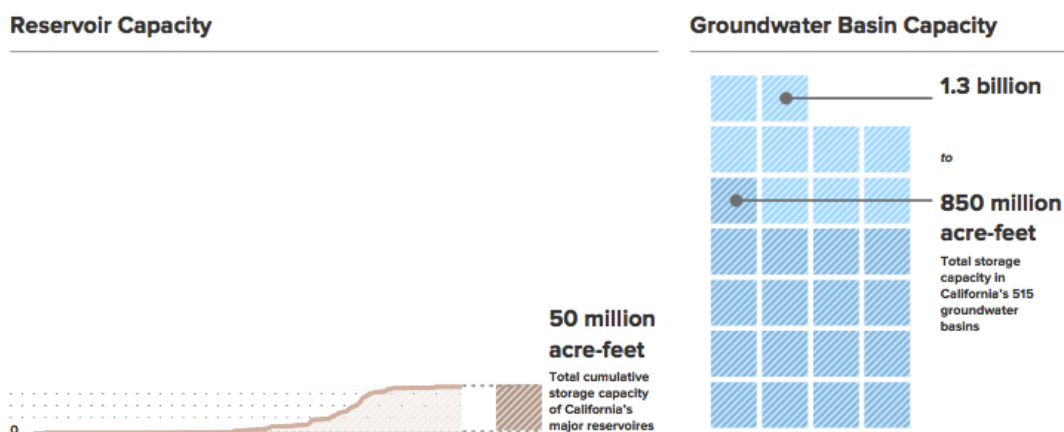


Recharge: Groundwater's Second Act

Groundwater Aquifers - Our Unseen Reservoirs

Groundwater recharge and storage represent both a practical solution to the state's additional water storage needs and a tool to help manage groundwater more sustainably. Groundwater elevations are continuing to decline across the state, not just from the current drought, but also from decades of chronic overuse. Supplementing the water supply through recharge into aquifers would increase the availability of groundwater for the inevitable future droughts. It is also more cost effective than other options being considered, such as reservoir expansion and desalination.



Potential groundwater storage capacity in California far exceeds surface reservoir storage capacity.

New Research on Groundwater Recharge

In order to gain a better understanding of recharge in California and its role in groundwater management, Water in the West researchers obtained 136 available grant applications submitted to California's Department of Water Resources (DWR) for the four recharge-related grant programs funded by Propositions 84, 1E, 50 and 13 over the past 14 years. They analyzed the information in these proposals and made some key initial findings.

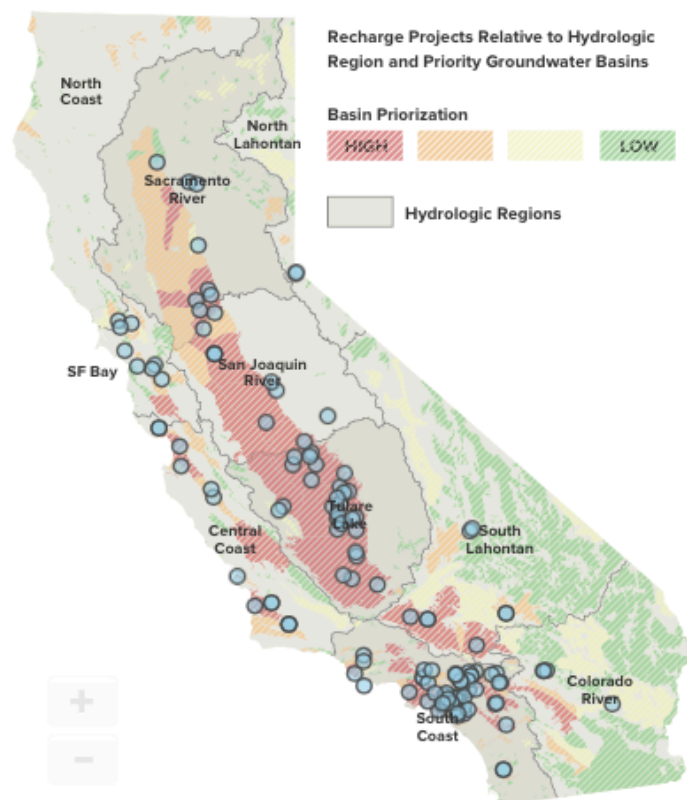
Key Findings

- **\$1.15 billion:** Total awarded for groundwater recharge and storage projects by DWR. State assistance has been critical in supporting local entities for water management, including recharge.
- **\$390 per acre-foot:** The median cost of groundwater recharge for awarded projects studied. The range of recharge costs was \$90 to \$1,100 per acre-foot, based on the 25/75th percentile of all accepted grants studied.

- **More than 300,000 acre-feet annually:** total recharge per year from all available grants studied. The recharge potential of both awarded and declined projects studied is 785,000 acre-feet per year.
- **More than 50% of studied recharge projects were awarded:** 78 projects out of 136 proposals were awarded, highlighting the demand for and feasibility of recharge projects across the state, as well as the unmet need.
- **Recharge-related projects studied are diverse:** Studied projects ranged from feasibility and planning studies to buying land for recharge ponds, purchasing water for recharge, establishing a groundwater bank, and performing maintenance work that provides ancillary benefits to recharge.
- **Funding was concentrated in areas with the highest needs:** Awarded projects were concentrated in the Central Valley and in Southern California - areas with groundwater basins that have been identified by DWR as higher priority and with greater need.

Note: Funds are reported as 2014 values

Groundwater Recharge Projects in California



Needs and Opportunities

New research by Water in the West shows that groundwater recharge is a cheaper alternative than reservoir expansion or desalination for augmenting our water supply. Researchers estimate groundwater recharge costs at \$90 to \$1,100 per acre-foot. This is substantially lower than estimates for reservoir expansion (\$1,700 to \$2,700 per acre-foot)

or desalination (\$1,900 to more than \$3,000 per acre-foot) – two options currently being considered to supplement California’s water supply system.

Groundwater recharge and storage present significant opportunities to improve the security and reliability of California’s water supply. However, several factors will have to be addressed or bolstered in order to take advantage of the opportunities that it presents: adequate groundwater management, funding, data collection and sharing, regulatory certainty and research.