Groundwater Awareness

by Rebecca Miller-Cripps

March 11-17, 2012, is National Groundwater Awareness Week. In this year of low snowpack water content and low amounts of rainfall, aren't we more concerned about surface water supply? What is the importance of groundwater?

According to the U.S. Geological Survey (USGS), in 2009 California moved into first place as the highest groundwater-using state in the nation, pumping 10.7 billion gallons per day (bgd) of groundwater for all purposes. That's 1/3 more than the second-place state, Texas, that pumps 8.02 bgd. Surprisingly, Nebraska ranks third, using its groundwater to irrigate the cornfields that nicknamed it the "Cornhusker State." If you eat food containing corn grown in the Midwest—and who doesn't?—you are also "drinking" groundwater.

With our current dry winter being compared to 1976-77, the single driest year on record in California, and water agencies talking about voluntary conservation, it's a good time to take a look at our local groundwater situation. Let's talk about some of the common questions and myths surrounding groundwater.

I don't need to worry about water; I have a well: People often think that a well is a completely independent source of water. Writing in this column a few years ago, Master Gardener Joan Bergsund said, "People who have dug wells…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."

However, according to the USGS, "Although we only see surface water on the Earth's surface, there is a strong connection between nature's surface-water and groundwater systems" (http://ga2.er.usgs.gov/edu/quiz-groundwater.cfm).

Groundwater storage is replenished by precipitation. Snowmelt and rainfall infiltrate the soil, allowing groundwater release from springs and seeps during the dry season that helps keep local streams and rivers flowing. Heavy draw-down of a well can actually affect river flows.

In a study performed by USGS, 54 rivers across the U.S. received an average of 55% of their annual flow from groundwater! Unfortunately, in drought years, underground resources are sometimes not replaced.

Wells draw water from the aquifer: Most of the underground water storage in the foothills and Sierras occurs in fractured rock. There are not really aquifers in the Midwestern sense, where large areas of sandy soil collect and hold water. Rock fractures in the Mother Lode may or may not contain water; well drilling may find water, but the storage is short-lived. These wells can be over-drawn and may run dry.

What water there is underground can be depleted as more and more people dig wells. If you and your neighbor are both drawing from the same fracture, you may be draining each other's water supply. This is the reason for frequent stories about having to drill a deeper well after a neighbor develops a nearby parcel and drills a new well.

What can you do to protect groundwater?

1. **Only use your share**. In the West/Southwest, the major use of residential water is for irrigation. Most lawns and landscape plants are overwatered. Consider not watering your lawn at all this summer. It will come back when rains increase.
2. **Check your sprinkler schedule**. Some automatic sprinklers are timed to come on every day, even when it's raining. There's no reason to water your lawn daily….ever!

3. Plant native and/or drought-resistant grasses, ground cover, shrubs, and trees. There's still time, with our spring storm forecast, to get native plants into the ground. Find natives and information about their care at the California Native Plant Society spring plant sale on Saturday, April 21, in Jamestown.

4. Prevent contamination. Reduce or eliminate pesticide and fertilizer use. Mix hazardous chemicals over a non-porous surface such as a tarp or cement driveway, where spills can be cleaned up or absorbed. NEVER rinse fertilizer, pesticide or chemical spills into the storm drain. Dispose of household hazardous waste during an appropriate drop-off event.

5. If you own a septic system, have it checked and pumped regularly. Septic system failure is a major water contamination problem in the Mother Lode.

One of my favorite phrases is "respect for the interdependent web of life of which we are a part." Let's all do our part, working together, to protect the renewable resource of groundwater.

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