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A RESILIENT WATER FUTURE FOR THE SAN JOAQUIN VALLEY IS WITHIN REACH. HERE'S HOW | OPINION

2023 was a banner year for groundwater recharge, but we can do more.

Authored by Ashley Boren, Sustainable Conservation CEO

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The San Joaquin Valley recently received some good news about its groundwater: We are replenishing more of it whenever we have the chance. Comparing two recent wet years — 2017 to 2023 — the volume of water returned to the Valley's groundwater aquifers through recharge increased by 17%.

This finding, released by the Public Policy Institute of California, validates the hard work of all those who helped move the needle on groundwater recharge in the past six years. But we can't let our foot off the gas now.

The partnerships forged, research conducted, policies developed, risks taken and hours spent in the field charted the course for 2023's positive momentum, and we must keep going to realize the full potential of recharge in California.



THE PUSH FOR WATER RESILIENCY

Over the past century, the San Joaquin Valley's natural groundwater aquifers supported a thriving agricultural industry and growing communities. However, ever-increasing water demand and reduced surface water availability led to critical groundwater overdraft in the region.



On-farm recharge on Terranova Ranch in Fresno County, 2017. Sustainable Conservation Project Director of Water Resources Joe Choperena (left) and Fresno County farmer Don Cameron (right). Paolo Vescia

With community drinking wells in the Valley drying up and the biodiversity of groundwater-dependent ecosystems on the ropes, we needed immediate solutions.

Part of the 17% increase in recharge volume was due to the utilization of more recharge basins, a well-established groundwater replenishment strategy in the Valley. But on-farm recharge, the process of applying water to farmland to recharge aquifers, has evolved from an experimental practice to a mainstream one over the past decade.

With an intimate understanding of the Valley's overdraft crisis and recharge's unique potential to help address water security for California, Fresno County farmer Don Cameron knew he could be part of the solution. In 2011, Cameron began flooding his vineyards and orchards on his Terranova Ranch with excess flood water so it would percolate into the aquifers below.

This was quite a risk; he didn't know how well it would work or how his crops would respond to so much water. But the water table rose, his crops were unharmed and the new practice made headlines.

Trailblazers like Cameron, with support from scientific researchers, have since made recharge safer, easier and more financially feasible for growers. The report shows that the volume of on-farm recharge has nearly doubled in the past six years — now accounting for almost 10% of recharge volumes reported in the Valley.

We have seen firsthand that farmers are eager to be part of the solution. But support and incentives are necessary to help grow farmer participation.



KEEPING THE GROUNDWATER FLOWING

In addition to scaling on-farm recharge, Gov. Gavin Newsom's March 2023 Executive Order, subsequently codified in legislation, freed up 400,000 acre-feet of water for recharge last year.

A drone photo of water diverted onto a newly constructed groundwater recharge basin at Mountain View and Temperance near Selma in Fresno County, California. Photo taken May 13, 2024. The California Department of Water Resources provided funding to Consolidated Irrigation District to support their efforts to expand groundwater recharge basins within the District. Xavier Mascareñas



While there is no silver bullet in the pursuit of California water security, groundwater recharge is one cost-effective tool for mitigating both the peaks and troughs of our water supply.



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Looking ahead, the Department of Water Resources is working on climate-informed models for run-off in five San Joaquin River watersheds, and subsequent studies for the remaining Central Valley watersheds will help illuminate where groundwater recharge can be done safely and effectively.

According to Stanford Geophysics Professor Rosemary Knight, the empty space in our state's groundwater aquifers is equal to the capacity of 30 Shasta Lakes. In addition to filling that space, several recent recharge projects have demonstrated the potential to yield multiple benefits to ecosystems, flood protection or drinking water supplies.

While there is no silver bullet in the pursuit of California water security, groundwater recharge is one cost-effective tool for mitigating both the peaks and troughs of our water supply.

By working with — not against — each other, we can enhance water reliability, reduce flood risk and ensure our communities and ecosystems thrive. We encourage everyone to do their part, in both wet and dry years, by supporting policies and practices that promote sustainable water management.

A resilient water future for the San Joaquin Valley is within reach.

Ashley Boren