

# AQUALLIANCE

DEFENDING NORTHERN CALIFORNIA WATERS



## The Danger of Water Transfers

### History

#### *Butte County*

In 1994, following seven years of low annual precipitation, the state continued a Drought Water Bank program, which allowed water districts to sell surface water and continue growing rice with ground water. Western Canal Water District and other irrigation districts in Butte and Yuba counties<sup>1</sup> exported 105,000 af of water extracted from the Tuscan aquifers to buyers outside of the area. This early experiment in the *conjunctive use* of the groundwater resources – conducted without the benefit of project specific environmental review – caused significant and immediate adverse impacts to orchards, residents,<sup>2</sup> and the environment. Until the time of the 1994 water transfers, groundwater levels had dropped, but the Tuscan aquifer had sustained the normal demands of domestic and agricultural users. The water districts' extractions, however, an abnormal demand on the ground water, lowered ground water levels throughout the Durham and Cherokee areas of eastern Butte County.<sup>3</sup> The water level fell and the water quality deteriorated in the municipal wells serving the town of Durham<sup>4</sup> and even shallow residential wells dried up tens of miles away from the pumping.<sup>5</sup> Irrigation wells failed on several orchards in the Durham area. One farm never recovered from the loss of its crop and later entered into bankruptcy.

There is an innate skepticism of water transfers by many people in California: "A history of somewhat unscrupulous schemes to transfer water to meet the needs of growing cities in California's past, such as the buyout of land (and its accompanying water rights) in the Owens Valley, has continued to discolor the view of many farmers and water users associations against market operations aimed at benefiting urban centers (Haddad, 2000)."<sup>6</sup> However, the badly executed 1994 transfers in Butte and Yuba counties hasn't stopped

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<sup>1</sup> Thomas, Gregory, 2001. *Designing Successful Groundwater Banking Programs in the Central Valley: Lessons From Experience*. "Participants in the 1994 State Drought Water Bank were Richvale Irrigation District, Western Canal Water District, Browns Valley Irrigation District, Cordua Irrigation District, and Ramirez Water District." p. 30.

<sup>2</sup> Msangi, Siwa et al. 2006. *Third Party Effects and Asymmetric Externalities in Groundwater Extraction: The Case of Cherokee Strip in Butte County, California*. p. 3.

<sup>3</sup> *Id.*

<sup>4</sup> Scalmanini, Joseph 1995. *Memorandum: SUBJECT: WATER-LEVEL DECLINE DUE TO WESTERN CANAL PUMPING*. p. 1.

<sup>5</sup> Thomas, Gregory, 2001. *Designing Successful Groundwater Banking Programs in the Central Valley: Lessons From Experience*. p. 31.

<sup>6</sup> Msangi, Siwa et al. 2006. *Third Party Effects and Asymmetric Externalities in Groundwater Extraction: The Case of Cherokee Strip in Butte County, California*. p. 12.

state and federal agencies from planning and facilitating transfers. After two lawsuits (2010 and 2014) to prod the Reclamation and DWR to conduct programmatic environmental review for the regular use of water transfers that followed the 2000 CalFed Record of Decision and the 2001 Sacramento River Water Management Agreement, the 10-Year, Long-Term Water Transfer Program's DEIS/EIR was released in September 2014. Up to 600,000 acre-feet of river water from the Sacramento Valley could have been sold each year for 10 years – the equivalent a city of 100,000 people would use in 200 years. Compounding the impacts from these sales is the fact that half of the water may come from “groundwater substitution” – where sellers are paid for river water and then draw an equivalent amount of water from the underground aquifer. Over 95% of the water was for agriculture with junior water claims south of the Delta. Litigation followed with a 2018 court decision finding that the FEIS/EIR failed to:

1. Provide performance standards for groundwater mitigation.
2. Mitigate for land subsidence.
3. Analyze cumulative biological impacts regarding reduced delta outflow.
4. Analyze impacts to the giant garter snake and propose mitigation.
5. Evaluate the effectiveness of groundwater mitigation.
6. Explain how potential impacts of climate change to the Project will be less than significant.

## **Existing Conditions**

### *Sacramento Valley*

Subsidence Overuse of the groundwater in certain areas is causing significant impacts. The *2017 GPS Survey of the Sacramento Valley Subsidence Network* states, “Of greatest concern for comparison were stations SECO and HAHN in the Arbuckle area that showed major changes of -2.14 and -1.69 ft., respectively.”<sup>7</sup> The U.S. Bureau of Reclamation acknowledged recently that, “Historically, land subsidence occurred in the eastern portion of Yolo County and the southern portion of Colusa County, owing to groundwater extraction and geology. Due to groundwater withdrawal over several decades, as much as four feet of land subsidence has occurred east of the town of Zamora” (citation omitted).<sup>8</sup>

Groundwater Elevation Significant declines in groundwater elevation during the 2013-2015 drought years have not recovered or have continued. DWR's maps are a significant source of this information.<sup>9</sup> It is clear “[t]hat the Sacramento Valley is already impacted by historical groundwater pumping with a decrease in the level of groundwater, the decrease in groundwater storage, and loss of flow in surface waters. These negative historical impacts to groundwater are consistent with the medium to high CASGEM ranks for the groundwater basins and the need to develop Sustainable Groundwater Management Plans.”<sup>10</sup> Compounding the existing problem are groundwater substitution transfers and the the slow pace toward implementation of the 2014 Sustainable Groundwater Management Act, which will not curtail the significant groundwater declines or subsidence currently taking place in the Sacramento Valley. DWR even acknowledges the

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<sup>7</sup> DWR, 2018. *2017 GPS Survey of the Sacramento Valley Subsidence Network*. p. 16.

<sup>8</sup> USBR and SLDMWA 2018. Long-Term Water Transfers RDEIR/SDEIS/SDEIS. p. 3.3-6.

<sup>9</sup> <https://data.cnra.ca.gov/dataset/northern-sacramento-valley-groundwater-elevation-change-maps>

<sup>10</sup> Custis, Kit 2016. Testimony for Part 1 of the BDCP/WaterFix Change in Point of Diversion State Water Resources SWRCB hearing. p. 11. Exhibit G.

problem: "Because most groundwater systems are slow responding systems, any damage to the system may require long periods to recover."<sup>11</sup>

### *San Joaquin Valley*

Subsidence Once the limits of hydrology caused DWR, Reclamation, and some of their contractors to look for tools to game the law – and the hydrology - of California, it became obvious that the state and federal governments have facilitated a destructively unrealistic demand for water. Ever willing to destroy natural systems to meet demand for profit, the San Joaquin River dried up and subsidence caused by groundwater depletion in the San Joaquin Valley is even cracking water conveyance facilities.<sup>12</sup>

### Unrealistic Demand

One significant example of water demand is found in a 2017 California Department of Food and Agriculture report on almond data, which shows a consistent increase in the number of bearing acres of almonds over the last 20 years: 442,000 acres were recorded in 1997, 545,000 acres in 2002, 640,000 acres in 2007, 820,000 acres in 2012, and an estimated 1,000,000 acres in 2017.<sup>13</sup> These data are echoed by the 2018 annual report of the California Almond Board which reports a steady increase in almond bearing acreage from 710,000 in 2008/09 to an estimated 1,070,000 acres in 2018/19.<sup>14</sup> It would take the entire capacity of Shasta Reservoir's 4.5 MAF to provide water for 1,000,000 acres of almonds annually. Plainly, this is not sustainable.

#### **From a speech by Contra Costa Congressman Jerome R. Waldie to the Commonwealth Club of California.**

"I have come to bury the State Water Project and to call on the State of California to make drastic changes in its outlook and its water export project so that the northern part of the State, and particularly the San Francisco Bay-Delta Estuarine System, will not become a biological desert.

"Without regard for the life systems of the Bay-Delta System the State will knowingly, and by design, sacrifice this unique and irreplaceable resource in order to meet its water export requirements.

"There is no place to go in California outside of the courts to get a fair hearing on the allocation of water resources. There is no administrative or quasi-judicial body, commission or agency in California that is not carefully contrived to arrive at predetermined judgments advancing the overall plan to export Delta water to the south... *February 21, 1969*

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<sup>11</sup> DWR 2009. *California Water Plan 2009, volume 2, Resource Management Strategies, Chapter 8, Conjunctive Management and Groundwater Storage p.8-28*

[http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v2c08\\_conjunctmgmt\\_cwp2009.pdf](http://www.waterplan.water.ca.gov/docs/cwpu2009/0310final/v2c08_conjunctmgmt_cwp2009.pdf)

<sup>12</sup> Sneed, et al., 2012. Abstract: Renewed Rapid Subsidence in the San Joaquin Valley, California.

"The location and magnitude of land subsidence during 2006–10 in parts of the SJV were determined by using an integration of Interferometric Synthetic Aperture Radar (InSAR), Global Positioning System (GPS), and borehole extensometer techniques. Results of the InSAR measurements indicate that a 3,200-km<sup>2</sup> area was affected by at least 20 mm of subsidence during 2008–10, with a localized maximum subsidence of at least 540 mm. Furthermore, InSAR results indicate subsidence rates doubled during 2008. Results of a comparison of GPS, extensometer, and groundwater-level data suggest that most of the compaction occurred in the deep aquifer system, that the critical head in some parts of the deep system was exceeded in 2008, and that the subsidence measured during 2008–10 was largely permanent." Conference presentation at *Water for Seven Generations: Will California Prepare For It?*, Chico, CA.

<sup>13</sup> California Department of Food and Agriculture, 2018. *2017 California Almond Nursery Sales Report*. p.2. Exhibit L.

<sup>14</sup> Almond Board of California, 2018. *Almond Almanac 2018*. p. 35, <http://newsroom.almonds.com/document/2018-annual-report>.