

California's State Water Project supplies could fall up to 23% within 20 years due to climate change

August 1 2024, by Ian James, Los Angeles Times



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Climate change threatens to dramatically shrink the amount of water California can deliver over the next 20 years and could reduce supplies

available from the State Water Project by up to 23%, according to new projections released July 31 by Gov. Gavin Newsom's administration.

The analysis by the California Department of Water Resources examined a range of [climate change](#) scenarios and projected that by 2043, the massive network of reservoirs and canals that supply more than half the state's population could decline between 13% and 23%.

Such a loss in the State Water Project's water-delivery capacity, if not addressed, could lead to major shortages for much of the state, including Southern California.

"The SWP was designed for the climate of the 20th century," said John Yarbrough, the [project](#)'s deputy director. "It's going to need continued investment to get it in a place where it's really able to function with the hydrology of the future."

State officials analyzed how rising temperatures are likely to affect the existing water infrastructure without any adaptation measures. They said the expected losses in the system's capacity show a need to invest in projects intended to boost supplies, such as the state's plan to build the new Sites Reservoir and a [water tunnel](#) beneath the Sacramento-San Joaquin River Delta.

In addition to serving 27 million people, the State Water Project supplies roughly 750,000 acres of farmland.

According to the report, current infrastructure will be able to deliver less water in the coming years as rising temperatures bring more intense droughts, decreased snowpack, more extreme storms, and more precipitation falling as rain rather than snow.

Changes in the timing of runoff are also expected to create challenges.

And [sea level rise](#) is likely to complicate water managers' efforts to manage salinity levels and meet water quality standards in the delta.

The estimates were included in a report that the state publishes every two years. The last update in 2021 projected a 9% decrease in the State Water Project's future water supplies because of climate change. The latest projections include a more detailed analysis of different climate scenarios.

Newsom and other state officials have for years called for upgrading the state's water infrastructure to adapt to warming driven by the burning of fossil fuels and rising levels of greenhouse gases.

In 2022, Newsom presented a plan calling for California to prepare for an estimated 10% decrease in the state's water supply by 2040.

The State Water Project transports water across more than 700 miles through a series of reservoirs, aqueducts, pipelines and pumping plants from Northern California to Southern California.

The current infrastructure, which was built in the 1960s, includes massive pumps that draw water from the delta and send it flowing into the California Aqueduct. Water exports from the delta have decreased since 2008, partly because of changing regulatory requirements and protections for threatened fish species.

State officials said there is considerable uncertainty in future regulatory requirements and climate conditions, but that the analysis show a large reduction of the water supply is likely. The more severe scenario would bring average losses of 496,000 acre-feet of water a year, enough to supply more than 1.7 million homes.

Karla Nemeth, director of the Department of Water Resources, said the

analysis "underscores the need to modernize and upgrade our aging infrastructure so we can capture water supplies when it's wet."

In a letter presenting the report, Nemeth said the latest review "unmistakably demonstrates substantial reductions" in the project's delivery capacity if no action is taken.

"Immediate action is imperative to address the impact of a warming climate," she wrote.

State officials have been seeking to advance plans for the 45-mile water tunnel, which would create a second route to draw water from the Sacramento River into the aqueducts of the State Water Project.

In May, the Newsom administration announced that the cost of building the proposed tunnel is \$20.1 billion, and that a state analysis concluded the projected benefits of the project would far outweigh the costs.

Opponents of the proposed Delta Conveyance Project have argued the state's analysis is flawed and underestimates the costs while overestimating the benefits.

Environmental groups, Indigenous tribes, fishing organizations and local agencies have filed lawsuits seeking to block the project.

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Citation: California's State Water Project supplies could fall up to 23% within 20 years due to climate change (2024, August 1) retrieved 6 August 2024 from <https://phys.org/news/2024-08-california-state-fall-years-due.html>

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