

California's snowpack is near a decade high. What does it mean for the drought?

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Looking to the north towards Mt. Whitney and the Sierra Nevada from Mt. Langley, California. Credit: Mel Stoutsenberger/Wikipedia

As the New Year begins, California's Sierra is closing in on the second-largest snowpack we've seen at this time of year in the last two decades, with more snow expected to pummel the mountain range in the coming days.

But here's why it's far too soon to declare an end to the [drought](#): Last year, we started 2022 with a similar bounty—and then ended the [snow](#) season way, way, way below normal.

"We've come out hot ... but at the same time, it's really early," said Sean de Guzman, manager of the California Department of Water Resources' monthly snow surveys.

On Tuesday, state water officials plan to tromp through the snow at Echo Summit, south of Lake Tahoe, for the winter's first snowpack survey, a monthly ritual that is now mostly for show, thanks to more than 100 sensors throughout the Sierra that measure accumulation every day. It's of vital importance in the drought-stricken Golden State because officials use the measurements to help manage California's water supply, which relies heavily on melting snow.

On Saturday, the statewide average stood at a whopping 162% of normal compared to historic averages for this time of year, just eclipsing last year's figure. But a Bay Area News Group analysis found that of the seven times in the last 20 years that California started the [new year](#) with an above-average snowpack, only twice—2005 and 2011—did it finish the snow season in April still above average.

Several feet of snow is expected to accumulate by early next week as yet another storm system plows in from the Pacific, bringing colder temperatures and additional rain to the Bay Area on Monday night.

"It's just far too early to tell whether or not these storms will have an impact on the drought," said Andrew Schwartz, lead scientist at the UC Berkeley Central Sierra Snow Laboratory near Donner Summit. "We were in this exact same spot last year. We were way above average, and then the faucet shut off in January through March."

Last year, the Sierra snowpack plummeted from 160% of normal at the end of 2021 to 37% of normal by the season's end. The last time California closed a snow season above average was in 2019—at 161% of normal—after ending the previous year at just 73% of normal.

There is no reliable way to predict what's in store for the next four months. If the faucet does again shut off, many of the state's reservoirs will be left mostly empty. As of Friday, two of California's largest reservoirs—Shasta and Oroville—were only at one-third of their capacity. And the snowpack, though considerable for this time of year, is still only half of what's considered normal by April 1—the end of a typical California snow season.

Jay Lund, professor of Civil and Environmental Engineering at UC Davis, says that several years of drought have left the reservoirs in a deficit that may take years to refill.

"If we had just one year of drought, we'd be OK," Lund said. "(But) we still haven't even replenished all the groundwater that was taken out from the previous drought."

Regardless of what happens this season, the long-term prospects are dire. As more [carbon dioxide](#) is emitted into the atmosphere by fossil fuel use, [drought conditions](#) are expected to worsen in the coming decades. One study published in February found that 2000-2021 was the driest 22-year period in the Western U.S. in at least the last 1,200 years. The study also found approximately 19% of the region's drought conditions were attributable to human-caused climate change.

Guzman said that climate change also makes [weather patterns](#) more erratic. So although the current snowfall is a welcome surprise, it's hard to predict if we are on a path out of the drought.

"A lot of those historical relationships that we've relied on in the past don't necessarily hold true today," Guzman said. "We need to exercise caution going forward."

Although [weather forecasts](#) can shift day-to-day, National Weather Service meteorologist Rick Canepa projects with near-high confidence that snowy conditions will continue to persist into early next week. Drivers heading up to Tahoe from the Bay Area should expect icy conditions, Canepa warned.

The series of winter storms have been a boon to more than just the snowpack. The snowplow business is booming too. Everybody is calling Amanda Kriston, a customer service specialist with Elements Mountain Company in Truckee. "A lot of people coming up renting Airbnbs are calling in saying 'I'm stuck, I can't get out of my driveway.' They are not prepared to come pick up a shovel."

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