



January 4, 2023

*The California Hydrology Update is a regular summary of current weather conditions in the State of California and serves as a supplement to the data on the [California Water Watch](#) website. It is produced by the California State Climatologist, Mike Anderson, and the hydrology and forecasting team at the California Department of Water Resources. For the latest on drought conditions, visit [drought.ca.gov](#). For tips and resources for conserving water, please visit [saveourwater.com](#).*

### Precipitation

The first quarter of water year 2023 (October 1, 2022 to September 30, 2023) has passed. Statewide water year precipitation to date up through January 3, 2023 is 10.1 inches which is 120% of average for this time period. That ranks as the 35<sup>th</sup> wettest opening to a water year with records dating back to water year 1896. A significant weather pattern change arrived with the winter solstice with the blocking high pressure moving south and a stronger jet stream pushing a series of warm storms into California. That pattern is expected to continue through at least the first half of January.

### Temperature

The statewide average temperature for October/November 2022 is 55.1 degrees Fahrenheit which is 0.7 degrees above the period of record average based on [Western Region Climate Center's California Climate Tracker](#). Expectations are for temperatures to be near average with a greater potential for cooler than average temperatures over the Sierra Nevada mountains. Historically La Niña years are some of the State's colder years. While not as warm as recent La Niña years, the current year is still running above average. This is consistent with the warming trends that we have seen over the past decade due to California's changing climate.

## Reservoirs

Statewide reservoir storage at the end of December is 75% of average. Storage can vary significantly based on size of reservoir and purpose. Reservoir levels have come up with the series of storms to end December and into January. As this continues, the smaller reservoirs with flood control requirements will shift from drought recovery to flood mitigation operations. Both Shasta and Oroville still have significant deficits to overcome before this happens and the storms at the beginning of January will help to offset some of those deficits.

## Snowpack

At the beginning of January, the automated snow sensors are reporting approximately 175% of average snowpack for this time of year. This is one of the strongest starts to a snowpack in the last 40 years. On average the snowpack grows until around April 1 when the snowmelt season typically begins. The timing, pace, and scale of storms and their temperature characteristics through the rest of January through the end of March will determine how big the snowpack gets and when it peaks.

As we saw last winter, we had a great December and ended 2021 with above-average snow for that time of year. But it disappeared following the driest January through March on record. If January through March of 2023 turn out to be similar to last year, we would still end this water year in severe drought. Early snow is always welcome, but we still have a long way to go before the critical April 1st snow survey. Due to depleted soil moisture following multiple consecutive dry years, we still need above-average annual precipitation and a good spring snowpack to refill reservoirs once the flood control season has ended.

## Streamflow and Groundwater

Streamflow is elevated across much of the state as the series of storms drop significant amounts of rain. Some areas have experienced flooding and more may be expected with the continuing storms in the first part of January. Groundwater is slower to respond and 64% of monitoring wells remain below average. Continued storms and high water can help to replenish groundwater although the effects may not be seen until the spring seasonal measurements.