

Farm Water Update

AT THE CROSSROADS OF WATER & GROWING FOOD



AUGUST 2023

Groundwater Recharge Doesn't Happen Without Storage and Conveyance Infrastructure

Flood-MAR Provides Multiple Benefits for Managing Surface and Groundwater Resources

Implementation of the Sustainable Groundwater Management Act has elevated the importance of groundwater recharge resulting from floodwater caused by rainfall or snow melt. Managed Aquifer Recharge, or Flood-MAR, is a tremendous tool with many benefits that come with recharge, including reduction of flood risk, climate resiliency, and support for natural ecosystems. And there is significant storage space available in many of the state's groundwater aquifers. According to the California Department of Water Resources, "The state's usable groundwater storage is approximately 8 to 12 times larger than the combined storage capacity (50 million acre-feet) of all major reservoirs in California." However, it's important to understand the role water infrastructure plays in making underground recharge happen.

Having experienced California's boom-and-bust water cycles, we're all aware how critical it is to store as much water as possible in wet years, so it's available in dry ones. Getting that water to aquifers and giving it time to make its way underground requires infrastructure.

Moving Flood Water and Snow Melt Where It Needs to Go

Just because precipitation hits the ground, doesn't mean it's in the right place or at the right time. In a normal year, about 70 percent of California's water supply comes from rain and snowfall and 30 percent comes from groundwater. This year, both rain and snow arrived in abundant quantities, much more than could be captured without adequate storage, like reservoirs and groundwater aquifers, and conveyance capacity. Surface storage helps capture runoff during high flows. Streams, canals, and

pipelines move these supplies to areas where they recharge groundwater basins for use later. nation's milk supply, 23 percent of its cheese and 99 percent of all grapes. The state also produces half of all domestically grown fruits, nuts, and vegetables.

Infrastructure Allows Water Time to Seep Underground

If water doesn't have a collection point upstream from a recharge basin, it could become more runoff that heads to the sea, and in extreme cases causes severe flooding and erosion. This year has been a perfect example of the need to store water on its way to the many recharge basins situated around the state. In 2023 we got so much rain, so fast, that at times, flows reaching 300,000 acre-feet per day were moving through the Delta, exceeding the capacity of existing floodplains and groundwater recharge areas. It is also far in excess of any existing water right demand



Groundwater recharge ponds, like this one near Fresno, help recharge underground aquifers with surplus water from storms in 2023.

or environmental and water quality requirements in place to protect the Delta. Preparing for wetter wet years and dryer dry years requires increasing surface storage capacity, building more recharge basins, reinforcing, and restoring flood plains and wetlands, and maintaining levees and canals.

Partnerships with Farmers Increase Recharge Opportunities

Flooding farm fields with surplus water provides an additional way to help water reach depleted aquifers. These partnerships allow recharge efforts to be spread across a wider area and provide additional storage availability during extreme weather events. It also benefits local ecosystems, particularly in the Pacific Flyway. Much of this takes place on fallowed fields, but in many cases, farmers are able to continue producing crops.

A Commitment to Groundwater Storage Requires a Commitment to Infrastructure

Our system of pipes, canals, levees, reservoirs and other storage and conveyance infrastructure is 50 years old and, in many cases, failing to efficiently fulfill its purpose. Without properly maintained, modern infrastructure, we cannot capture, store, or move the water we need for cities, farms, and the environment.

In addition to maintenance, we must continue building new water infrastructure in order to keep up with the vagaries of climate change. Some large projects need to move forward as quickly as possible such as expanding existing reservoirs and building the new Sites off-stream reservoir. However, smaller projects such as building retention ponds, restoring and re-connecting flood plains, and repairing levees and canals are equally critical and can be completed more quickly.

Reservoirs Also Play a Critical Role in Groundwater Recharge

California's changing weather patterns have brought more precipitation in some years in the form of rain than snow, and when that rain comes, it can often come as torrential downpours from atmospheric river events. This year's atmospheric rivers and bomb cyclones have certainly been illustrative of that. Reservoirs can hold large amounts of water and allow water managers to release it gradually to recharge ponds, flood plains, and other collection points above aquifers as needed as well as in anticipation of storms.

To Secure California's Water Future, We Must Use Every Tool in the Toolbox

Recharging underground aquifers is essential to California's future. However, given the changes we're seeing in weather patterns, we cannot rely on that strategy alone. We must use every tool available and work to integrate the management of both surface and groundwater. In recent years both the federal and state governments have shown increasing commitment to water infrastructure and it's essential to the state's future that commitment is sustained.

Governor Newsom temporarily relaxed a single water quality regulation for a two-week period, and later encouraged public water agencies and individuals to take maximum advantage of flood flows to supplement groundwater recharge efforts. Water districts and farmers were able to capture nearly 4 million acre-feet of flood flows for groundwater recharge due to the actions taken by the Newsom Administration. This kind of forward of thinking and flexibility assures water users that elected leaders are on their side and working for the collective good of all California citizens.



Source: Department of Water Resources

"Flood-MAR" is an integrated and voluntary resource management strategy that uses flood water resulting from, or in anticipation of, rainfall or snow melt for managed aquifer recharge (MAR) on agricultural lands and working landscapes.

Valley Ag Water Coalition | Bob Reeb bobr@water-warrior.com

The mission of the Valley Ag Water Coalition is to represent the collective interests of its San Joaquin Valley member agricultural water companies and agencies in California legislative and regulatory matters by providing leadership and advocacy on issues relating to the development and delivery of a reliable farm water supply.

California Farm Water Coalition | Mike Wade mwade@farmwater.org

CFWC is a non-profit, educational organization that provides fact-based information on farm water issues to the public.