

The supply doesn't exist for California water storage expansion

November 21 2014, by Kat Kerlin

California's approval of a \$7.5 billion water bond has bolstered prospects for expanding reservoirs and groundwater storage, but the drought-prone state can effectively use no more than a 15 percent increase in surface water storage capacity because of lack of water to fill it, according to a new analysis released Nov. 20.

The report by water engineers and scientists with the University of California, Davis, The Nature Conservancy and three prominent water consultants, said California could potentially use up to 6 million acre-feet in combined additional surface and groundwater storage—about a third more capacity than Shasta Reservoir. Exceeding this expansion runs into limits of available precipitation and the ability to transport water.

"Reservoir storage does not equate to water supply," said Jay Lund, lead author of the report and director of the UC Davis Center for Watershed Sciences. "Reservoirs cannot supply water without a water supply to fill them first."

The report, "Integrating Storage in California's Changing Water System," evaluates the possibilities of increasing water storage capacity in the semi-arid state. The study does not encompass economic or environmental analysis to determine whether additional storage is justified. Rather, they determined the maximum that could be used, both with and without coordination with other parts of California's water system.

The study comes as the California Water Commission begins developing rules for allocating investments in storage projects from funds recently approved by California voters as Proposition 1. More than a third of the \$7.5 billion is allocated for additional surface and groundwater storage. The bond does not specify individual projects, and the study does not consider any specific project proposals.

Overall, the report advocates a more integrated approach to surface and groundwater water storage where new storage projects are planned, designed and operated as components of a statewide water system.

Such an integrated, multibenefit analysis would include a wide variety of water sources and delivery alternatives, and potential changes in how water is managed to meet California's multiple water demands—flood management, energy production, water quality, recreation, and flows for fisheries and wildlife.

Such an approach would be a departure from most project analyses and policy discussions that examine water storage proposals as isolated projects, said co-author Maurice Hall, California water science and engineering lead for The Nature Conservancy.

"Our current water supplies are over-allocated, and we need to invest in a much smarter strategy to upgrade our water system and meet multiple water needs with an eye to the future and changing climate conditions," said Hall. "We need to design the system for nature's needs up front if we want to have healthy streams and rivers in the future."

The authors said that with a science-based approach to investing in water storage projects, there is great potential to develop more sustainable storage and water management strategies. The report said integrated water projects are likely to "significantly outperform" individual

projects in achieving multiple water management objectives.

The authors note that this study looks exclusively at storage considerations for surface and groundwater [storage](#), and does not look at comprehensive water conservation strategies, system reoperation, water rights apportionment or other water policy considerations that may stretch existing water supplies.

The report's other authors are Armin Munèvar of CH2M HILL; Ali Taghavi of RMC Water and Environment; and Anthony Saracino, a [water](#) resources consultant. Jeffrey Mount, a UC Davis professor emeritus of geology, and Leo Winternitz, formerly of The Nature Conservancy, contributed to the study.

More information: Read the report: [watershed.ucdavis.edu/files/bi ...
_Paper_20Nov2014.pdf](https://watershed.ucdavis.edu/files/bi..._Paper_20Nov2014.pdf)

Provided by UC Davis

Citation: The supply doesn't exist for California water storage expansion (2014, November 21)
retrieved 24 April 2024 from
<https://phys.org/news/2014-11-doesnt-california-storage-expansion.html>

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