



## The California Drought and New Growth

For decades, California water use has been a three-way tug-of-war among urban uses, irrigated agriculture, and instream flow preservation for fish and wildlife. Climate change and the current drought have dramatically sharpened these conflicts.

- California's population has grown to almost 39 million. At the same time our per-capita water use has remained excessive. California's per-capita domestic use is about double that of Australia, a place with a similar climate and economy. The state is becoming ever less resilient against drought as the population grows while the water supply remains fixed or declining. One of the regions at risk of chronic water shortage is the Silicon Valley, one of the state's economic powerhouses.
- The future of farm water supplies is more precarious than ever, especially given the state of water stored underground. Our groundwater is being depleted at a record rate, and the water-bearing formations are being permanently damaged. At the same time some farmers' crop choices seem to be uninfluenced by water availability realities. California agriculture is making itself ever more vulnerable to drought.
- California fisheries are in the worst condition they have ever been in. Some of the trouble is due to the drought, but there's been a long-term decline even in normal years due to excessive diversions of water for farming and urban use. In losing our fish and other stream-dependent wildlife and habitat we are jeopardizing the quality of life for which California is famous.

### The Current Drought May Be the New Normal

In recent years climate scientists have been able to use tree ring data to reconstruct past climate conditions in California going back thousands of years. The results are disturbing. There has been a 50- to 90-year cycle of wet and dry years over the past few thousand years, but some dry periods have lasted more than a decade and a couple lasted more than a century.

These past megadroughts occurred even without human-induced climate change. However, climate change has introduced another layer of concern.

Climate science has not given us definitive predictions as to future rainfall, but there is consensus that California will likely have warmer conditions, and will lose most of its snowpack and the vast, cost-free water storage that the snow provides. This means that runoff is likely to occur more in winter and less other times of the year and peak runoff will be more intense and harder to capture and store. We may have less usable water even if precipitation stays the same.

We know the current drought will have consequences even after it ends. Groundwater aquifers that have been heavily pumped will need water to restore them to future use. Some aquifers have been permanently impaired—essentially flattened and no longer able to store large quantities of water—as shown by land subsidence. Some fish populations may have become extinct locally and need plantings from other areas. Millions of trees are dead or dying, presenting a major wildfire risk.

## **New Growth and Development Can Cause Water Shortages**

Local governments have been too quick to approve developments without taking into account water needs. California law currently requires that a sustainable water supply be assured before approval of any new development of 500 units or more. That threshold alone hasn't been able to ensure that developments are sited and built to take into account water efficiency and water availability. Here are some measures that would help:

- **Close the new development loophole** –The 500-unit threshold results in too many homes without a guaranteed water supply. Amending the law to lower the threshold for demonstrating a sustainable water supply would help make sure residents moving into new developments won't find themselves without drinking water or unknowingly draining local streams to water vast lawns. Another needed change is to reduce the alternative threshold, currently set at ten percent of current services, to five percent of water hookups or water used.
- **Update Urban Water Management Plans.** Large interests—big agricultural corporations driven by crop prices, water agencies that depend on customers using high levels of water to generate revenue, water banks that profit when drought is the worst, and groundwater users who still aren't fully regulated—are not motivated by drought alone to change their ways. This unwelcome lesson from this current drought cannot be ignored by water agencies or the Department of Water Resources. The Urban Water Management Plans used by water agencies to plan water use over five years under various scenarios must be updated to take into account these realities.
- **Shift to water neutral development** – This means having more housing without using more water. The City of Los Angeles has been doing this for decades. Tools for doing this include more multiunit housing (apartments or condos), which have less landscaping and thus less demand for water. California can no longer afford new projects with big thirsty lawns. Builders can design projects or retrofit existing development to retain more rainwater on site, either with porous surfaces that allow water to soak into the ground, or with cisterns (like rain barrels) to store roof runoff for later use. Offsets are another tool. Some water agencies are already requiring new development to provide offsets for the added demand. An offset might involve swapping out old, inefficient toilets, or rerouting graywater from showers and laundry to landscaping rather than to the sewer.
- **Reclaim and fully treat sewage water for irrigating crops where it is safe.** Examples of crops that could be irrigated with well-treated sewage water are animal food crops like alfalfa, or orchard crops that do not use spray irrigation. Explore recharging groundwater basins with treated waste water, freeing up freshwater for fish and people. For farmers, treated sewage is a highly reliable supply and something that some have begun to use thanks to the drought. As much as half of our urban water use could be treated and reused. However, the key is to make sure the water is well treated and tested before use.

### **For more information contact:**

Kyle Jones  
(916) 557-1107  
[Kyle.Jones@sierraclub.org](mailto:Kyle.Jones@sierraclub.org)

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