

Pumping depletes Central Valley water, data show

Kelly Zito, San Francisco Chronicle, 12-15-09

Drought, curtailed water exports from the delta and overzealous well pumping during the past six years have depleted Central Valley aquifers by enough to fill Lake Mead, the largest reservoir in the nation, according to new satellite data from NASA.

The findings echo a similar report by the U.S. Geological Survey this year and underscore the precarious nature of California's water supply and the long-term risks to the agriculture industry, which produces 8 percent of the country's food.

"Groundwater is being pumped at rates that are not sustainable, leading to declining water tables, water shortages, decreasing crop sizes and continued land subsidence," said Jay Famiglietti, hydrologist at UC Irvine.

If dry weather and groundwater pumping trends were to continue, experts worry that California growers will see steep declines in production, the state's economy will suffer, and crucial infrastructure will be imperiled by sinking land levels.

Famiglietti and his team at the Center for Hydrologic Modeling found that drainage basins in the Sacramento and San Joaquin valleys have lost more than 30 cubic kilometers of water since 2003, with most of the losses occurring in the south. One cubic kilometer equals 264.2 billion gallons.

Results at S.F. meeting

Famiglietti presented the research, based on data from satellites that track fluctuations in the movement of water around the globe, at the American Geophysical Union meeting in San Francisco on Monday. In addition to monitoring decreasing water supplies in the Central Valley, NASA satellites are being used to study droughts in India, Australia, the Middle East and Africa.

For California, Monday's report lends clarity to an area of the state's water supply that is little understood and virtually unregulated - the Golden State is one of the few states that don't require individual well owners to account for how much water they use.

Groundwater "overdrafting" in the Central Valley has reached such a critical point that federal geologists began studying land subsidence this fall below the California Aqueduct, the pipeline that delivers water to about 25 million state residents.

Though Monday's report focused on the past six years, other research shows that groundwater depletion is a historic problem in California. The U.S. Geological Survey's study this summer found that in the San Joaquin Valley alone, aquifer levels have dropped almost 400 feet since the early 1960s.

Scientists say Central Valley farmers are responsible for 20 percent of all groundwater pumping in the United States, a situation exacerbated by a multiyear drought and environmental restrictions on the amount of water that can be funneled out of the Sacramento-San Joaquin River Delta. The restrictions arose from efforts to protect the endangered delta smelt, a thumb-size fish whose population collapse over the past several years signaled a delta ecosystem in decline.

Cause and effect blamed

Mike Wade, executive director of the California Farm Water Coalition, said the state's farmers are simply trying

to make it to the next growing season.

"It's an undeniable cause and effect - farmers are having to pump more groundwater to survive the surface water cuts designed to save fish," he said.

Some environmental groups contend, however, that the agriculture industry has been slow to embrace more efficient irrigation techniques and has fought efforts to re-examine water rights laws that favor longtime water claims over current, pressing needs for water to restore ecosystems and to prevent further erosion.

This fall, in an effort to gain a better understanding of who uses the state's water and how much, California passed legislation that increases groundwater oversight.

But critics at the Sierra Club, the Planning and Conservation League, and others contend the rules aren't binding and that responsibility for monitoring groundwater will fall mostly to local jurisdictions that lack funding for adequate programs.