



Redwood Barn Nursery

1607 Fifth Street Davis, California

Davis urban forest is aging

FEBRUARY 26, 2019



On Dec. 27, 1988, Davis resident and business owner Jeff March took a picture of a rare snowfall here, facing west on Russell Boulevard, illustrating beautifully the variability of our weather and climate. The photo also illustrates clearly the very poor pruning (topping) that was done to the historic black walnuts that line the route of old US 40. Jeff March/Courtesy photo



Improper pruning hastened the decline of the historic black walnuts. This photo, taken more than 30 years later from nearly the same spot as Jeff's, shows how some have been removed and the remaining trees show little growth. Improper pruning endangers the lives of large trees and can make them dangerous. In the long run, they require more maintenance once they've been topped. New trees have been interplanted at various points further down the road. Don Shor/Courtesy photo



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Recently I've had the opportunity to work with residents of three very different neighborhoods, all facing the same issue: the need to formulate a long-term plan for the succession and replacement of the populations of trees that they share.

In the Willowbank area and some of the “number” streets downtown, Chinese hackberries are dying of vascular disease, while other residents are annoyed by the hackberry aphid that took up residence several years ago and spews a syrup-like film over their patios and gardens each summer day.

Village Homes is replacing some trees that succumbed to verticillium wilt, and facing the aging and gradual loss of their Chinese tallow trees.

Rancho Yolo has a curious collection of species from a rather haphazard tree planting decades ago, and now the residents are reckoning with the future of those trees.

A recent op-ed by Tree Davis directors highlighted a city-wide issue: “[Don't let our urban forest die off.](#)” To the point: “For the past four years, more trees have been removed than planted in Davis — in spite of sustained planting efforts.” Drought and age have taken their toll.

Defining an urban forest

When I first heard the term “urban forest,” I thought it seemed pretentious. But it is an accurate way to describe the population of trees, and their associated lower plants, animals, and other organisms, that inhabit the local plant community. It includes native and non-native species, including us. In fact, people are some of the prime beneficiaries, and worst pests, of the urban forest.

Do I really need to put the benefits? Well, in case you've forgotten, trees:

- * Moderate the local climate: they block wind, provide shading and cooling.
- * Conserve energy by direct cooling of buildings.
- * Reduce “urban heat island effect” of solar radiation onto hard surfaces.
- * Filter gaseous and fine particle pollutants from the air.



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* Provide psychological, social, and cultural benefits.

Our trees provide a link to our history because they span generations. Trees have stories to tell. They provide reference points for our geography and define the expansion of the city and the history of each neighborhood.

Some are familiar landmarks to successive generations. How many people in town have known the aging, finally declining weeping willow at the corner of Eighth and Oak? That interesting Formosan flame tree on the corner of Eighth and L, with the bright pods every December? Maybe you've seen one of the massive cork oaks, likely planted in the 1940s, on Olive or Parkside drives.

The lifespan of a tree can vary from 50 to 200 years or more — it depends on good species selection, good stewardship, protection from pests and diseases and development, and a little bit of luck. Decisions made by today's inhabitants will be felt for two to three generations, sometimes more. Looking at it the other way around: we are enjoying the benefits — or paying the price — for tree choices made 50 to 75 years ago.

Stress factors

Weather extremes cause problems.

Drought weakens older trees and slows the establishment of young ones. Periodic freezes such as we had in 1990 can cause short-term damage or even kill some species. Flood waters can damage roots and may increase the spread of vascular diseases.

The “weather whiplash” [predicted](#) by climatologists suggests that more flooding and more drought will be in our future.

A significant threat to trees everywhere is the spread of invasive species. Fast-growing trees such as tree-of-heaven (*Ailanthus*) displace planted as well as native trees. Introduced diseases and pests take out entire species from a region. Nuisance pests cause homeowners to remove otherwise healthy trees.

Human factors include housing and road development (paving that reduces water infiltration), grading changes, and increased or decreased landscape irrigation.



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So how is your neighborhood doing?

Is there a mix of species and ages, developing at different paces to provide benefits decades from now?

Is tree planting continuing, or is there just a cohort of older trees aging and, perhaps, declining?

Have the hazards of some trees been identified, and the risks evaluated?

Have the older trees with historic value been identified and protected?

Do you have a replacement plan?

If your neighborhood is solar, do you have a tree planting plan for the open common areas where larger trees could be planted to compensate for the restrictions caused by solar access needs? Solar panels and trees don't mix.

The importance of diversity

Having a mix of species in your tree replacement plan is crucial.

Most shade trees take about 10 years to provide significant shade, then grow for several more decades. Planning for a mixed succession of tree types avoids the impact of host-specific pests and diseases. Focus on diversity, with a mix of growth rates and species, and avoid those with known pests and diseases that weaken the trees or shorten their lifespans.



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If you are lucky enough to own one of the historic valley oak trees, you need to work with experts on its care. Take care not to add irrigation around the tree. Prune, if at all, only as recommended by a consulting arborist. This tree in South Davis has been estimated at more than 300 years old. Don Shor/Courtesy photo

Pest problems

In the eastern U.S., emerald ash borer has spread to 30 states since it was first identified in 2002, killing millions of ash trees. Dutch elm disease killed 75 percent of the elms in the U.S. in just six decades in the 20th century.

Here in California, sudden oak death has killed native and non-native species up and down our coast, as has the polyphagous shot hole borer in Southern California.

Did you know that Arthur Street, the long avenue that runs north from Russell just across 113, used to be lined with California white alder? A coastal native species, they were attacked by borers of a clearwing moth in the 1980's and all of them were killed, replaced with plane trees.



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Implementing diversity

Some urban foresters recommend the “10-20-30 rule”: no more than 10 percent of trees from any one species, 20 percent from any one genus, and no more than 30 percent from any single family. A stricter “5-10-20” policy was adopted by Portland, Ore. But an extensive survey of tree programs nationwide showed that hardly any city met the first goal, and none met or even approached the tighter guidelines.

At its simplest, a basic rule of thumb in urban forestry is that no single tree species should account for more than 10 percent of the population. This mitigates the risk from new pests and diseases.

An easier approach is the “Look Around Rule.” Easy to apply. Look around. See a lot of one species on your block? Plant something else!

A note about native species

“Yolo” is said to derive from a word meaning “a place abounding in rushes;” i.e., a marsh. In this region, we live in old tule marsh or valley grassland plant communities, so we don’t have very many truly native tree species to choose from. Some may prove to be susceptible to introduced pests and diseases, as noted above. Some aren’t suitable in developed landscapes (California black walnut, Fremont cottonwood).

I urge that we use native species within the context of a well-balanced “tree portfolio.”

Valley oak (*Quercus lobata*) is a large native species with a long history of pest and disease resistance and good drought tolerance. They are eventually very large, and can get aphids and scale insects that lead to nuisance drip of honeydew. I get complaints about excess acorn drop some years. So it’s not a perfect choice for smaller yards or as street trees, but it would be great to get more valley oaks planted in common areas and parks.

Making it work

Village Homes, Rancho Yolo and Willowbank are leading the way on this. Neighborhood committees are refining lists of species, drawing up plans for replacement, and engaging their neighbors in the process.



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Some key characteristics of a successful program:

- * Provide a list with as diverse a selection of species as possible.
- * Work with experts to select trees that are suitable for our climate and soil.
- * Be practical: work with what is available in the nursery trade.
- * Update the list on an ongoing basis using current information about new hazards and new species and cultivars.

Caring for aging trees

Very old trees need regular arborist visits to assess their health and safety.

Minimize pruning except to remove diseased wood or dangerous branches. Improper pruning is one of the worst things you can do to an old tree.

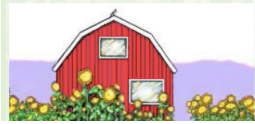
You may need to augment irrigation during drought years, especially non-natives. On the other hand, old native oaks should not have irrigation added underneath their canopies.

Use care when changing the landscape around an existing tree. You can harm a tree by impeding drainage, by adding irrigation, and by soil compaction. Changing to a very-low-water landscape can also harm existing trees, unless their separate irrigation needs are provided.

Monitor for pests: scale, aphids, borers, but treat only when the tree's health is threatened, or the mess is unacceptable.

Know your local part of the urban forest: consider doing an informal survey, make a tree count and species list. Google Earth is a useful tool for assessing the distribution of larger, older trees and identifying gaps in the canopy.

Set goals for tree plantings for each year and decade. Provide information to your neighbors about tree choices. There are lots of resources locally.



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Consider a neighborhood-wide tree planting with [Tree Davis](#), or just make a donation to help their ongoing projects.

Follow-up care

The first five years make the biggest difference in establishing healthy root distribution and safe branch structure. Try to expand irrigation outward with the growth of the tree.

Additional irrigation is likely to be necessary. You can adopt trees for their early years, making sure they get some seasonal watering, monitoring the stakes and ties, and seeing to it that they get proper training in their early years for safe branch structure.

Every neighborhood can leave a legacy of new trees and a plan for stewardship. The best time to plant shade trees? A decade ago. The second-best time is now.

— *Don Shor and his family have owned the Redwood Barn Nursery since 1981. He can be reached at redbarn@omsoft.com. Archived articles are available on *The Enterprise* website, and they are always available (all the way back to 1999) on its business website, www.redwoodbarn.com.*