

Environment & Energy

California's Variable Water Supply Needs More Than Rainfall

By Allison Schutte and Nathan Metcalf

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California's water supply is affected by fluctuating conditions that are addressed by state water conservation laws, say Hanson Bridgett LLP attorneys Allison Schutte and Nathan Metcalf. Despite recent snow and rainfall, two years of severe drought mean the state water board's controversial diversion measures and restrictions will remain in place, they say.

Downpours in October and December, along with record snowfall in the Sierra Nevada, alleviated dry conditions statewide and moved California out of the U.S. Drought Monitor's "exceptional" drought category. The state is still mandating conservation and curtailing water diversions, however, and water agencies have declared water shortage emergencies and called for mandated water use restrictions.

Why is most of California still in an "extreme" or "severe" drought?

The answer, we believe, lies in a combination of the climatic uncertainty resulting from seasonal precipitation and climate change, the physical and practical limitations of California's surface water storage dependency, and California State Water Resources Control Board's (State Water Board's) regulation of diversion, considered an overreach by many.

California's Variable Water Supply

Most of California's precipitation comes between December and April. Winter storms bring rain to the coast and valleys and drop snow on mountaintops, which melts in the spring and provides additional needed surface water flows.

On average, California receives about 200 million acre-feet of water per year in the form of rain and snow. We rarely experience an average year, however. California has the most variable weather conditions in the nation, often fluctuating between extreme drought and extreme flood. Climate change may intensify that variability.

The state, federal government, and local water agencies operate complex water storage and supply systems, transporting water more than 700 miles from California's northern Sierra Nevada mountains south to Los Angeles and beyond. It is the snow (that acts like a reservoir) and the system of surface water storage facilities that allow use of the winter precipitation year-round.

Prior to this rainy season, California had two very dry years. The water year that ended Sept. 30, 2021, was the second-driest on record. The combination of unusually low precipitation, warm temperatures, and dry soils resulted in unprecedentedly low runoff from the Sierra-Cascade snowpack, leading to significant reductions in water supplies and extreme low reservoir storage levels.

This prompted California Governor Newsom to issue drought emergency proclamations, directing state agencies to take immediate action to preserve critical water supplies, and calling for Californians to voluntarily cut water use by 15 percent. In addition to the governor's actions, last August, the State Water Board also adopted emergency regulations and issued curtailment orders in large parts of the state that prohibit water diversions due to a lack of available water.

State and Local Agencies Continue Drought Actions

Still, despite the significant rain and snow over the last several months, sometimes falling from "atmospheric rivers," both state and local water agencies continue to take actions as if we were still in prolonged drought. Californians are continuing to be asked to reduce their water use by 15%, and on Jan. 4, 2022, the state issued emergency drought rules aimed at wasteful water use, even though snowpack was 150% of average on that day.

Specifically, the drought rules ban practices such as hosing down sidewalks and driveways, washing cars without a shutoff nozzle on the hose, and irrigating lawns and gardens after rain. Likewise, several public water suppliers have imposed mandatory water use reductions on customers, with target reductions between 15-50%.

Further, the looming specter of curtailed water diversions and further regulation by the State Water Board is dictating water conservation actions. With December's storms, the State Water Board has lifted water right curtailment orders for most of the state.

A major concern for water agencies, however, is that if there is no significant rain and snow for the rest of the winter, and curtailments go back into effect, it will prohibit water agencies from diverting runoff flows into storage during the spring and summer months. Then, if next year is dry (and potentially the following years), low water storage levels could cause severe water supply shortages.

Diversers may claim an exception to curtailment if their only source of water is needed for minimum human health and safety needs of 55 gallons of water per person per day. But this exception only applies if the diverter takes certain actions, including operating under the strictest conservation regime and declaring a water shortage emergency. Thus, to take advantage of the exception, diversers must be prepared now to address the potential for continued drought and curtailment of diversions.

Conservation Remains Prudent

As it stands today, San Francisco closes out January with less than an inch of recorded rain and there is no significant rain in the forecast for February. The state remains far from reversing the damage caused from two exceptionally dry years.

With the return of dry weather coupled with California's dependence on surface water storage from winter precipitation, the conservative approach in managing water supplies appears to be prudent. Water experts say the wet season needs to wrap up with 140% of average precipitation for drought relief.

Given the State Water Board's curtailment orders and unpredictable precipitation, significant uncertainty related to water supplies and storage remains.

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