

On eve of storms, California boosts water allocation to 35%

The California Aqueduct, 02/23/23

Second increase of season is due to early gains in the Sierra Nevada snowpack.

As California braced for yet another round of winter storms, state water officials announced Wednesday that they were again boosting supplies for water agencies that serve 27 million residents.

The Department of Water Resources said it now expects to deliver 35% of requested water supplies — up from the 30% announced last month — via the State Water Project. The DWR said the modest increase was due to early gains in the Sierra Nevada snowpack and amounted to an additional 210,000 acre-feet of water.

“We’re hopeful that more storms this week are a sign that the wet weather will return, but there remains a chance that 2023 will be a below-average water year in the northern Sierra,” said DWR Director Karla Nemeth. “Careful planning and the use of advanced forecasting tools will enable the department to balance the needs of our communities, agriculture and the environment should dry conditions continue this spring and into next year.”

The State Water Project is a complex system of reservoirs, canals and dams that is a major component of California’s water system. DWR officials cautioned that the allocation could be adjusted back down if extremely dry conditions warrant.

Late last month — and less than two months after the Department of Water Resources said it could give only 5% of requested supplies in 2023 — the department increased its allocation to 30%. At the time, officials said the allocation could change as the rest of the wet season develops.

The news marked a significant turnaround for California, which has been mired in extreme drought for more than three years. Last year’s final allocation was just 5%.

While it’s been more than three years since the state has issued an allocation of 30% or more, the number is still only about half of the average allocation. It’s been nearly two decades since the department issued a 100% allocation in April 2006.

Wednesday’s announcement came on the same day that the U.S. Bureau of Reclamation set similar allocations for Central Valley Project contractors.

The federal allocations reflect wet conditions that started the year. However, authorities said that not all river basins were equally improved, and Shasta Reservoir was still below its average capacity.

“Adequate water elevations in Shasta Reservoir are crucial to ensuring deliveries to agricultural contractors and wildlife refuges,” read a news release. “It also ensures enough cold water exists for spawning salmon later in the year.”

“Three years of record-setting drought in California will take some time to recover from,” said Bureau of Reclamation Regional Director Ernest Conant. “In the short term, the early winter storms have helped, but in the long term, we still have much catching up to do.”

The Central Valley Project stretches about 400 miles from the Redding area to the southern end of the San Joaquin Valley, with 20 dams and about 500 miles of main canals. The project pumps water from the Sacramento-San Joaquin River Delta near the intakes of the State Water Project.

Parched California Misses a Chance to Store More Rain Underground

The New York Times, 02/21/23

Torrential rains could have helped to replenish depleted aquifers, but some say state bureaucracy, designed to distribute water fairly, has stood in the way.

It sounds like an obvious fix for California's whipsawing cycles of deluge and drought: Capture the water from downpours so it can be used during dry spells.

Pump it out of flood-engorged rivers and spread it in fields or sandy basins, where it can seep into the ground and replenish the region's huge, badly depleted aquifers. The state's roomiest place for storing water isn't in its reservoirs or on mountaintops as snow, but underground, squeezed between soil particles.

Yet even this winter, when the skies delivered bounties of water not seen in half a decade, large amounts of it surged down rivers and out into the ocean.

Water agencies and experts say California bureaucracy is increasingly to blame — the state tightly regulates who gets to take water from streams and creeks to protect the rights of people downriver, and its rules don't adjust nimbly even when storms are delivering a torrent of new supply.

During last month's drenching storms, some water districts got the state's green light to take floodwater only as the rains were ending, allowing them to siphon off just a few days' worth. Others couldn't take any at all because floods overwhelmed their equipment.

In the Sonoma County wine region, north of San Francisco, a group of vineyards and local agencies is working with the Dry Creek Rancheria Band of Pomo Indians on a multimillion-dollar system of pumps and pipes that would grab large gulps of the Russian River during storms and distribute it to growers' fields. The challenge, said Philip Bachand, an engineer on the project, will be persuading California water officials, who he says are overly concerned that allowing people to reroute floodwater will deprive others downstream.

"We're beyond that time when you can just fiddle around," Mr. Bachand said. With climate change straining water supplies that are already attenuated after decades of overuse, "I really do think the sky is falling," he said. "And at some point, you've got to be ready for it to hit the ground."

Erik Ekdahl, deputy director in the Division of Water Rights at California's water-rights regulator, the State Water Resources Control Board, acknowledged local agencies' challenges. The board has worked to streamline its procedures, he said, but the state's century-old system of water rights generally protects existing rights-holders against new claims to water supplies.

“We are in many ways — I don’t want to say stuck — but we have to follow state law,” Mr. Ekdahl said. It is up to California’s legislature, he said, to decide whether the system is still working well in an era of climate change.

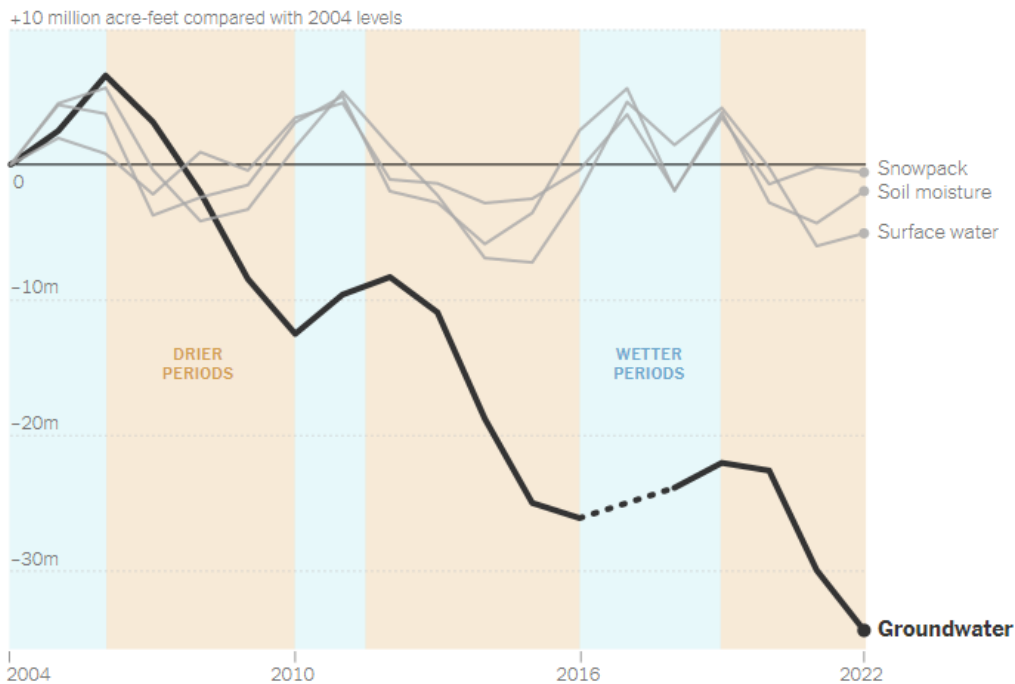
The trillions of gallons of water that have fallen over California this winter have broken the state’s driest three-year stretch on record. But they have hardly guaranteed it an easy ride the next time precipitation goes scarce.

While the state’s giant reservoirs and towering piles of snow in the Sierra Nevada get more attention, California’s groundwater aquifers can hold vastly more water — eight to 12 times as much as all of the state’s major reservoirs combined. Gravity and chance have helped some of the recent rains percolate into aquifers, but humans need to steer more of it there if the state hopes to bank enough for prolonged droughts.

In the Central Valley, California’s fruit and vegetable heartland, groundwater supplies have fallen and fallen over the past two decades, recovering only modestly during the occasional wet period. The feverish pace at which growers have pumped water from beneath their feet has caused the land surface in parts of the valley to sink by a foot a year.

California’s Groundwater Problem

Supplies of surface water in the Central Valley fluctuate with cycles of deluge and drought, but groundwater stocks have been in long-term decline despite occasional periods of recharge.



Note: The groundwater trend is based on data from the GRACE and GRACE Follow-On satellite missions. A gap in readings from August 2017 through September 2018 occurred between missions and is indicated by a dashed line. • Source: Pang-Wei Liu and Jay Famiglietti • By Nadja Popovich/The New York Times

California hopes harnessing storm water can help.

Legislation passed in 2014 requires water districts to stop overdrawing their aquifers by the 2040s. And Gov. Gavin Newsom wants local agencies to build infrastructure projects that can capture and stash 500,000 acre-feet of water on average each year. An acre-foot is the amount needed to cover an acre of land in a foot of water, or roughly what two typical households use annually. The Central Valley has lost two million acre-feet of groundwater a year since 2003, according to estimates by Pang-Wei Liu, a NASA scientist, and Jay Famiglietti, a professor and water expert at Arizona State University.

“The need and desire out there is enormous,” said Paul Gosselin, deputy director for sustainable groundwater management at California’s Department of Water Resources.

Even in this wet winter, however, the pilot projects the state has approved have managed to capture just a trickle of their potential.

For landowners and irrigation districts who don’t already have water rights to a particular creek, taking and storing water from it — even when storms are filling it with far too much to go around — requires a permit in advance from the State Water Board.

The permitting process is meant to ensure that the takers aren’t encroaching on other people’s water rights or harming fish and wildlife habitats. There are meetings and consultations to hash out details, and a public comment period to hear objections. The whole process can take months. And the resulting permit allows the holder to divert water only on a temporary basis, usually 180 days, and only when specific hydrological conditions are met.

Some water agencies argue the State Water Board makes these conditions unduly strict, out of deference to water users downstream. Hauling up and storing floodwater requires pumps, canals and, in some cases, wells that inject water deep into the earth. If permit holders are allowed to collect water only when the river level is extremely high, the infrastructure that can handle that much water can be costly to build. And if such torrential flows appear only once every four or five years, for a few days each time, the investment might not be worthwhile.

Another complaint: The process is too slow and cumbersome to help corral big floods that come, like this winter’s, out of the blue.

The Omochumne-Hartnell Water District, which operates along a stretch of the Cosumnes River near Sacramento, applied for a permit last August. When the storms started up in December, its application was still pending.

“It was frustrating,” said Michael Wackman, the district’s general manager. He and his colleagues called up the State Water Board: “What’s going on there? Let’s get these things moving.”

Its permit finally came through on Jan. 11, more than a week after the swollen Cosumnes had crashed through nearby levees and killed at least two people. By that point, so much

water was roaring down the river that it damaged the pumps that were supposed to send it away, Mr. Wackman said.

The Yolo County Flood Control and Water Conservation District, northwest of Sacramento, got a permit on Jan. 26, three weeks after applying. That allowed the district to grab only a few days' water before flows down the local river, Cache Creek, tapered off, said Kristin Sicke, the district's general manager.

Mr. Ekdahl, the State Water Board official, said that applying for aquifer-recharge permits well in advance of the rainy season, and having adequate infrastructure to capture the water, was up to the applicant, not the board.

Still, the board will continue working with districts to help them make legal use of flood flows, he said. Water from storms is pretty much the only kind in the state that hasn't already been claimed for one purpose or another, he said. "That's really what's left in California."

The Merced Irrigation District received a recharge permit last month only after storms had already submerged the area around Mariposa Creek, near the city of Merced, making it impossible to place pumps along the banks to pull water, said Hicham EITal, the district's deputy general manager. Still, simply obtaining a permit, the district's first, counts as progress, he said. "We wanted to start with baby steps."

Mr. Bachand, the engineer working on the recharge project in Sonoma County, said he didn't believe in baby steps. He hopes to persuade the State Water Board to let the project take much more water from the Russian River than it typically might allow. He knows he is in for a fight.

"These districts who are starting small, they're never going to get there," Mr. Bachand said. "And their farmers are going to go out of business."

The McMullin Area Groundwater Sustainability Agency, near Fresno, first applied for a recharge permit in August 2021. The state board rejected its application the following March, after the rainy season had already mostly passed. The board said the agency hadn't provided enough information to show its actions wouldn't be harming other water users.

Matt Hurley, the agency's general manager, said California had been stuck in a pattern for more than 70 years. After every flood, it declares its water worries over. After every drought, it wonders why it missed the chance to hold onto more water.

"We can't miss it anymore; we just can't," he said. "Too many people's lives and treasure are at stake."