

More Information on our Diminishing Water Supply **by Joan Bergsund**

Tuolumne Utilities District is beginning the annual spring flushing of all water lines throughout the county. We are urged to minimize our water use during this period. Hold off on doing the laundry while they are flushing in your neighborhood. This practice is just another reminder of the limited nature of our water.

Even though we have been happily soaked to the skin in recent weeks, with snow accumulating in the high country, we are still cautioned to consider drought conditions when we think of the months ahead. The short blast we received over the weekend of March 21 & 22 was welcome but spring conditions are coming on fast. As you know, Master Gardeners are forever talking about water and the potential lack thereof. There is always more to say.

I looked up “aquifer” in my Random House dictionary and learned that it is “any geological formation containing water, esp. one that supplies the water for wells, springs, etc.” People who have dug wells to avoid or augment TUD water often assume that there is no downside to this practice. They feel fortunate that they can manage their lawns, vegetable gardens, rose arbors, etc. by tapping into the well. Ahhhhh. To the contrary, we understand that what water there is underground can be depleted as more and more people dig wells, and that in these drought years, underground resources are sometimes not replaced.

Tom Scesa, TUD engineer, said we have limited aquifers in Tuolumne County and that much of our water is located within fractures in rocks. I also spoke with John H. Kramer at Condor Earth Technologies. As a California-certified hydro-geologist, he too spoke of the fractured rocks that hold water but the amounts are not like those available in the valley where the underlying soil is sandy. You can drill in the foothills and find water, at adequate pressures, but there is little storage. Eventually these wells can be drawn down and dry up. Although they will be replenished seasonally, they are still at risk. If you are drilling in schist that is relatively ductile (flexible), the fractures that hold water tend to be isolated and can close off at depths around 350 feet, reducing the amounts of water held. If you drill in granite or diorite, much stronger rock, they tend to hold open the fractures so water can be stored and transmitted longer distances. There is always the chance that you will drill a dry well or “duster” where no water-bearing fractures are encountered.

Interesting was the information about Table Mountain where the ancient stream deposits underneath the volcanic cap are more like the valley sediments. The wells drilled here can be shallow but not good producers. The early ranchers held large parcels which tended to protect them from overdrawing their wells. The water drawn to service their cattle was replenished each year so that they tended to have a sustainable yield. This would not have held up under intense agricultural use and today the gradual proliferation of vineyards may have difficulty in the future. Certain forage crops can use recycled water as provided by TUD, and this practice is strictly regulated by the State of California.

As we know, the foothill region is home to limestone caverns and old mines. These tend to fill up with water and if you tap into one—the driller will find no resistance to the drill—you’ll figure you have an unlimited water supply. Unless pumped heavily over several seasons this may be sustainable. All wells must be sealed and sanitary, but the depth of the water table can be measured at any time by using a sounding plug or chalk line system through special ports sealed with vermin-proof plugs. Well users should acknowledge that even their supply is limited and, whether shallow or deep, a well can run dry. Are you near a neighbor who is also pumping from a well? You may together be lowering the water table which is supplying you both, with a dry well in your future.

What does this mean for Tuolumne gardeners? Whether you rely on a well, or tap into TUD’s supply, you can reduce the size of your garden that requires regular water. Remember to water deeply when you do turn on the hoses. Replace your lawn with native plants and grasses. Let your lawn lie

fallow, as you get used to the “new look”, as jarring as it may be in the beginning. Let leaf fall from the trees have the upper hand and just accumulate into a toasty brown carpet. The plants that you do retain should be watered by drip irrigation, the most water-wise system to date, and even reduce the amount of water you provide to see how little it takes them to survive.

Two lawn grasses are being tested at the master gardeners’ demonstration garden located beside Cassina High School. They are both varieties of buffalo grass. They both die back in the winter, but come to life again with water and warm weather. Both require very little water. Last week's column described these grasses in great detail. How about slowly replacing your lush lawn with either of these species? Have a look at the samples at the demonstration garden located at Cassina High, open to the public the first Saturday of each month. Or call our office for an appointment—we want to assist in every way possible. Our goal is to encourage wonderful gardens appropriate to our region.

The gardens we feature on our annual tour in May do not always promote the ideals we preach. We know our public likes to see pretty gardens, and some of those include large areas of lawn. But even these, in time, we hope, will make some accommodation to the water, ever diminishing, we have available. The tour this year will be on Sunday, May 17th. Tickets will be available soon.

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Joan Bergsund, Tuolumne County master gardener, has a brown carpet of leaves and no lawn. The fast-growing weeds and grasses are green, and create the illusion of a “lawn” which is nice to look at for as long as it lasts.