

WATER ISSUES

DESCRIPTION

While 2016 may bring some relief to our ongoing drought, the supply and quality of water is certain to remain a critical topic in discussing northern California's economic future. Discuss the current technological, regulatory, and political issues surrounding water use in the state today.

Moderator: Eric Houk, *Professor*, College of Agriculture, CSU, Chico

Panelists:

- **John McCullah**, Salix Applied Earthcare
- **Paul Gosselin**, *Director*, Butte County Dept. of Water Resource Conservation
- **Peter Bonacich**, California Water Service

This is a difficult topic, with a few difficulties because it is new for California: first, the introduction of the change in how we manage water, next, the changing of land use, and last, it's something you can't see.

DROUGHT

In the past, decades-long droughts were the norm. The last hundred and fifty years have been historically wet and we've taken water for granted.

I have spoken of the rich years when the rainfall was plentiful. But there were dry years too, and they put a terror on the valley. The water came in a thirty-year cycle. There would be five or six wet and wonderful years when there might be nineteen to twenty-five inches of rain, and the land would shout with grass. Then would come six or seven pretty good years of twelve to sixteen inches of rain. And then the dry years would come, and sometimes there would be only seven or eight inches of rain. The land dried up and the grasses headed out miserably a few inches high and great bare scabby places appeared in the valley. The live oaks got a crusty look and the sage-brush was gray. The land cracked and the springs dried up and the cattle listlessly nibbled dry twigs. Then the farmers and the ranchers would be filled with disgust for the Salinas Valley. The cows would grow thin and sometimes starve to death. People would have to haul water in barrels to their farms just for drinking. Some families would sell out for nearly nothing and move away. And it never failed that during the dry years the people forgot about the rich years, and during the wet years they lost all memory of the dry years. It was always that way.

~John Steinbeck, East of Eden

SO, HOW DO WE DEAL WITH THE LONG- TERM SUSTAINABILITY OF GROUNDWATER?

- New legislation
- At least for the next six to ten years, or into the foreseeable future
- Everyone has heard the subsistence horror stories
- Most areas have plans in place, but there is nothing unifying the state

SGMA- SUSTAINABLE GROUNDWATER MANAGEMENT

SGMA is a process for all local agencies to track and manage their groundwater.

- If the local agency does not have a plan in place, the state will step in to manage on their behalf.
- If the state must step in, it will impose fees and limit pumping until groundwater has reached a sustainable level.
 - A. This is a process that *needs* to be handled locally.
 - B. Local agencies should identify a water budget.
 - C. This is based on how much is coming in, and how much is being used, in order to create projections to find where the water basin is going.
 - D. This information is then used to decide at what level to set the balance point, the level to which basins will be drawn to.
 - E. As humans, we **can** control how much we pull out of the ground and develop the opportunities to maximize recharge. We will need community value judgements about long-term sustainability.
 - F. This comprehensive monitoring network will affect the economy and land use.

PETER BONACICH, CALIFORNIA WATER SERVICES

Peter works for a company that is very different and diverse. It is regulated by the CPUC.

How did we get the regulations for residential water use?

- Asked to do voluntary water reductions to reduce usage by 20%
- April 2015, given mandatory 25% reductions
- Water surveyors had a very short window to produce a plan
 - 14.1 - had to outline a plan on how to deal with water waste
 - Established goals for each area based on the community

- Used data about gallons of water per capita
- Used a different water reduction percentage by community. For example, San Francisco is a cool climate with very little landscaping whereas Chico is a hot climate with lot of landscaping.
- Hotels were mandated to ask customers if they want their towels and linens laundered

How do we enforce these things?

- Notify the customer in writing. If their usage remains too high, fine the customer. However, many fines were forgiven if the customer would undergo a water evaluation and implement practices to reduce water usage.
- Must meet reduction targets
 - CAL Water - reduction percentage created on an individual basis, compared to their 2013 water usage
 - In 2013, some customers were still not being metered but rather had a flat fee service. Those customers' reduction goals were based on averages. In 2014, everyone is now metered.
 - Adjustments are made based on circumstances, such as additional people moving into the household.
 - 1 unit of water is equal to 748 gallons

In February, the state is going to look at all the targets. We aren't currently expecting a change. There will be another revisit in April.

From June 2015 to November 2015, all north state communities have met or exceeded their water reduction goals. (In Chico, there was 39.6% savings).

Lots of incentives to conserve:

- Turf Rebate Program
 - Worked so well that it ended because funding had been exhausted
- Water Efficient Toilets

In Chico, the water table has increased a few feet.

Water conservation just works.

State will continue with drought-time regulations on water use.

JOHN MCULLAH, SALIX APPLIED EATHERCARE

“Water quality, not just quantity.”

John is a Geologist - Studied at Humboldt State and worked on the a project for the restoration of the Trinity River

- I. During the restoration project, this question was posed: **What is the value of the natural resource?**
 - A. There was an idea that a salmon was worth \$326 each. Therefore, if due to a reduction in the quality of water, the number of fish decreased by 300,000, this meant that it was “worth” \$9.8 Billion.
 - B. **Then, if we can restore the water, we can restore the fish.**
 - a. The idea that restoring the quality of water is beneficial is not a new idea.
 - b. In the 13-15 Centuries in Britain, there was raw sewage that filled the streets.
 - c. This affected the drinking water, making the people sick.
 - d. Once the water was pumped out, people’s lives’ were saved.
- II. We are still doing just that, keeping water flowing. Water that was once stored in the ground, is now flowing out in ditches. But this loss of water also means a loss of sediment and a loss of fish habitat.
 - A. In the 1970s, in Ohio, rivers were catching fire because of chemicals being dumped right into the river. The Clean Water Act was then passed to improve the quality of the water.
 - B. In the 1980s, the EPA determined that Agriculture and Construction were disturbing the water and sedimentation would increase.
 - C. In the 1990s NPES required that construction sites have a storm water pollution prevention plan anytime that they would disturb more than one acre of water.

These regulations are helping to develop effective technologies and plans that prevent erosion. We should be using best management practices. The science that we know about erosion should be applied to construction.

At Sierra Central, students are being taught how to properly put in silt screens and spread straw, etc.

There are also fines associated with these regulations. For example, the Redding Soccer Complex was fined \$425,000. These regulations are such that if you own the land where the work was done, you are responsible, no matter who did the work.

The costs associated with proper erosion control are small, something like 5-7%.

III. Recharging the Groundwater:

- A. Impervious surfaces like roofs, gutters, etc. make water leave our basin. A study in Oregon about paired watersheds showed that watersheds without roads held 55% more groundwater.
- B. When impervious surfaces are put in (like a new road is built) we must do something opposite to be able to balance the hydrology and put water back in, such as urban streams.

QUESTIONS FROM AUDIENCE

1. **If the state will require these management practices from all water surveyors, will they have different levels for each or will the levels be uniform across the state?** For example, the level of water will naturally be different in Kern Country which is a desert versus in Butte Country with lots of springs.

Answer #1: All public agencies with land use authorities or that manage/provide water for the public will have to create their own long-term sustainability plan. Most agencies have already elected to be in the long-term sustainability. All will be regulated, and the methodology must be statewide.

Everyone must hold the same process, but not necessarily the same number of feet of water in each place. All decisions will be much localized. Finding the right balance for each location will be about determining the details at the local level.

2. **Is there a Federal response to this? (Follow-up question from #1)**

Answer #2: No. It has been noted that California was rare in that we did not have a state water management agency, most other states already have them.

3. **What about "old" water rights? Will they be affected?**

Answer #3: No. The surface water versus groundwater rights are different. The new legislation is specific in that existing water rights will not be altered, this is about working collectively.

4. Will there be more funding for water-reduction programs?

Answer #4: It is currently being looked at by the state.

5. In the 1970s things were put into place like now, due to a desire to build more water reservoirs but the money just disappeared. Why will this time be different?

Answer#5 (Paul): The accounting for bonds is tighter now. Bonds are much longer term.

6. How do we reconcile habitat loss and water retention?

Answer #6: There is a grant to identify and map the propensity of areas to be able to recharge water. Doing a cost-benefit analysis of things like change from rice to trees.

7. What about waiting for wetlands permits? (Paradise)

Answer #7: Science is just not quite there yet. Intuitively we know that wetlands are good.

8. How do residents help the recharge?

Answer #8: Things like landscaping. If you till the soil very deep and put a layer of organic matter there, you can train the roots of the vegetation to go deep. Then, the soil will hold water.