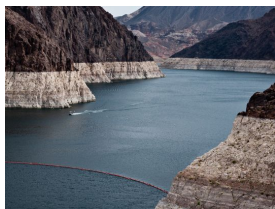


Satellites show major Southwest groundwater loss

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(Photo: U.S. Bureau of Reclamation)

SAN FRANCISCO (AP) — Groundwater losses from the Colorado River basin appear massive enough to challenge long-term water supplies for the seven states and parts of Mexico that it serves, according to a new study released Thursday that used NASA satellites.

Researchers from NASA and the University of California, Irvine say their study is the first to quantify how much groundwater people in the West are using during the region's current drought.

Stephanie Castle, the study's lead author and a water resource specialist at the University of California, Irvine, called the extent of the groundwater depletion "shocking."

"We didn't realize the magnitude of how much water we actually depleted" in the West, Castle said.

Since 2004, researchers said, the Colorado River basin — the largest in the Southwest — has lost 53 million acre feet, or 17 trillion gallons, of water. That's enough to supply more than 50 million households for a year, or nearly fill Lake Mead — the nation's largest water reservoir — twice.

Three-fourths of those losses were groundwater, the study found.

Unlike reservoirs and other above-ground water, groundwater sources can become so depleted that they may never refill, Castle said. For California and other western states, the groundwater depletion is drawing down the reserves that protect consumers, farmers and ecosystems in times of drought.

"What happens if it isn't there?" Castle said during a phone interview. "That's the scary part of this analysis."

The NASA and University of California research used monthly gravity data to measure changes in water mass in the basin from December 2004 to November of last year, and used that data to track groundwater depletion.

"Combined with declining snowpack and population growth, this will likely threaten the long-term ability of the basin to meet its water-allocation commitments to the seven basin states and to Mexico, Jay Famiglietti, senior author on the study and senior water-cycle specialist at NASA's Jet Propulsion Laboratory, said in a statement.

The Colorado River basin supplies water to about 40 million people and 4 million acres of farmland in seven states — California, Arizona, Colorado, New Mexico, Nevada, Utah and Wyoming — as well as to people and farms in part of Mexico.

California, one of the nation's largest agricultural producers, is three years into drought. While the state has curtailed use of surface water, the state lacks a statewide system for regulating — or even measuring — groundwater.

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