



## Redwood Barn Nursery

1607 Fifth Street Davis, California

### Taking stock: a hot summer so far

July 2024

A steady parade of scorched leaves, half-cooked fruit, pictures of withered shrubs, defoliated trees coming across my desk and inbox? Must be a heat wave in the Sacramento Valley!

#### How hot has it been?

The National Weather Service posted an interesting graphic of the Top 5 Hottest 20 Day Stretches on Record. For the series of heat waves between June 23 and July 12, 2024, our average high temperature was 103.8 degrees F.

This exceeded the previous record set in 1984. Note that our normal average high temperature in July is 93 degrees.

As of July 18, Sacramento has had 23 days over 100 degrees. This also breaks the record set in 1984. Note that Davis is generally a couple of degrees cooler than Sacramento.

I'll leave it to John Mott-Smith to explain the ramifications of this ongoing climate change in his monthly Per Capita column. For gardeners, protracted periods of very high temperatures especially affect how we garden, how much time we spend outside, and how much water plants use.

#### Effects of heat in the vegetable garden

- Some vegetables don't set fruit. Tomatoes and green beans generally fail to self-pollinate above about 90 degrees. Cucumber and zucchini fruit may be stunted or misshapen due to insufficient pollination. Not to worry, there's plenty of time for more fruit to set and develop properly. We have a very long growing season here.
- Fruit of tomatoes and bell peppers can be scalded by the sun. As the fruit ripens, the waxy layer that protects it thins out and it becomes vulnerable to sunburn.

There are two ways to mitigate this.

1. Provide shade. Staple a panel of shade cloth on some stakes to the west of the plants so that it casts a shadow over the fruit by mid-afternoon. It's best not to shade the plants all day. Tomatoes and peppers grow and yield best in full sun. We're just trying to prevent injury to the fruit from the intense heat in late afternoon.
2. Harvest early. Tomato fruit that has reached what growers call "breaker stage" (beginning to turn lighter green) will ripen fully on your kitchen counter. We can, of course, harvest and use peppers green, but they can also ripen more fully inside.

Most important: your vegetable plants likely need more water.

- Peppers, eggplants, green beans, cucumbers, and summer squash have all needed daily irrigation during this protracted heat.
- Tomato, melon, and pumpkin plants are deeper rooted, so they may not need water daily, but they do need several gallons of water all at once to get sufficient root depth and sustain the vigorous vines. If they get stressed, they won't yield well.



## Redwood Barn Nursery

1607 Fifth Street Davis, California

- Raised planters need daily watering due to their faster soil drainage. Drip systems on raised beds typically need to run for 35 to 40 minutes each day, sometimes more.

### Fruit trees

Some fruit trees drop their fruit prematurely. Peaches and nectarines that have started to turn color may drop off before they are fully ripe. If they haven't been injured, the fruit will likely ripen in just a few days inside.

I am seeing samples of sunburn on citrus fruit, walnuts, and even persimmons. This is mostly related to insufficient watering. Those trees benefit from deep waterings every one to two weeks. Light daily watering, as with most drip systems, will not be adequate.

Unfortunately, some of the fruit of navel oranges and clementine mandarins will likely split after your next irrigation. This is unavoidable but usually only affects a small percentage of the crop.

### Trees and shrubs

The more severe effects we are seeing are related to insufficient irrigation. Leaf scorch, partial defoliation, and cessation of new growth are some of the simple effects of drought. Some of these are just cosmetic injury, but if the bark and cambium of a tree get injured it can cause long-term damage.

The data about temperatures has a corollary in plant water use, which is measured and recorded daily at weather stations all over California. The evapotranspiration (Et) rate is measured in inches and our average here in July is 0.25 to 0.28 inches per day. Irrigation managers adjust this rate for the crop or landscape plant and for periods that deviate from that average markedly.

Well, we deviated markedly during the 20-day heat event with an average Et rate of 0.3". July 2 and 3 set records for the date of .37 and .35" respectively.

Bottom line: you needed to be watering longer during that three-week period, and you can make up for it now.

- If you hadn't adjusted your sprinkler timer to run about 20% longer during each irrigation cycle, it is likely that your plants suffered from drought. Since temperatures are continuing above average as this goes to press, I'd increase your watering times now. Sprinkler controllers should be adjusted monthly to provide what plants need. July is the highest water-use month. A heat wave in July combined with insufficient irrigation can seriously injure landscape plants. Water more deeply, not more often.
- Alternatively, you can just bypass your sprinkler system every now and then and provide water directly to shrubs, fruit and flowering trees, and especially young shade trees. This can be a simpler way to deal with high water users such as birch trees, Japanese maples, magnolias, and hydrangeas.

The goal is to provide water to a depth of at least 18 inches, all at once. A typical drip system would need to run for at least a couple of hours, more likely several hours, to achieve that watering depth. Using a hose to fill a basin around the tree or shrub may be simpler. Extend the basin a few feet out past the canopy of the tree, as we know that tree roots extend well out into surrounding soil.



## Redwood Barn Nursery

1607 Fifth Street Davis, California

### Still time to plant?

*“My vegetable plants croaked! I don’t think I was watering them enough! Is it too late to plant more?”*

No, it’s not too late to plant some of the summer vegetables. Plant in the evening or early morning and check the watering daily for the first couple of weeks. They’ll establish quickly.

- Small-fruited types of tomatoes will grow quickly and yield plenty of fruit from August through October. Sungold and Sweet Million cherry tomatoes, Roma for sauce, and Juliet for all sorts of uses, can all still be planted.
- Summer squash and cucumbers still have time to grow and fruit. Sweet basil and other kitchen herbs flourish in hot weather and can be planted through summer.
- Or you can turn your attention to the cool season vegetables. Believe it or not, this is the time of year to plant Brussels sprouts for harvest next year. They need a long season of growth going into the cool season, and then provide lots of sprouts in late winter. It is also time to plant rutabagas from seed.

### Are there any flowers that like this kind of weather?

Sure! We can grow plants from all over the world, including regions that experience tropical or desert heat. Plants from the Mediterranean area, Southern Africa, Australia, and the American Southwest are especially adapted to our hot, dry climate and can give us lots of summer bloom.

- Some heat-loving summer-flowering annuals, perennials, and shrubs include cannas, celosia, cosmos, gaillardia, hardy hibiscus, lantana, salvias, verbena, and zinnias.
- Native flowers for summer include figwort, penstemon, milkweed, and California fuchsia (Epilobium).

Plant in the cool of the day, water more deeply, pick fruit early if necessary. And please water your trees.



## Redwood Barn Nursery

1607 Fifth Street Davis, California



Looking for a dramatic flower for hot summer sun? Canna Cleopatra has flowers that vary from spotted to solid yellow or red, all on the same plant. Tropical leaves, long bloom season, easy to grow!



## Redwood Barn Nursery

1607 Fifth Street Davis, California



Gardeners everywhere love hibiscus flowers, but the tropical types freeze here in winter. The rose mallow (*Hibiscus moscheutos*) is root-hardy and thrives in hot sun. It can even grow in a pond.



## Redwood Barn Nursery

1607 Fifth Street Davis, California



Sun scald occurs when peppers and tomatoes are nearly ripe and then get exposed to excess heat in the afternoon. Fruit that are shaded by the foliage will likely be fine. Pick any that are on the outside of the plant before very hot weather is predicted, or consider a simple shade screen to protect the fruit from the afternoon sun.



## Redwood Barn Nursery

1607 Fifth Street Davis, California



Persimmon leaves with sunburn. This is due to insufficient irrigation during our recent heat wave. The tree will recover but definitely needs a good, deep soaking.



## Redwood Barn Nursery

1607 Fifth Street Davis, California



Tomato fruit exposed to temperatures over 100 degrees can be damaged. 113 degrees? Cooked! Pick early: any fruit near breaker stage can be harvested and allowed to ripen indoors. Well-watered plants will be fine and have plenty of time to set more fruit.



## Redwood Barn Nursery

1607 Fifth Street Davis, California



California native flowers for sunny summer sites can include showy milkweed (*Asclepias speciosa*). Many types of insects visit the flowers, and monarch butterflies may lay their eggs on the foliage.