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NASA Report Highlights Need to Retire Drainage Impaired Land

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by Dan Bacher

Alarming new space observations revealing increased rates of groundwater depletion in California highlight the urgent need to retire drainage impaired, selenium-filled farmland on the west side of the San Joaquin Valley.

The findings, based on data from the NASA/German Aerospace Center Gravity Recovery and Climate Experiment (Grace), demonstrate that the aquifers for California's Central Valley and the Sierra Nevada have lost nearly enough water combined to fill the Colorado River's Lake Mead, America's largest reservoir, since October 2003. The observations "reflect California's extended drought and increased rates of groundwater being pumped for human uses, such as irrigation," according to the Jet Propulsion Laboratory in Pasadena.

The data was released as Governor Arnold Schwarzenegger, Senator Dianne Feinstein, Senate President Pro Tem Darrell Steinberg, corporate agribusiness and southern California water interests are pushing for the fast-track construction of a peripheral canal and more dams. The data's release also occurs as Feinstein, most likely at the urging of Beverly Hills agribusiness tycoon Stuart Resnick, has recently introduced a "Water Transfer" bill, S 1759, that would allow the re-sale of subsidized water by wealthy Central Valley Project contractors for enormous profits.

Combined, the Sacramento and San Joaquin River drainage basins have shed more than 30 cubic kilometers of water since late 2003, said professor Jay Famiglietti of the University of California, Irvine. A cubic kilometer is about 264.2 billion gallons, enough to fill 400,000 Olympic-size pools. The bulk of the loss occurred in the Central Valley, California's huge agricultural region that receives its irrigation from a combination of groundwater pumped from wells and surface water diverted from elsewhere.

"Grace data reveal groundwater in these basins is being pumped for irrigation at rates that are not sustainable if current trends continue," Famiglietti said. "This is leading to declining water tables, water shortages, decreasing crop sizes and continued land subsidence. The findings have major implications for the U.S. economy, as California's Central Valley is home to one sixth of all U.S. irrigated land, and the state leads the nation in agricultural production and exports."

"Preliminary studies show most of the water loss is coming from the more southerly located San Joaquin basin, which gets less precipitation than the Sacramento River basin farther north," according to Alan Buis of the Jet Propulsion Laboratory. "Initial results suggest the Sacramento River basin is losing about 2 cubic kilometers of water a year. Surface water losses account for half of this, while groundwater losses in the northern Central Valley add another 0.6 cubic kilometers annually."

The San Joaquin Basin is losing 3.5 cubic kilometers a year. More than 75 percent of this is the result of groundwater pumping in the southern Central Valley, primarily to irrigate crops, including those on drainage impaired land filled with selenium and other toxic salts and heavy metals.

The depletion of groundwater supplies is not just a major problem in California, but in India and other countries across the globe. "The California results come just months after a team of hydrologists led by Matt Rodell of NASA's Goddard Space Flight Center, Greenbelt, Md., found groundwater levels in northwest India have declined by 17.7 cubic kilometers per year over the past decade, a loss due almost entirely to pumping and consumption of groundwater by humans," noted Buis.

The latest NASA findings on Central Valley groundwater depletion demonstrate the urgent need to stop the construction of the peripheral canal. The peripheral canal is designed to export more water from the Sacramento Valley and California Delta to southern California and drainage impaired land on the west side of the San Joaquin Valley - and will only exacerbate the groundwater crisis by continuing to irrigate land that should have never been irrigated. The water policy/water bond package passed by Legislature in November will clear the path to the construction of the canal and Temperance Flat and Sites reservoirs.

The NASA report clearly shows that current levels of groundwater pumping are not sustainable - and highlights the absolute necessity to make retirement of drainage impaired land on the San Joaquin's west side our number one priority if we want to preserve California fisheries and our precious, limited water supply.

The alarming new findings also demonstrate the urgency of stopping Dianne Feinstein's Water Transfer Facilitation Act of 2009 (S 1759), a dangerous piece of legislation that will enable corporate water contractors to make even more profits than they are now by marketing subsidized water. The bill will allow the federal government to approve water transfers and fast-track the environmental review process at the expense of collapsing fish populations.

"This bill, which is cosponsored by Senator Boxer, would facilitate additional water transfers of up to 250,000 to 300,000 acre-feet in California's Central Valley - which has been particularly hard hit by the prolonged drought," claimed Feinstein on November 6. "It does so by granting new authority to the Bureau of Reclamation to approve voluntary water transfers, and by simplifying and expediting environmental reviews for all Central Valley water transfers."

On December 14, Jim Metropoulos, Senior Advocate for Sierra Club California, Steve Evans, Conservation Director of Friends of the River, Byron Leydecker, Chair of Friends of the Trinity River, and Barbara Barrigan-Parrilla, Campaign Director for Restore the Delta, sent a letter

opposing S 1759 to Senator Jeff Bingaman, Chairman of the Committee on Energy and Natural Resources.

"The stated intention of Senator's Boxer and Feinstein S 1759 is purportedly to smooth the transfer sale of water among irrigation districts south of the Delta by directing Interior Department officials to complete under 'the most expedited basis practicable' all necessary environmental reviews and by lifting several safeguards that assure fish and wildlife protections that the 1992 Central Valley Project Improvement Act imposed on the water that a CVP contractor can transfer," the letter stated. "The unfortunate effect will be a free pass for the Bureau of Reclamation and CVP contractors to resell taxpayer funded water and by-pass present laws designed to protect the environment and repair some of the environmental damage caused by the project."

The groups urged that the legislation be remanded to the Water and Power Subcommittee to analyze the impacts of the bill on the environment, groundwater aquifers, refuges, fisheries and water quality and to consider amendments to safeguard taxpayer funds that have provided this water that will profit irrigators. "Absent this action we urge the full committee not to pass this legislation," the letter concluded.

In 2005, the U.S. Bureau of Reclamation under the Bush administration renewed contracts with major Central Valley Water Project (CVP) contractors that promised an additional 1.5 million acre feet of water a year (See "[Feds Promise Big Ag Water That Isn't There.](#)" [Environmental Working Group, March 2005.](#))

Under the new contracts, Westlands Water District obtained contracts for 53% more water, going from 755,635 acre feet a year to 1,155,393 million acre feet a year. The Madera Irrigation District also received contracts for 28% more water, from 155,394 acre feet a year to 198,280 acre feet – an increase of 28%.

"Most of this additional water has never been delivered or used – and cannot be without severely impacting the Sacramento-San Joaquin River System and the Delta," said Deirdre Des Jardins, Sierra Club activist. "The Central Valley Project Improvement Act (CVPIA) of 1992 restricted transfers of CVP contracts to water that had actually been consumptively used, and to no more than the average of the last 3 years of normal deliveries, prior to the act's passage. Feinstein's bill would end the restrictions for transfer of irrigation water between water contractors to 'real' water."

[Link here to read the December 14 press release](#) from the Jet Propulsion Laboratory.

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*Dan Bacher is an editor of [The Fish Sniffer](#), described as "The #1 Newspaper in the World Dedicated Entirely to Fishermen."*

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