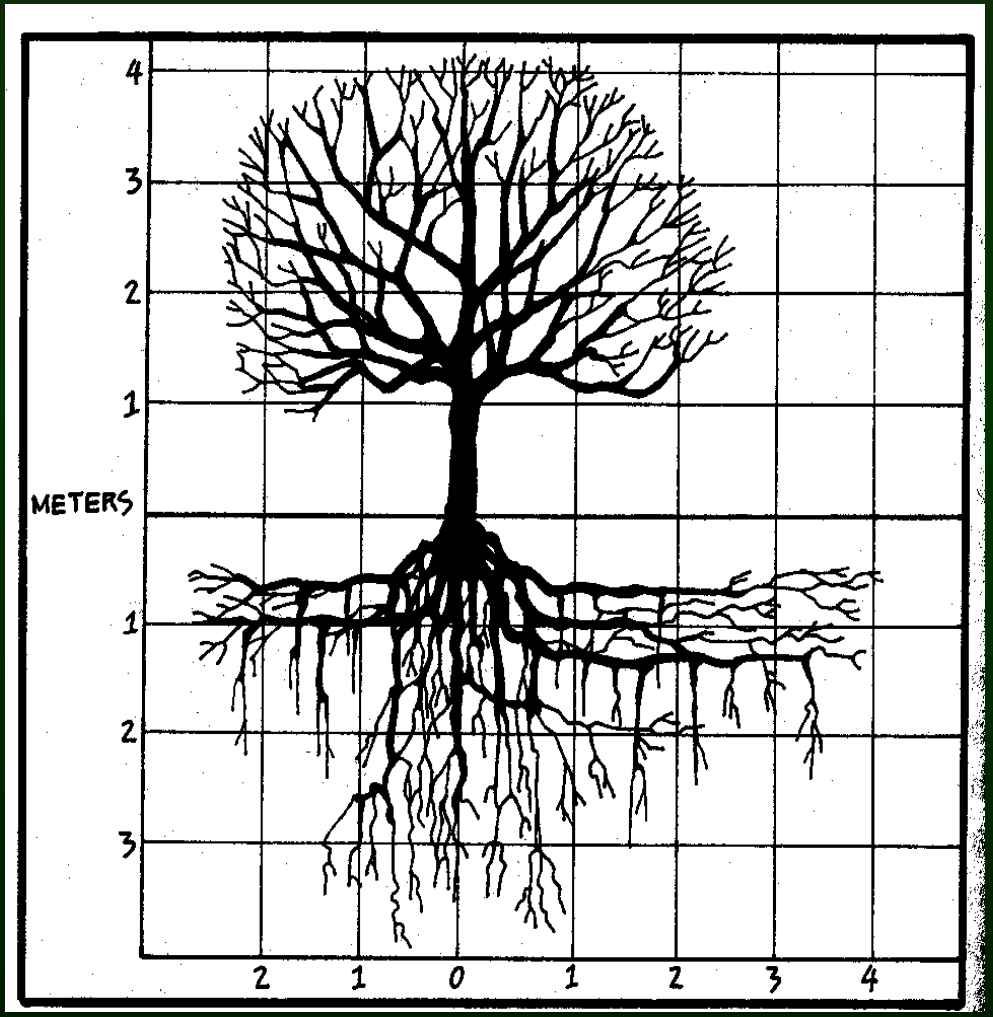
Mimics Top Growth

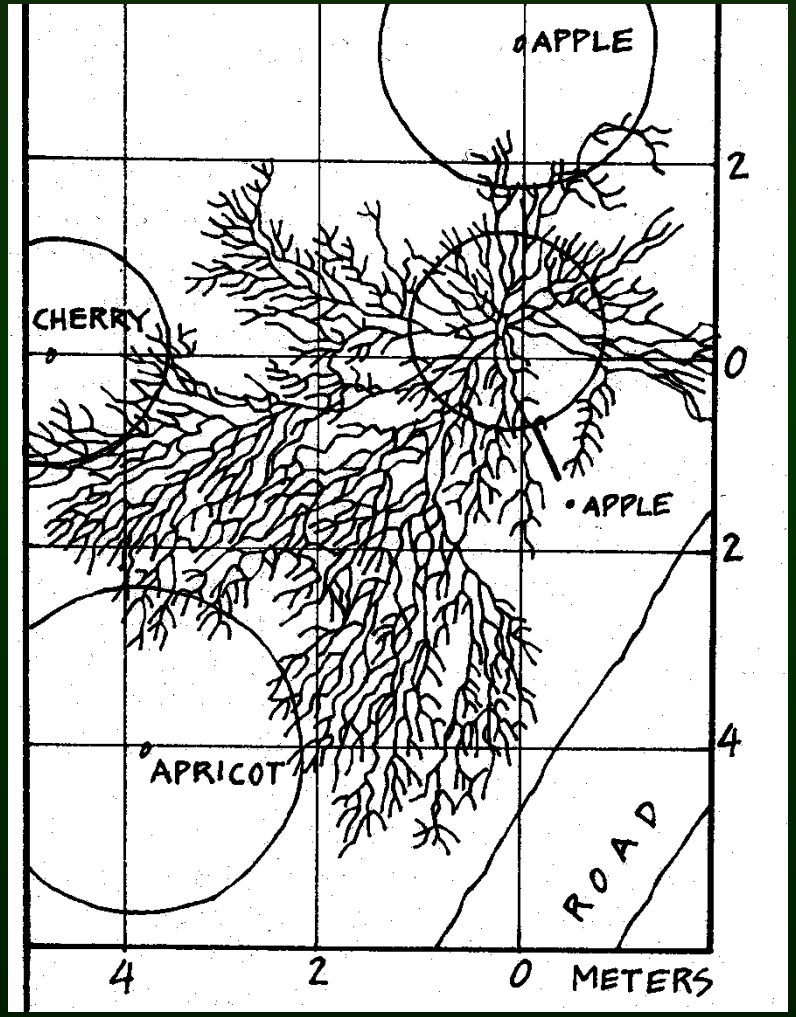
Not quite …

Conceptual Tree Root Growth



Actual root growth, mature apple tree on deep alluvial soil





Shallow roots?

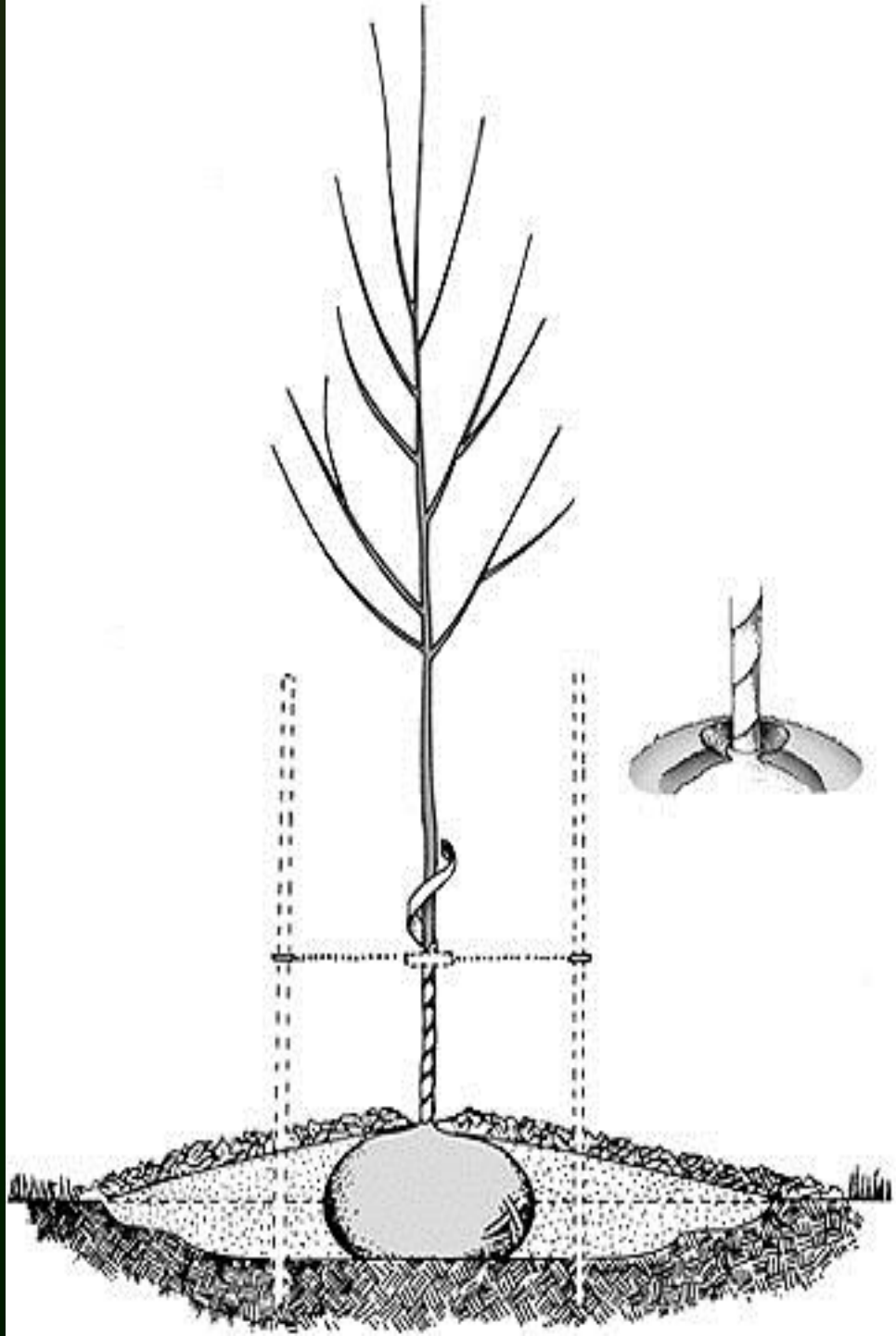
- Tree form has always been a dance between genetics and the environment
  - Above ground
  - … and below

A deep hole is a grave

A wide, shallow hole is better

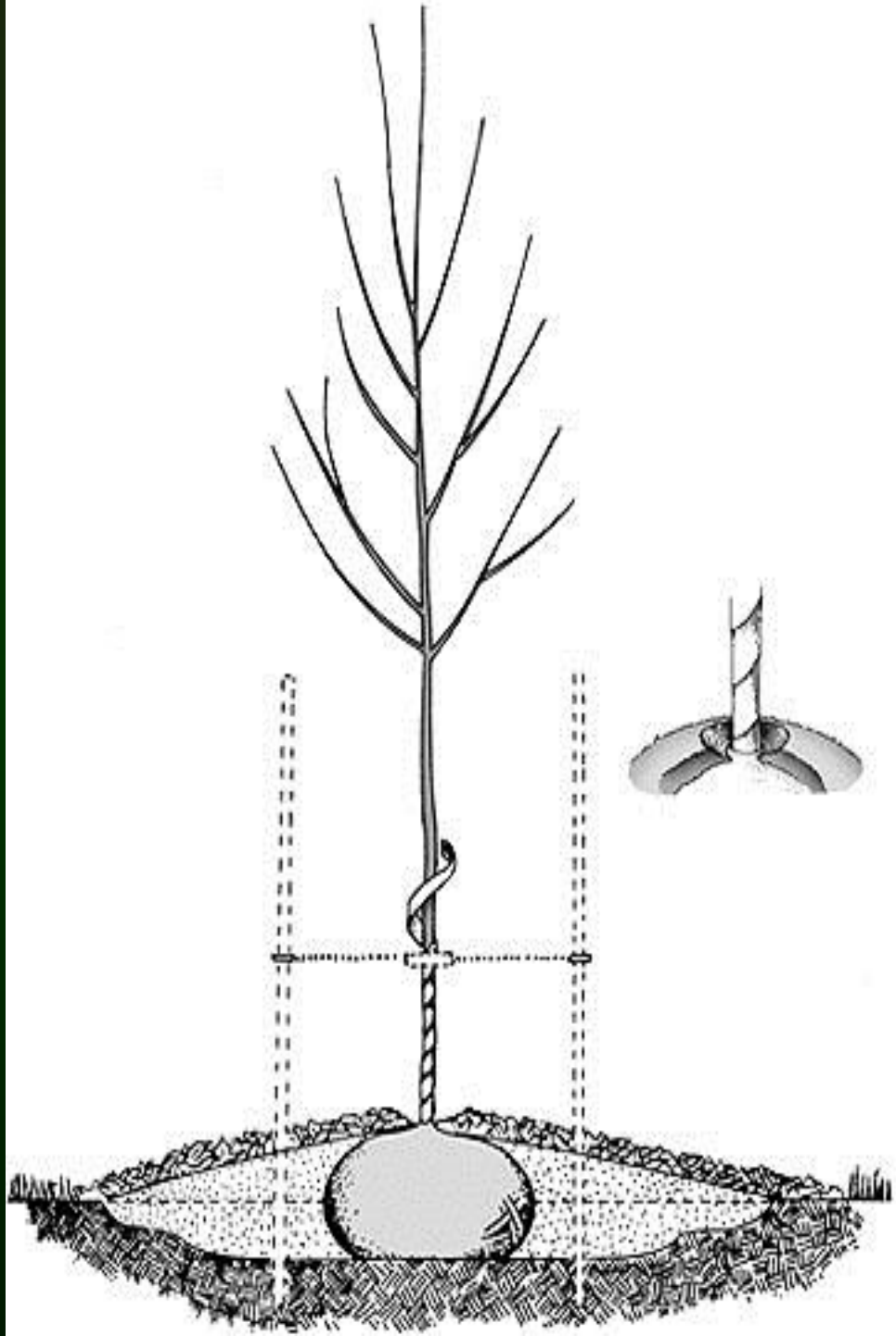
Planting

- Plant in the fall
- Check roots, cut off:
  - Dead
  - Damaged (the 3 D's)
  - Disoriented
  - OR
  - Reject trees (contract?)
- Hole size: <u>Wide</u>,
  - 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



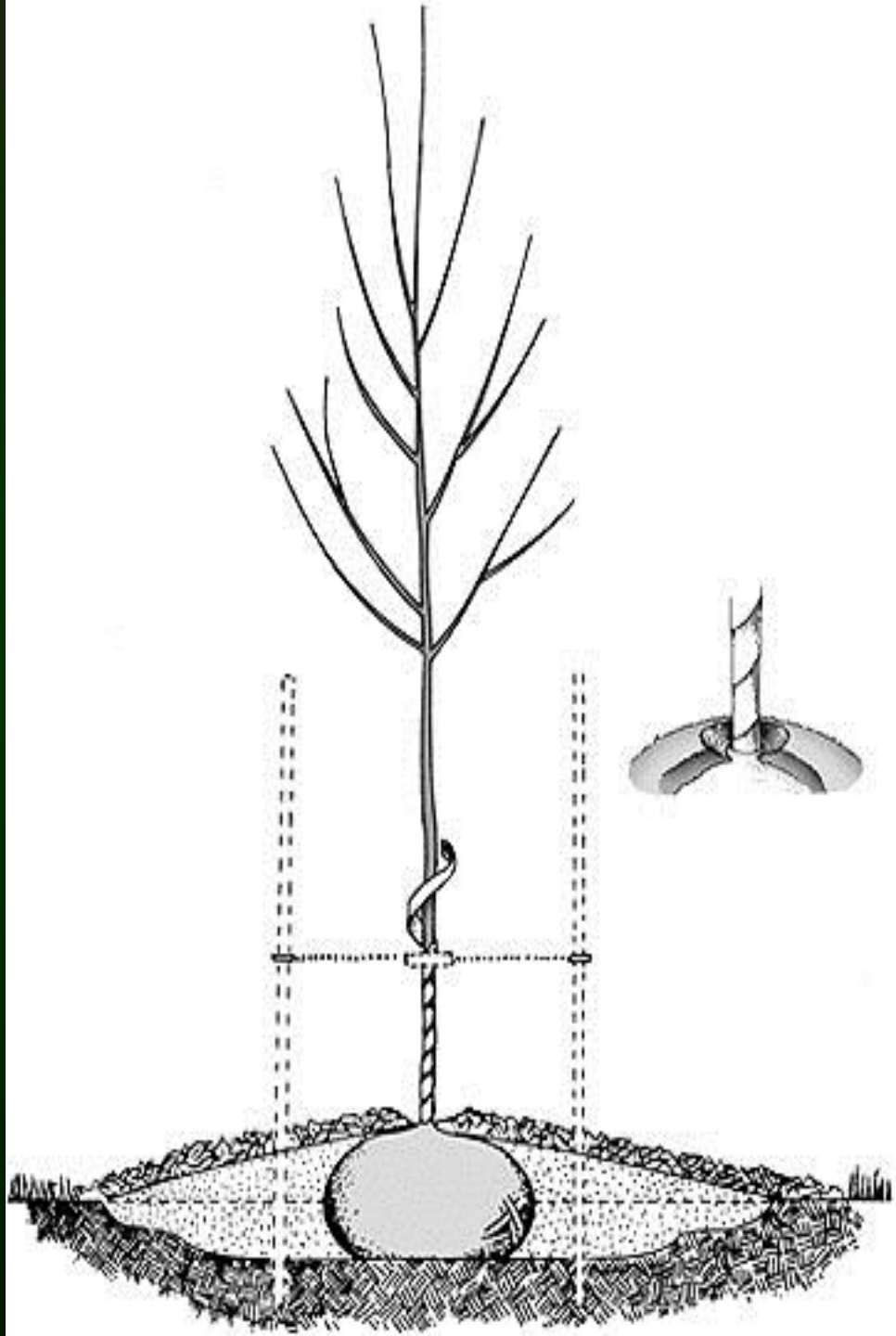
Planting

- 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/
  - Perry Laboratory: http://perrylaboratory.com/
  - USDA Soils Map: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm
  - Sunset Climate Zones: Sunset Western Garden Book
- Selection
  - California Invasive Plant Council (Cal IPC): http://www.cal-ipc.org/
  - SelecTree: https://selectree.calpoly.edu/
  - California Native Plant Society (CNPS): http://www.cnps.org/
  - UCCE Marin Master Gardener's Plant Guide: http://marinmg.ucanr.edu/Selecting_Plants/Plant_Guide/
- Planting
  - International Society of Arboriculture (Trees Are Good): http://www.treesaregood.com/
  - Vacaville Tree Foundation: http://www.phytosphere.com/vtf/treeplant.htm
  - Arbor Day Foundation: https://www.arborday.org/trees/planting/containerized.cfm
- Care
  - Vacaville Tree Foundation: http://www.phytosphere.com/vtf/treeplant.htm
  - Utah State University: https://forestry.usu.edu/trees-cities-towns/tree-care/post-planting-tree-care
  - Arbor Day Foundation: https://www.arborday.org/trees/tips/
- Policy Resources
  - California ReLeaf: http://californiareleaf.org/
  - TreePeople: https://www.treepeople.org/

Thanks!

- UC IPM: http://www.ipm.ucdavis.edu/
- Presentation on-line at:
  - http://ucanr.edu/MarinIPM
- Steven Swain: 415 473 4226
  svswain@ucanr.edu