

### **3. Groundwater: Managing a Vital Resource for the Long-Term**

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There's a lot of talk about groundwater these days. The drought is the cause of some of that talk. But also, the recently passed Sustainable Groundwater Management Act (SGMA), which requires local/regional entities to form Groundwater Sustainability Agencies (GSAs) by June 30, 2017.

In the Tulare Lake Watershed, groundwater is an essential natural resource. We depend upon it to satisfy between 33% and 70% of our total water use (depending upon precipitation) – more than any other region in California.

The problem is, we don't replenish our supplies at nearly the rate at which we withdraw them. This leads us to a steady decline in water beneath the surface.

California is the only state without comprehensive statewide groundwater management programs. Cue the state legislature's recent passing of the SGMA.

The SGMA takes a horizon-view of the need to build back those ever-dwindling underground water supplies. It also presents an opportunity for collaboration and consensus-building across sectors and jurisdictions – agriculture, environment, cities, counties, and water agencies.

“California's limited approach to groundwater management has been a concern for a long time, but the drought has drawn renewed attention to this increasing problem,” said Lester Snow, executive director of the California Water Foundation and former California Secretary for Natural Resources. “Developing effective plans for how we manage this valuable resource is a crucial step to ensure that California's farms, cities, and environment have reliable water supplies today and in the future,” he continued. [i]

As mandated by the new law, GSAs are currently taking shape across California to begin tackling some difficult and controversial decisions about how to achieve “sustainability.”

In the Tulare Basin, several GSAs are forming that are loosely based on watersheds within the hydrologic region – Kings, Kaweah, Tule, and Kern River Basins. The structure and relationships of these new GSAs are still evolving. People across the state have their eyes on the Tulare Basin, as the largest single user of groundwater, to see how these groups and their sustainability plans take shape.

But what is sustainability?

“No one really knows what sustainable management is yet. That's what we've got to figure out,” says Matt Hurley, General Manager of the Angiola Water District, and part of the Groundwater Task Force that helped develop the new legislation.

According to the SGMA's legal description, sustainability is the "management and use of groundwater in a manner that can be maintained ... without causing undesirable results."

Hurley likens the idea of groundwater sustainability to the concept of balancing a checking account. "A bank can't let you take out more money than you put in. The bank will cut you off if you're overdrafting. We need to think about our groundwater the same way."

Continuing with the banking metaphor, it's difficult to monitor an account if one isn't tracking deposits and withdrawals. In California, we have a dearth of data about our groundwater balance, which means we've been making land use decisions based on optimistic conjecture instead of actual data.

Lack of visibility has also been an obstacle to reckoning with the problem of groundwater depletion. Dave Orth, general manager for the Kings River Conservation District, recently told the Public Policy Institute of California (PPIC) "It's hard for stakeholders to fully understand the scope of the problem, since you can't see it. Helping to educate stakeholders and then working collaboratively with them to get buy-in on solutions will be key." Orth is also a California Water Commissioner and was a key participant in the development of the SGMA.

Throughout the contentious history of California's water development, the management of groundwater escaped regulation, unlike tightly regulated surface water supplies. Wells and the quantity of water withdrawn from them have been viewed as proprietary information.

Improving the collection of groundwater data is an important component of the new SGMA. "It's been a great mystery and will be for the next two years. But we should have a better grasp on it soon," said Hurley.

There's hope

The new groundwater legislation is an opportunity to align ourselves – as a watershed, as a region, and as a state – on a path that ensures a water-secure future for our children and grandchildren.

We can no longer deny that we've been living beyond our means, drought or no drought. It's a tough dose of reality, but a necessary one.

Orth told the PPIC, "Less than five years ago, we couldn't have done this law—groundwater was a no-touch area." Despite tense differences of opinion in the farming community, Orth is hopeful because "mindsets have changed in a very positive way" and people recognize that "things have to change."

Successful groundwater management for aquifer recovery is very possible. The Santa Clara Valley was the first region in the United States to record land subsidence as a result of

groundwater extraction. In response, the region embarked on an aggressive groundwater recharge strategy that has returned aquifers to levels not observed since the 1920's. In some cases, aquifers have actually overflowed.

In the Tulare Lake Watershed, where it has been reported that we are drawing on water reserves 20,000 years old, it will take collaborative problem-solving and tough decisions to rebuild groundwater levels.

"The planning exercise being imposed by the GSA is going to lead us toward solutions," said Dick Moss, Vice President of Provost and Pritchard Engineering Consultant and Vice President of the Tulare Basin Wildlife Partners. Some of those solutions, he said, include water recycling, water conveyance, Delta fixes to increase reliability of Delta flows, and taking land out of production, especially in sandy soils where recharge opportunities are greatest.

In Southwest Tulare County, where new pistachio farms continue to emerge, Hurley and the newly-formed Southwest Tulare County Water Authority are purchasing land to keep it out of production and plan for groundwater recharge and ecosystem-enhancing projects. "We're trying to create spots where we can hedge against the constant drum beat of development," said Hurley.

"The management of this resource [water] has to be at its highest levels of efficiency or it will hurt us all," said Hurley of the need to better plan, monitor, and manage groundwater.

The new groundwater legislation is a call to action for all residents of California to be more responsible and more informed: both farmers and city dwellers. Moss has this advice: "Growers can no longer leave this issue to the water districts. Ultimately, there will need to be a balancing on each ranch or farm. And as communities, if you don't see your city getting active in groundwater conservation, then you need to rattle some cages."

More information on groundwater (English/Spanish):  
[http://www.ppic.org/main/publication\\_show.asp?i=1106](http://www.ppic.org/main/publication_show.asp?i=1106)

[i]  
<http://mavensnotebook.com/2014/07/10/this-just-in-new-report-highlights-urgent-need-to-address-groundwater-problems-throughout-california/>