

California Drought Update

by Patrick Ruckert

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A Note To Readers

The new year begins tomorrow. In January the Congress reconvenes; the California Legislature begins its new season on January 4; it is a Presidential election year; initiatives will be on the ballot-- including one(s) that are aimed at water issues. In 2015, the U.S. Congress was unable to even introduce legislation that addressed the drought in the Western States. Will all this activity actually address the crisis the nation faces, not to speak of the nearly impassable paralysis on the issue of California water? Only if the people of the nation will get smart, call up some courage, and use that to get rid of Obama and pass the restoration of the Glass-Steagall banking law.

<https://larouhepac.com/glass-steagall>

Otherwise, expect hell on Earth. If you have not heard, on January 1, new laws and rules go into affect in Europe, which is already the law in the U.S. under the Dodd-Frank banking law, that will “bail-in” depositors funds to save the banks in a new crisis. Here is an overview:

larouhepac.com/20151229/euro-banks-are-blowing-out-dodd-frank-bail-means-americans-will-be-killed-salvage-them

Below is an article on beef prices, demonstrating the “bail-in” affect on farmers and eaters.

Meanwhile, as we are now a few months into the fifth year of the worst drought in California history; El Nino continues to raise hopes; the argument about building additional water storage infrastructure heats up; and already the new Carlsbad desalination plant, which just began producing 50 million gallons of water per day on December 14, is forgotten history for most.

We shall start this week's report with the issue of building more storage infrastructure, which revolves around the more narrow issue of new dams.

Shasta, Sites and Temperance Flat

For those unfamiliar with the argument which has been going on for years, proponents for building new water storage infrastructure have focused on building new dams or the raising of existing dams. The three proposals that get all the attention are:

First, the raising of Shasta dam by 18.5 feet, which would increase Shasta Lake's 4.6 million-acre-foot capacity by 13%, or about 450-500,000 acre-feet.

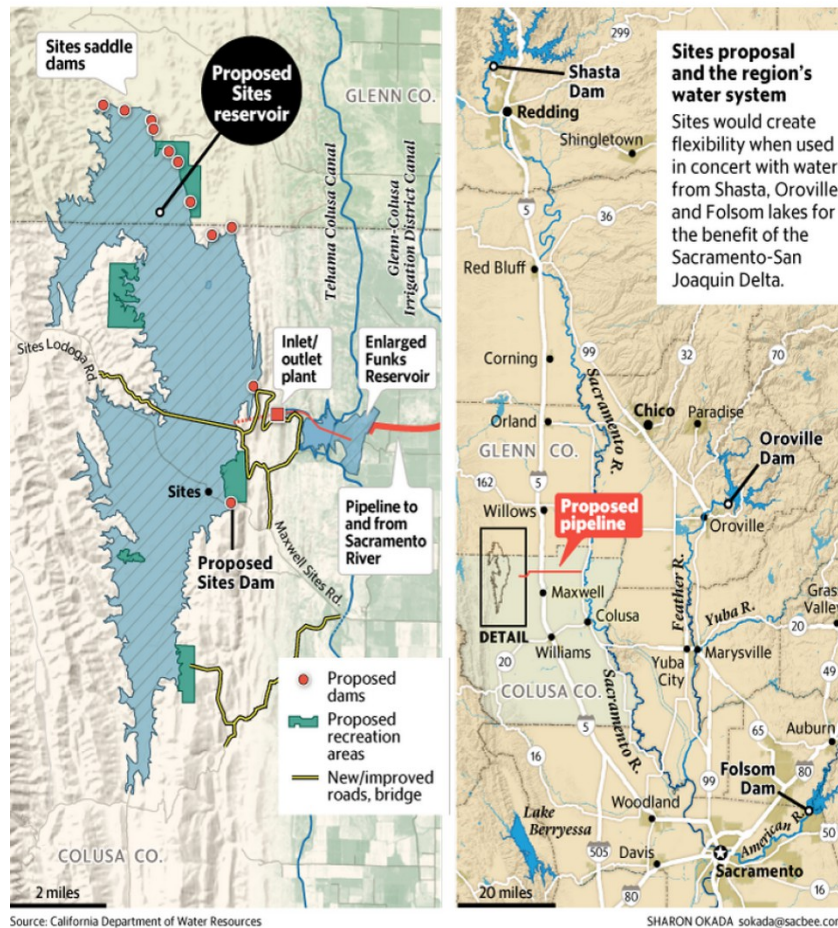
Second, the Sites Reservoir, which would be an off-stream storage reservoir that would be fed by a canal from the Sacramento River in wet years. (Off-stream refers to a reservoir that is not built on a

river or stream, but receives its water from one or more rivers or streams). The Sites Reservoir would store up to 1.8 million acre feet of water, making it one of the largest in the state, only surpassed by Trinity, Shasta and Oroville. For comparison, the other major off-stream reservoir, San Luis, holds 204,000 acre-feet.

The *Sacramento Bee* on December 26 ran an editorial advocating the building of the Sites Reservoir. All the arguments for building Sites are well stated. The graphic below is from that commentary. <http://www.sacbee.com/opinion/editorials/article51406055.html>

Sites reservoir proposal

The proposed Sites reservoir located west of the town of Maxwell in the Coast Range mountains would flood the Antelope Valley in Colusa and Glenn counties. The reservoir would be filled by using two existing canals and a pipeline that would be built to divert Sacramento River water during high flows from large winter storms.



(From the *Sacramento Bee*, December 26, 2015)

Third, is the proposed Temperance Flat Dam on the San Joaquin River, just upstream of the existing Friant Dam and Millerton Lake near Fresno. Several proposals have been made that would add an additional storage capacity of between 460,000 to 2.775 million acre-feet.

All of the proposals have been advocated by the farmers of the Central Valley and opposed by environmentalists, the Brown administration and some of the more prominent academic water and climate people. The opposition arguments, in addition to the usual environmentalist ones are two: Economic and utility.

The three projects combined are estimated to cost over \$10 billion and take years to complete. The Sites Reservoir alone has an estimated price tag of between \$3 and \$6.3 billion. The \$7.5 billion water bond passed by voters last year allocates only \$2.7 billion for all water storage, which includes many more projects than these three. And, given the non-functioning state of the U.S. Congress, nothing can be expected from that quarter to make up the difference. In addition, those who will benefit from the project would also be expected to provide some of the financing.

The “utility” argument is best stated by Jay Lund, the director of the UC Davis Center for Watershed Sciences, as quoted in an article, “Is the era of dam-building over? Backers of several major projects say it shouldn't be,” by Bettina Boxall in the *Los Angeles Times* on December 27. Both pro and anti arguments are presented in this article.

<http://www.latimes.com/science/la-me-water-dams-20151227-story.html>

Jay Lund, the director of the UC Davis Center for Watershed Sciences, compares building more water storage to buying a bigger refrigerator. Unless you have more to put in it, it doesn't do much good.

If Sites and the other proposed reservoirs were in operation now, Lund says they too would be depleted in the fourth year of drought. California, he noted, already has 1,400 reservoirs capable of holding more than half the state's average annual runoff.

"Some new storage might be worthwhile in some places," he said. "But is it worth the investment from the people of California and ratepayers and everybody else relative to the other investments they could make? It's a hard argument to make."

The more specific arguments made against the projects are not worth detailing here, but they can be found in the *Los Angeles Times* article link above, and an article from the *Wall Street Journal*, “California Faces Lost Decades in Solving Drought, by Jim Carlton and Alejandro Lazo, on December 24: http://www.wsj.com/articles/california-faces-lost-decades-in-solving-drought-1451002429?mod=djemITP_h

My Commentary: While I always make the argument that mankind must not be controlled by the whims of nature, and mankind must create our future, in addition, we must not be controlled by a system that rules out the creation of new sources of water. Especially, given that over the next few decades the state will surpass 50 million people, and real climate change can return us to the “normal” climate of mega-droughts and mega-floods, we must build our future with science. The short-term building program must be dozens of desalination plants. As for the proposed dams and reservoirs, they can be useful, but they will not solve the problem, not even in the short-term, since they will take a decade to build.

On the climate question, my review of the book, *The West Without Water*, addresses that: http://larouchepub.com/eiw/public/2014/eirv41n19-20140509/48-52_4119.pdf.

For all else, the issue of this newsletter dated December 24, 2015 should be referenced: <http://amatterofmind.org/ca-drought-pdf/20151224%20California%20Drought%20Update.pdf>

The Snowpack, Drought, El Nino and More

For some, mostly in the media, December 30, not New Year's Eve, was the most anticipated day of the week. The Department of Water Resources yesterday made its first snowpack measurement of the water year (which began on October 1). So, what did they find? Is the drought over or not? Here are some excerpts from the Department of Water Resources statement of December 30, titled, "This just in ... Snowpack's Water Content Far Greater than One Year Ago, But It's Still Too Soon To Know Whether Drought Will Be Broken," as reported by:

<http://mavensnotebook.com/2015/12/30/this-just-in-snowpacks-water-content-far-greater-than-one-year-ago-but-its-still-too-soon-to-know-whether-drought-will-be-broken/>

Of note in the following are the numbers reported for the reservoir levels. They are really, really low. The snowpack average has a water content of 11 inches, which is 108 percent of the average for this date. The state's water managers are hoping that by April 1, the snowpack will be at 150 percent of normal. As climatologists have repeatedly warned, the state must get three successive years of approximately 175 percent of average precipitation to bust the drought.

From the Department of Water Resources:

The Department of Water Resources (DWR) conducted the winter's first media-oriented manual snow survey today, and despite the higher-than-average water content for the statewide snowpack, officials said snowfall during the remainder of the winter will largely determine whether California's drought will be entrenched for a fifth year.

The state's largest six reservoirs currently hold between 22 percent (New Melones) and 53 percent (Don Pedro) of their historical averages in late December. Storage in Lake Shasta, California's largest surface reservoir, is 51 percent of its December 30 average.

Today's manual survey found a snow depth of 54.7 inches – 16 inches more than the average depth measured there since 1965 – and 16.3 inches of water content, 136 percent of the January 1 average for that site.

More telling than a survey at a single location, however, are DWR's electronic readings today from 99 stations scattered throughout the Sierra Nevada. Measurements indicate the water content of the northern Sierra snowpack is 11 inches, 108 percent of the multi-decade average for the date.

In normal years, the snowpack supplies about 30 percent of California's water needs as it melts in the spring and early summer.

Despite snowpack readings that are higher than last year, the major water reservoirs are storing far less water this year than their late-December historical averages. Lake Oroville in Butte County, the State Water Project's (SWP) principal reservoir, now holds 1 million acre feet (MAF), 29 percent of its 3.5 million acre-foot capacity and 47 percent of its historical average on December 30. One year ago today, Oroville's numbers were 1.3 MAF, which was 62 percent of its December 30 average.

Lake Shasta north of Redding and the federal Central Valley Project's (CVP) largest reservoir now holds 1.4 MAF, 31 percent of its 4.55 million acre-foot capacity and 51 percent of its historical average. One year ago today, Shasta held 1.9 MAF, which was 41

percent of its total capacity and 66 percent of the December 30 average.

San Luis Reservoir, a critical south-of-Delta pool for both the SWP and CVP, reflects the same trend of lower reservoir storage this year. San Luis currently holds 20 percent of its 2 million AF capacity, 30 percent of normal for the date.

On El Nino: *NASA's Jet Propulsion Laboratory* issued a release on December 29, "A Still-Growing El Niño Set to Bear Down on U.S.," which is a thorough discussion of El Niño, what it is, and what to expect this winter: <http://www.jpl.nasa.gov/news/news.php?feature=4808>

Here are a few excerpts:

The current strong El Niño brewing in the Pacific Ocean shows no signs of waning, as seen in the latest satellite image from the U.S./European Ocean Surface Topography Mission (OSTM)/Jason-2 mission.

El Niño 2015 has already created weather chaos around the world. Over the next few months, forecasters expect the United States to feel its impacts as well.

The latest Jason-2 image bears a striking resemblance to one from December 1997, by Jason-2's predecessor, the NASA/Centre National d'Etudes Spatiales (CNES) Topex/Poseidon mission, during the last large El Niño event. Both reflect the classic pattern of a fully developed El Niño.

The images show nearly identical, unusually high sea surface heights along the equator in the central and eastern Pacific: the signature of a big and powerful El Niño. Higher-than-normal sea surface heights are an indication that a thick layer of warm water is present.

This year's El Niño has caused the warm water layer that is normally piled up around Australia and Indonesia to thin dramatically, while in the eastern tropical Pacific, the normally cool surface waters are blanketed with a thick layer of warm water. This massive redistribution of heat causes ocean temperatures to rise from the central Pacific to the Americas.

In the United States, many of El Niño's biggest impacts are expected in early 2016. Forecasters at the National Oceanic and Atmospheric Administration favor an El Niño-induced shift in weather patterns to begin in the near future, ushering in several months of relatively cool and wet conditions across the southern United States, and relatively warm and dry conditions over the northern United States.

And here is a limp forecast from *AccuWeather.com* on December 30: "El Niño to send several rounds of rain to California during early January:"

Storms packing rain, fueled in part by El Niño, will take aim at California during the first week of January.

While the storms are unlikely to deliver drought-busting rainfall, they will deliver some beneficial rain to not only coastal Southern California but also farther inland over desert areas to Arizona and New Mexico.

Finally, a look at the U.S. Drought Monitor, which once again shows that the lessening of the drought's intensity will be a long, slow process. In fact, it is shocking that 45 percent of the state still remains in the "Exceptional Drought" category, and 87 percent remains in "Severe Drought."

Land Subsidence In the Valley

Two articles this week on sand subsidence, both well-written and non-hysterical, provide background and an update on a problem that is beginning to cost billions. The first is from the *UC Davis Center for Watershed Sciences*, published on December 27. This group of people likes to play with their headlines, but their report is first-rate. “The Earth is Falling!-- Land Subsidence and Water Management in California.” can be linked here:

<http://californiawaterblog.com/2015/12/27/the-earth-is-falling-land-subsidence-and-water-management-in-california/>



Here is the first paragraph of this report:

Some of this subsidence has been dramatic. Almost 4 feet of subsidence occurred in some San Joaquin Valley areas over the past decade with current subsidence at a rate of one inch per month in the most severe cases. While most recent subsidence effects have occurred over a relatively short period, the rate of subsidence appears to be comparable to more widespread and dramatic land subsidence of about 30 feet that occurred in parts of the San Joaquin from 1925-1980 before large water projects imported surface water to reduced groundwater dependence.

The second report is an article published by *Townhall.com* from *Associated Press* also on December 27, “Damage from sinking land costing California billions.”

<http://townhall.com/news/us/2015/12/27/damage-from-sinking-land-costing-california-billions-n2097337>

Here is a short excerpt:

Four years of drought and heavy reliance on pumping of groundwater have made the land sink faster than ever up and down the Central Valley, requiring repairs to infrastructure that experts say are costing billions of dollars.

This slow-motion land subsidence — more than one foot a year in some places — is not expected to stop anytime soon, experts say, nor will the expensive repairs.

The Drought is Killing California's Forests

Several months ago I reported on a U.S. Forest Service study that stated, that as many as 10 million trees in California were already dead due to the drought. A new study, claims that as many as 58 million trees are showing the affects of drought and may die. Dead trees, of course, increase the fire danger and flooding, as they provide fuel and no longer suck up water. The study was reported on the by the *San Francisco Chronicle* on December 28, written by Kurtis Alexander, “Study: 58 million dry California trees threatened by drought.”

<http://www.sfchronicle.com/bayarea/article/Study-58-million-dry-California-trees-threatened-6724652.php>

Here is an excerpt:

A study released Monday by the [Carnegie Institution for Science](#) counts as many as 58 million trees statewide experiencing severe water loss, whose ruin would not only turn massive stands of pristine green to ugly brown but upset vital watersheds and wildlife.

The results show that 7 to 10 percent of trees are severely stressed by the drought. In an average non-drought year, only about 1 percent of California's forests typically die.

The study concludes that roughly 41,000 square miles of forest, containing as many as 888 million trees, suffered water loss since the drought began. About 58 million trees experienced losses greater than 30 percent.

Obama "Bail-In" Farm Policy Takes Food Off the Table

Dec. 29, 2015 (EIRNS)--Eaters will be concerned to know that while the prices they pay are going up, for meat and other food staples, the prices received by farmers and ranchers for producing these commodities are plunging, to depths now endangering continued production of foods. No oversight or happenstance, this is the Obama bail-in policy, applied to the food chain. You get stiffed, while Wall Street--in this case, the commodities cartel wing--gets bailed out. Worse, unless Obama is set aside from office, chaos will break apart the food chain entirely, with overnight shortages and famine.

Take just the case of beef. As of this past Fall, cash cattle (market-ready) in Kansas sold at around \$124 per hundred pounds, which is a level sunken back to where the price was in 2013. Ranchers report losing \$100-700 per head, if they sell; but they are stuck feeding the animals, if they don't.

In contrast to the farmers getting \$1.24 a pound, consumers expect to pay from \$5 to 10 per pound. Who is in the middle? Wall Street, in the form of a select few mega-meat packing firms, which control over 80 percent of the beef processing in the United States.

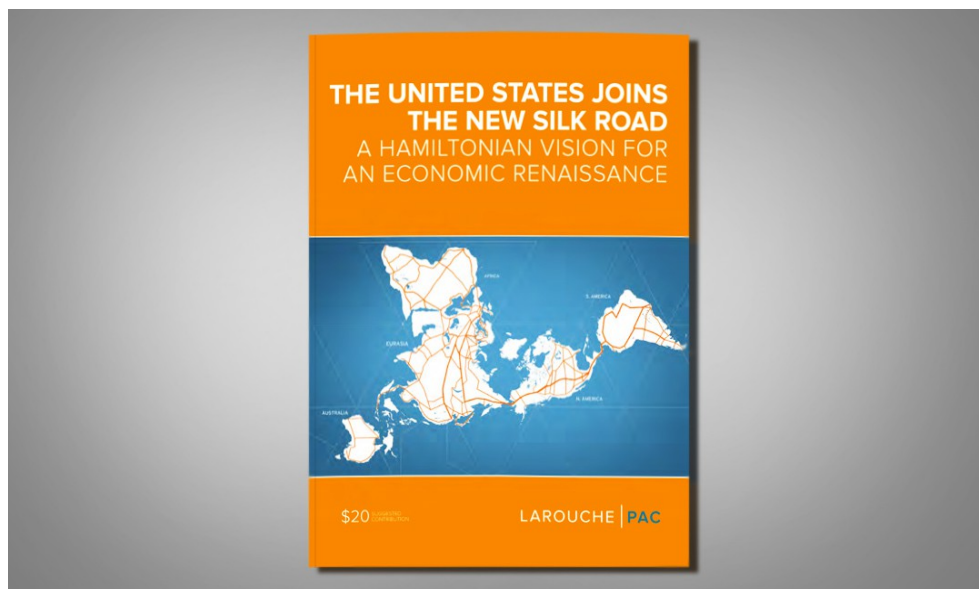
In turn, these packing companies are contracting and consolidating their capacity, as (Wall Street) "business practice" tells them. For example, in mid-2015, Tyson—the largest processor of U.S. beef-- shut down its 50-year-old Tyson Fresh Meats plant in Deniston, western Iowa, eliminating 400 jobs. Cargill has done likewise in west Texas.

There are more parts to the picture, but the meaning is clear.

New Release—LPAC Pamphlet: The U.S. Joins the New Silk Road

<https://larouhepac.com/20151228/new-release-lpac-pamphlet-us-joins-new-silk-road>

Just released this week, this new pamphlet outlines the policy and the projects to be undertaken to rebuild the nation.



Below is an excerpt from the report's introduction, "The United States Can Stop Killing and Dying, and Start Building Again." An electronic version of the report will be available soon.

We must build the future—we must build tens of thousands of miles of high-speed rail corridors; nuclear power development leading into the era of fusion; the construction of hundreds of new Renaissance cities across the country; controlling rainfall based on insights gained from the Galaxy; space exploration and research; and so on. And all of this must be done in tight coordination with the BRICS and allied nations, led by China and Russia, who are already engaged in such a process of building a New Silk Road, and [turning it into the World Land-Bridge](#).

The United States has to join this effort, not only in its international dimension, but also to extend it into the U.S. itself, both economically and culturally. It is the only way to create a future for our youth, to give them back a sense of hope and mission which is their birthright.