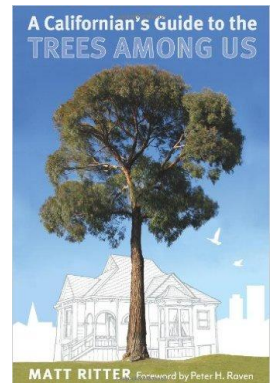


URBAN TREES: TEN KEY QUESTIONS AND ANSWERS UC MASTER GARDENERS SHOULD UNDERSTAND

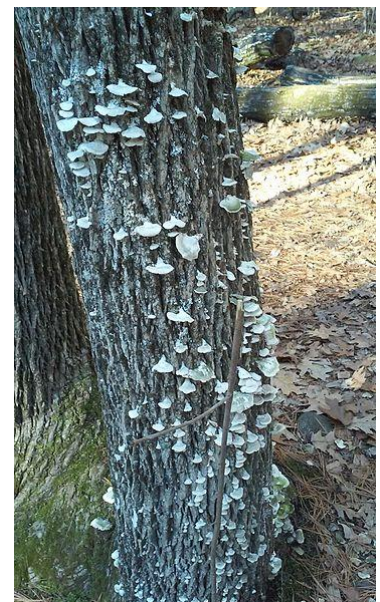
1. If someone asks you what kind of tree they have - and you don't know, but want to assist; this is what you should do. – *procuring images is very helpful.*

- a. Ask for a leaf description (Can they get a sample, and photograph or scan it?)
 - i. Size (use a ruler or coin), color (both sides), shape, texture (hairy, rough, shiny)
 - ii. Leaf orientation (opposite or alternate)
 - iii. Describe the leaf stem (petiole)
- b. Bark and branch descriptions
- c. Are there flowers, seeds or fruit visible?
 - i. Describe any flowers with shape, # of petals, color, size, fragrance, location
 - ii. Look for seeds and old fruits in the tree, and on the ground - describe
- d. Tree size: approximate height and width of canopy (use utility lines and buildings as reference)
- e. Age of tree – (estimate)
- f. Does it look healthy, dormant, injured, or diseased?
Explain signs or symptoms
- g. A full photograph of the whole tree silhouette can be useful, but distance shots are seldom diagnostic for exact species identification.
- h. A book on the most common California ornamental trees is by Cal-Poly faculty Matt Ritter. [“A Californian ‘s Guide to the Trees Among Us”](#). It also has a basic, dichotomous tree key.
- i. Another useful resource is the San Diego Horticultural Society tree book: [“Ornamental Trees for Mediterranean Climates”](#) by Steve Brigham, with photos by Don Walker.

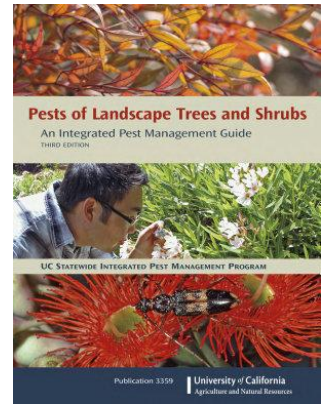


2. You are told a tree is sick. No one knows what is causing the problem, or if there is a remedy. What do you ask next?

- a. First, determine the tree species (see above)
- b. Estimate the age of the tree?
- c. Ask about cultural practices:
 - i. If they planted it, ask them specifically what procedures were followed.
 - ii. How is it watered?
 1. How much water is applied?
 2. How often?
 - iii. Why do they think it is sick? Is it possible it is deciduous, and just dormant?
- d. What are the symptoms or signs of trouble? Describe them. Look here at [UC IPM](#).



- i. How long have signs been noticed?
 - ii. Is there evidence of fungal activity?
 - iii. Is there decline at the top, bottom, on one side, or random?
- e. Has there been any construction, trenching, flooding, chemical spraying, grade changes, or other disturbances near the tree within 5-10 years?
- f. Go to the ANR books "[Pests of Landscape Trees and Shrubs](#)" and or "[Pests of the Garden and Small Farm](#)" to view the most common problems of common specific tree species. These books can be helpful to narrow down, or diagnose a common problem of a known tree species, and sometimes can offer a management strategy.
- g. Remind residents that samples of plant pests & diseases can be evaluated at the [San Diego County plant pathology lab](#) for free. Explain how to prepare their samples to bring in for diagnosis, and help them fill out the [specimen form](#).
- h. If someone needs professional consultation, refer them to local [ISA Certified Arborists](#).



3. A resident wants a “neat” shade tree with no litter, and well-behaved roots. How can they learn what species are appropriate for their location, given San Diego’s changing climate and limited water resources?

Please encourage residents to plant more trees, but caution them that all species have pluses and minuses. **There are no perfect trees**, but our county desperately needs more urban trees to mitigate looming climate changes. If they have enough room, the largest species are best.

- a. [The Urban Forests Ecosystems Institute - UFEI](#): Cal-Poly SLO has a great website where tree attributes can be plugged in, and the site will recommend a species list: [SelectTree](#) It’s not perfect, and not all fields are listed for all species, but it’s a very helpful website.



- i. Don’t expect to prune a tree to fit into a too small location over time.
 - ii. Remind residents that taller trees often take up less room than wider ones.
- c. [San Diego County has at least 10 Sunset Zones](#) and many more microclimates. Different species will adapt to regional variations in heat, cold, rain, drought, fog, wind, salt, sand, clay and freezing. Identify your climate zone.
- d. Evergreen vs. deciduous. Understand the differences. What direction casts more shade?
 - i. South & West facing locations benefit from deciduous species.
 - ii. Evergreens can block wind or colder north or east facing locations.
- e. Is the tree species drought-resistant? Keep in mind that some trees (although drought resistant), can also accept more moisture. All trees need regular water to get established.

- f. How is the drainage? Few trees can tolerate “wet feet” for very long.
- g. Are native species better for our environment?
 - i. Native trees are good for enhancing wildlife habitat, but few do well near streets.
 - ii. Many of San Diego’s native trees are riparian, and not particularly drought-tolerant.
- h. Are there overhead high-voltage electrical lines? If yes, trees need to be less than 25-35 feet tall at maturity. Phone or television cables drops are usually not a serious concern, [but learn how to distinguish them](#). Storms can electrify anything.

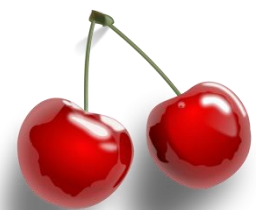
4. You are told a large shade tree needs pruning. How can you assist, and what should you ask or explain, before referring them to an outside professional?

- a. **Know the 4 D’s.** Mature trees should only be pruned if they have **dead, diseased, damaged, or deformed** limbs. Other pruning cuts should be minimal, unless executed for human foot traffic, trash collection, emergency vehicle access, or fire hazards. All pruning wounds cause harm to a tree, and never truly “heal”.
- b. Why does someone think it needs pruning?
 - i. Topping, lacing and heading cuts are harmful to a tree.
 - ii. The most important structural pruning should occur during the first 2-4 years.
 - iii. Root pruning can severely compromise a tree’s stability.
 - iv. Trees don’t get “too tall”. Genetics determines their height, and that is normal.
 - v. There is seldom a good reason to prune mature trees every year.
- c. Ask to see credentials if told to prune. Some tree pruning companies are unscrupulous, and will do whatever you ask - even to the detriment of a tree.
- d. [The International Society of Arboriculture](#) can determine if the person you seek to hire has bona fide credentials of education and certification. They can also find local arborists.
- e. [Check a CA Contractor’s license](#): If a tree is over 15 feet tall, you’ll need to hire a licensed CA contractor, or you are at risk of liability for any accidents or tree failures from pruning.
- f. [The Professional Tree Care Association](#) can also assist finding ISA certified local businesses.



5. What kind of fruit trees can do well in San Diego County?

- a. San Diego County has one of the best climates to grow a wide variety of home fruit trees.
- b. Know your chill hours: the total hours between ~32° and ~45° - during a typical winter. (<100 to ≥ 400 are typical in this region) This varies annually, and an average is good to understand.
 - i. Peaches, apricots, plums, almonds, and cherries need cold weather to set fruit.
 - ii. Buy “low-chill” varieties, if you live in Zone 21, 23, 24.
 - iii. [Dave Wilson’s CA website](#) explains many things you should know when choosing a reliable fruit tree species: They also have a [Fruit Tree harvest chart](#) to help you plan for an all year harvest. You can order it for \$5.00, or download it for free.
- c. Does it freeze where you live? How cold? Every degree below 32° matters for sub-tropical trees like mango, banana, lychee, sapote, papaya, and many citrus and avocado species.
- d. How much room do you have?



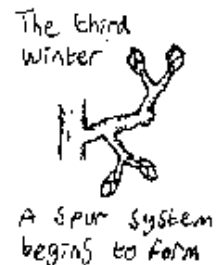
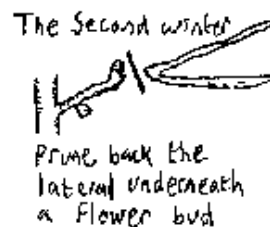
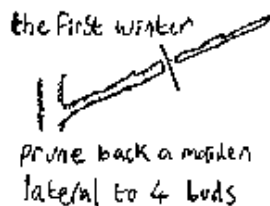
- i. Dwarf and semi-dwarf trees are less vigorous than full-size rootstocks, but may take up less room as they mature. Weigh the relative virtues.
- ii. Multiple grafts on one rootstock can offer seasonal harvest variation, but require more dutiful maintenance and care, as they often grow and mature unevenly.
- e. Do you need a pollinator?
 - i. Some trees need a similar, but different cultivar nearby - in order to set fruit.
 - ii. Many avocado, plum, apple, pear, cherry and most nut trees need two species.
- f. Planting two or more trees in close proximity or multiple grafts can fulfill this need too.
- g. Are there drought tolerant fruit trees to consider?
 - i. Figs, persimmons, pomegranates, loquats, pineapple guavas, strawberry guavas, macadamias, olives, mulberries and jujubes are all low-water trees.
 - ii. Grapes are not trees, but do produce lots of fruit, and eventually get woody stems. They are long-lived, produce loads of fruit, and have very low-water needs.
 - iii. Passion vine is a low-water fruit, and their perennial vines also have woody stems.
- h. The [UC California Backyard Orchard](#) website has numerous and excellent resources for home-growing fruit in California.
- i. [The California Rare Fruit Growers](#) organization can help you find trees, unusual cultivars, and help you manage and grow the best species for your locale.
- j. Tom Del Hotal – faculty from Southwestern College in Chula Vista, has a useful page about locally “fruitful” tree species. It’s not completely up-to-date, but it has good information. <http://crfgsandiego.org/Documents/FavoriteFruitTrees%202009.pdf>

6. Your fruit tree needs professional help and structural pruning for health and better fruit production. Who can you turn to for assistance?



- a. The UC ANR book [“The Home Orchard – Growing Your Own Fruit and Nut Trees”](#) is worth buying as a resource, for DIY’s.
- b. [ISA Certified Arborists](#) do not necessarily receive specific training to manage fruit trees, although some people know more than others. Seek out a business’s specific references. It is a “growing” field.
- c. The [California Rare Fruit Growers](#) is a hobbyist organization, but some experienced members offer home fruit tree pruning and care services. Be wary if your trees are larger than 5 feet (see contractor’s licensing requirements – above)

d. Unfortunately, there are few professionals out there with the appropriate skills, experience, training and insurance, to properly manage and prune home orchards. Ask at your





local nursery, County office, horticultural society or garden clubs for referrals. Do not trust untrained lawn maintenance workers, without thoroughly checking their references.

- e. Fruit tree pruning needs are unique for each species. Do not let someone make cuts, if they do not convey this understanding. Some fruit trees need very minimal pruning; some need a lot every year.
- f. Check out the ANR volume (see above) for “Pests of the Small Garden and Farm”, as well as the UC IPM website for updates about recent [citrus, avocado and other pest](#) threats. There are serious diseases that could wipe out CA citrus and avocado production, so it is crucial that every homeowner become vigilant and knowledgeable.

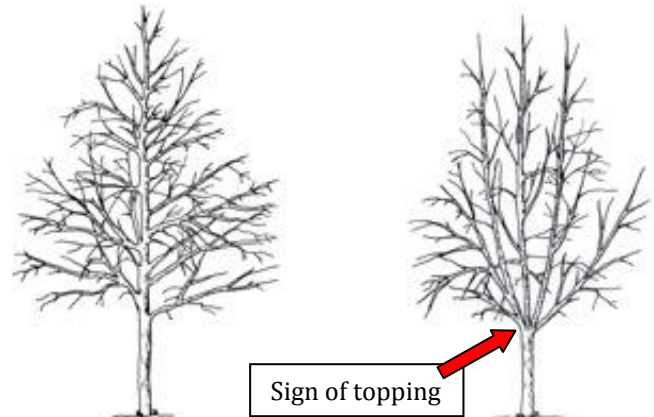
7. You’re at a nursery and want to buy a tree. What should you look for and why?

- a. Nursery quality is the single-most controllable variable to ensure a healthy long-lived urban tree, but it is often - the most ignored.
- b. Smaller is better. Almost always. For some species, planting from seed “in situ”, grows the healthiest, strongest, and longest-lived urban trees.
- c. Large containerized trees are typically root-bound, and do not “unwind their roots” as they grow. Bad roots can girdle or kill a tree in 5-10 years.
- d. A good rule of thumb is the faster a species grows, purchase the smallest possible saplings.

- i. One-gallon pots or liners are good for predictably fast-growers. Small specimens will catch up quickly, and overtake larger pots.
- ii. Moderate growing species may be acceptable in 2 to 5 gallon containers, but be sure to check for hidden coiled roots hiding up underneath inside the root ball.
- iii. Slow-growth species might be fine in 15 gallon specimens and above, but buyers beware. Be sure to follow advice for moderate growth trees. Cut away any circling roots, or return the specimen to the nursery.
- iv. Boxed trees are always suspect to have coiled and girdled roots, but any tree – even a one-gallon specimen can be root-bound.

- e. Look for trees that have low side branches, no staking, a single trunk, and good trunk taper.
- f. Reject specimens with broken limbs, wound marks on the trunk, or signs of topping.
- g. Typically the best quality nursery trees may look like long pencils.

- i. Look for radial spaced limbs, but lack of side branches can be normal for some species.
- ii. Roots growing out the base of a container - are a flag for root-bound trees.
- iii. Inflexible roots that cannot be spread out at planting time should be avoided.





- iv. Pass up specimens that look like “lollipops”. These have often been “nursery topped.” It’s a common, but destructive practice.
- h. Discourage most palm planting
 - i. Palms are NOT trees
 - ii. Less ecosystem benefits than trees
 - iii. Palms don’t provide much shade
 - iv. Palm fronds are fire hazards
 - v. Most tall palms require high maintenance and costly upkeep.
- i. However, palms can provide wildlife habitat, especially for orioles.

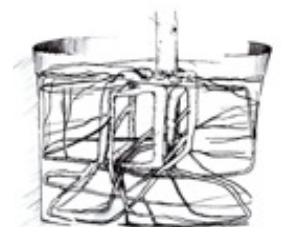


8. You bought a new tree. What should you know about planting it properly?

- a. First call [Dig-Alert](#). This service is free, and will let you know if there are utility easements or underground obstructions you shouldn’t plant over.

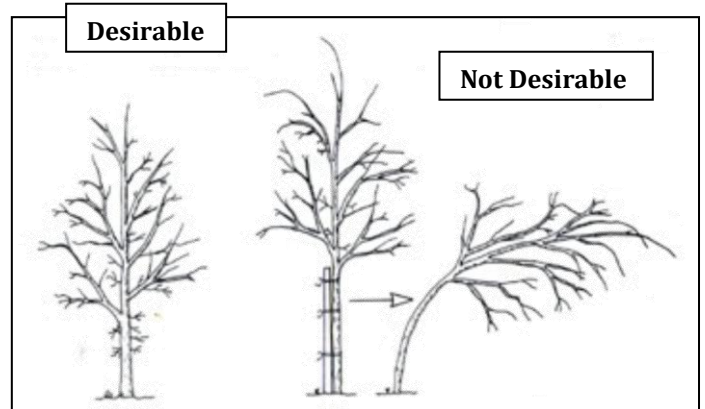


- b. Identify the root crown on your specimen.
 - i. You may have to scoop away some potting soil to expose where the trunk meets the roots, and there should be a slight flare visible.
 - ii. That flare should remain at least an inch above the final soil grade after planting.
- c. Did a hole 2-3 times the width of the container; preferably square, or with angled sides.
 - i. The depth of the hole should match the soil level in the pot, measured from below the root flare to the container bottom.
 - ii. Put the excavated soil on a tarp for easy retrieval later.
- d. Roughen the sides of the hole, especially if the soil is hard clay or heavily compacted.
- e. Fill the empty hole with water and let it penetrate down and drain once or twice, especially if the soil is very dry.
- f. If there is questionable drainage, fill the hole completely with water.
 - i. It needs to drain overnight (or much sooner), if possible.
 - ii. If it does not - seek professional assistance with constructing a French drain, or plant your tree elsewhere.
 - 1. Do not dig deeper into that location, or fill the hole with gravel.
 - 2. This won’t help, and could seriously cause harm to your tree later.
- g. Slide the specimen out of the container (pound the outside of the pot if necessary), and scuff up the sides of the root ball. If there is any doubt about the interior of the root ball having coiled roots, remove enough soil to expose the root “history”. Spread out as many roots laterally as possible, and cut away any circling ones.



Not Desirable

- h. Another option is to slice into the about an inch or more, around the perimeter of the entire root ball. Ideally this cut will sever any older kinked and circling roots.
 - i. If the roots are thick or wound up, return the plant to the nursery, and explain why.
 - ii. Always use a clean blade.
- i. Once satisfied the roots are not girdled, place the tree upright in the hole, and face any grafting scars away from the hottest summer sun exposure.
- j. Remove any central nursery stake, if there was one. (Ideal nursery stock should not have needed staking.)
- k. Fill the hole only with the excavated soil. Do NOT ADD amendments or fertilizers. Tamp down lightly, and leave the uppermost root crown slightly above the soil grade.
- l. If the tree is falling over without support, set stakes in the ground (outside the root ball) and at least as deep as the hole, and tie loosely with soft and pliable material, no more than 2/3 up the tree. These ties should not be tight.
- m. Another option is a [root staple](#). This is a safer method to stabilize a root ball. In general, any staking is a poor idea, and all stakes should be removed after one season.
- n. After planting, make a temporary moat away from the trunk, and water the root ball thoroughly.
- o. Allow drying periods between watering times, and water deeply each period.
- p. Spread 3"-4" of organic mulch around the base of the new tree, being careful to leave a few inches of air space away from the trunk.



9. You hear from a resident that they want a big tree removed, even though it's probably healthy. What should you respond?

Ask why? Our urban areas are losing large trees at an alarming rate, and we need to preserve what we can.

- a. Is this tree totally on their private property, or is it on the street right-of-way or parkway?
 - i. If it's a non-residential tree, they need to contact their local municipality, community planning group or county office for a removal permit.
 - ii. This typically also requires a replacement tree to be planted, but it probably could be a different species.
- b. Is there a view involved?
 - i. Suggest that views can be enhanced by trees – becoming elegant focal points.
 - ii. Few municipalities protect a right to a view. Views through, over, or under a tree can be achieved through strategic pruning.
- c. Do they think it's unsafe? (see question #4)



- d. Is it causing sidewalk, plumbing or other damage?
 - i. Remind owners that trees add between 5%-20% to a property value, and that typically far exceeds the cost of repairs to infrastructure.
 - ii. Explain that only leaking pipes will attract tree roots.
- e. Is a neighbor complaining, or is it a neighbor's tree?
 - i. CA case law prevents neighbors from hacking limbs or roots all the way to a property line edge.
 - ii. Neighbors have a duty to be prudent and reasonable, if cutting encroaching foliage.
 - iii. If excessive pruning causes irreparable harm or tree death, the liability for damages can be steep.



10. Someone tells you their tree is “suddenly” dying, and they desire to do anything possible to save it. What can you advise?

- a. Sadly, by the time most tree species look dead, they are typically too far gone to save.
- b. Prevention is always easier - than a cure for death.
- c. Occasionally, a tree can recover slowly if cultural practices are remedied. (see question #4)
- d. Some people may ask about tree injections of novel pesticides to eradicate invasive beetles or life threatening fungal diseases.
 - i. Although there are rare cases where radical, expensive and experimental tree injections might rescue a specimen tree; this is the exception, not the rule.
 - ii. There are many “believers” selling “unproven” products. Buyer Beware.
 - iii. Check the UC IPM site for peer-reviewed, vetted and approved products.
- e. Offer to recommend a new tree replacement, and advise them where to turn to have their dead tree removed safely.
- f. The [ISA Certified Arborists](#) organization assures residents that the person has assumed some responsibility for his/her education. However, always ask to see a current arborist's license, as well as a CA contractor's license. (see question and answers to #4)



Urban Trees are a Wise Investment!

1. Healthy tree saplings can cost as little as \$5-\$40
2. Annual cost to water a young tree averages <\$10/year
3. Trees help prevent erosion, and their leaves feed the soil
4. Trees reduce stormwater runoff & re-charge groundwater
5. Edible fruit and nut trees are bountiful and easy to grow,
6. Trees improve and expand urban wildlife habitats
7. Residential trees increase real estate values from 5%-20%
8. Trees absorb and clean air pollution, exhaling oxygen
9. The shade from trees can save \geq 30% on air-conditioning
10. Trees sequester carbon, mitigating climate change

