

Lessons we should learn from the drought

Jay Lund, The Sacramento Bee, 11-2-16

California is entering what could be a sixth year of drought, despite a wet October.

The drought is not over in the sense that surface water storage has not fully recovered – the state would need three Folsom reservoirs filled to the brim. And our groundwater reserves have been drawn down – it would take 12 full Folsom reservoirs stored underground to return to predrought levels.

The drought has had devastating effects on forests and fish populations. Even if we have a wet winter, groundwater depletion will remain an issue for years, as will ecosystem recovery. And it will take many years to figure out how to efficiently manage the state's water system.

Several lessons are clear from the last five years of drought:

- It has brought us together in realizing that California is a dry state where no water user is likely to get all it wants. There will be trade-offs, changes and discomfort, but we are all better off cooperating than feuding as we deal with the challenges of our dry and warming climate.
- Urban water users were mostly well prepared for drought, and in 2015 substantially reduced their water use with little economic impact. Local control and finance has made most urban water agencies robust. More urban conservation is possible, but will bring financial costs and adjustments.
- Agriculture has been widely affected, but economic damages have been far less than losses to the state's water supply. Keys to agricultural success in the drought have been the availability of groundwater, water trading, cooperation among local agencies and good global prices for California's agricultural products.
- Small water systems are always among the most vulnerable water supplies. The drought tested many small systems to the point of failure and highlighted the need for county and state governments to develop better long-term solutions for rural communities.
- Forests are probably the environmental areas most affected by the drought. Low precipitation and high temperatures have resulted in the deaths of millions of trees that will change forests for decades to come, particularly with a warming climate.
- Many native fish species have been decimated by the drought's low flows and high water temperatures. We might see additional endangered species listings, as we did following the 1988-92 drought. For a long period of time, we'll need to give more attention and resources for restoring native fish populations and preparing for future droughts.
- Winter-run salmon suffered from lack of cold water downstream of Shasta Dam. The devastation of these salmon was matched only by the resilience of downstream farmers in accommodating disruptions in water deliveries. This drought is a harbinger of increasingly scarce cold water for salmon. We need to prepare.
- Waterfowl did fairly well during the drought, through a combination of luck, well-timed storms and better management.

- The governor's 2015 Water Action Plan helped galvanize and integrate sometimes divergent state agencies and programs to deal with the drought. Hopefully this innovation expands and continues with future governors.
- California has more water expertise and funding than all other states combined, but is often not organized to employ these resources effectively. A prime gap identified by the drought is the need for common state water accounting and analysis across agencies.

You can't always get what you want, but California's urban and agricultural water users have mostly prospered during the drought. The drought has created new problems, highlighted others and brought new solutions, particularly for groundwater. For the environment and other users, the drought has shown major gaps in organization and resources needing local, state and federal attention.