The big squeeze

North State water supplies under pressure as drought parches California

By Alastair Bland

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A thousand feet beneath the city of Chico, in the pitch-black waters of the Tuscan Aquifer, time has proceeded for ages without sound or sunlight, mostly unaffected by the world above. But in recent years, an increasing tug of upward force has been moving the Tuscan Aquifer’s water toward the surface of the Earth—dramatically, by the thrust of fruit trees and vegetable fields hundreds of miles away.

And in 2014, there simply is not enough water to go around. The dry spell in California’s history ended just six weeks ago, and a second dry winter is underway. Gov. Jerry Brown declared a drought emergency on Jan. 17, and state and federal water agencies have warned farmers and cities that there will be virtually no allocations this year unless a great deal of rain should soon fall.

Recent weekend storms did little to dent the huge water deficit. Shasta Lake and Lake Oroville are up to 37 percent and 38 percent of capacity, respectively, whereas both were at 36 percent the week before. Folsom Lake is at just 26 percent. In the San Joaquin Valley, San Luis Reservoir—a major agricultural supplier filled with Delta water—is just 30 percent full, and streams and rivers that usually become wintry torrents of mud-brown water have dwindled into quietly trickling brooks. Sierra Nevada snowpack—usually relied upon for late-summer water—is a fraction of its normal amount. As of last week, Black Butte Lake had entirely dried up.

To meet the needs of the parched state, water managers are increasingly relying upon the groundwater reserves of the Tuscan Aquifer, a threat that critics say is already proving unsustainable. The aquifer’s volume has apparently been diminishing through the years as farmers are forced to drill deeper and deeper to tap the reservoir, according to Christian Buck, water resources scientist with the State, Creek Department of Water and Resource Conservation. This not only threatens Chico’s municipal water supply but also could eventually cause measurable shrinkage of surface rivers and lakes.

“Officials know that we could be looking at longer droughts in the future, and they’re looking for another source of water as a life-extender,” said Jim Brobeck, water-policy analyst with Chico-based AquAlliance. “So they want to integrate our groundwater into the state water supply.”

Brobeck says the chief threat to the region’s underground water stores is an increasingly common practice called groundwater substitutions, or transfers, whereby landowners sell their own surface water to others in need—often making a healthy profit—and replace it with well water from the public supply.

This wasn’t a problem years ago, when there was less demand for the state’s water. During the previous worst-ever drought in California’s history in the late 1970s, only 22 million people lived in the state. Today, almost 40 million people populate California, and more farmland than ever before is under cultivation. Salmon and steelhead numbers are dropping as their spawning streams are increasingly diverted for human use. The governor now wants to build a pair of giant tunnels that could divert most of the already heavily used Sacramento River to the San Joaquin Valley—a project that critics argue will not solve the state’s water shortage.

Forecasters expect a dry winter. Should March, April and May come and go with little to no rain, the likelihood that any will fall before September is virtually zero. With growers in the Sacramento and the San Joaquin valleys already banking on reduced production, and salmon unable to spawn under current conditions, no one knows how California and its environment will cope should a second year pass with almost no rain.

While the Sacramento Valley’s farmers will feel the strain caused by the drought; the severe absence of rainfall will decimate few agricultural areas as severely as it will the Westlands Water District, on the west side of the San Joaquin Valley. The region receives just six or seven inches of rainfall in an average year and relies almost entirely on water from the Sacramento Valley, transported south from the Delta via two canals. This year, hundreds of thousands of acres of Westlands’ farmland will almost certainly receive no water at all.

“We’re bracing our farmers for possibly no allocation this year,” said Jason Peltier, Westlands’ deputy general manager. “If that happens, farmers will let their fields go dry and use what water they get to keep their orchards alive.”

Peltier said his region’s roughly 200,000 acres left to bake in the sun—especially almond orchards. Critics say this is a bad strategy in arid regions.

“These trees need water every year,” said Mike Hudson, a water activist and commercial salmon fisherman in Oakland. “You can’t follow them during drought. This is creating a constant demand for water in a state without a constant supply of water. It takes away all flexibility in management.”

In years when vegetable farmers may have once simply fallowed their fields due to shortages in the state and federal supplies, nut and tree-fruit farmers now pay large amounts of
Earlier this week, Northern longtime water activist in Sonora. “It’s not wasted. It’s essential to keep alive a valuable fishery. Salmon water must be allowed to flow undisturbed to the sea. The Westlands Water District. Del Bosque said he might have enough water stored in San Luis Reservoir to last him through the year—but 2015, he says, could destroy him.

But opponents of the Bay Delta Conservation Plan, including salmon fishermen and environmental groups, say the project likely would destroy struggling fish populations by simply flow of the Sacramento River, confusing migrating fish and disrupting their natural life cycles.

Peltier, of Westlands, like many in the agriculture industry, supports the plan. He thinks the proposed 35-mile-long twin tunnels would increase reliability for farmers by allowing

Zeke Grader, executive director of the Pacific Coast Federation of Fishermen’s Associations, explained that the Bureau of Reclamation regularly “games the system” by releasing water from Folsom or Shasta lakes and officially logging the releases as part of the required 800,000 acre feet intended to support wildlife and migrating fish. This meets the

The emergency is not the fact that we’re having a drought,” he said. “The emergency is the fact that people are planting thousands of acres of permanent crops in areas with an unreliable water supply.”

West Coast salmon numbers have declined across the whole state, but only in California are their troubles so directly related to water shortages. In the Central Valley, federal laws protect salmon by guaranteeing that enough water will always be left in the Delta to support their populations. However, these laws are failing, and even in record-dry years, salmon seem to come up short when farming districts want the same. The Central Valley chowhounds have declined through the years, while agriculture acreage has steadily grown.

A similar loss of more than 10 percent of chinook salmon redds occurred in the American River after officials reduced the outflow from Folsom Lake in January. Even in times of drought, endangered fish species are supposed to be protected by the Endangered Species Act. Additionally, a 1992 law called the Central Valley Project Improvement Act requires that a minimum of 800,000 acre feet of water be reserved every year for the benefit of fish and wildlife. The intent of that law was to protect chinook salmon and, in fact, double their population. But the law has so far failed.

The drought has raised the debate surrounding the Bay Delta Conservation Plan, the state’s proposed water conveyance system that would divert much of the Sacramento River via two giant tunnels into the San Joaquin Valley.

Many farmers in the San Joaquin Valley have lamented what appears to them be a waste—river water flowing past the Delta and out to sea.

“In years when there is a surplus, the Bureau of Reclamation should allow us to capture that water,” said Joe Del Bosque, who farms mostly almonds and melons on 2,000 acres in the Westlands Water System. Del Bosque said he might have enough water stored in San Luis Reservoir to last him through the year—but 2015, he says, could destroy him.

But environmentalists say that, to support the Sacramento River’s fisheries, a substantial portion of its water must be allowed to flow undisturbed to the sea.

“It really gets me when people say that the water flowing into the Bay is wasted,” said Jerry Cadigan, a longtime water activist in Sonora. “It’s not wasted. It’s essential to keep alive a valuable fishery. Salmon is a food source; healthy; just like pomegranates and almonds.”

Earlier this week, Northern Californians were reminded what it feels like when water falls from the
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Facts 1. 75% - 80% of California water is used in Agriculture. 2. The vast majority of California Produce is exported. 3. California exports far more produce than it imports. 4. California water is exported worldwide in food. Conclusions 1. California’s water problems are caused by 7 Billion People in a One-World Economy with infinite Money and finite resources. 2. Any water savings by individuals and business will be sucked up by Agriculture immediately. 3. California water Problem will never end now....

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