

California Drought Update

For February 18, 2016
by Patrick Ruckert

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A Note To Readers

I am tempted to cut short this week's report with a simple "more of the same," but, while it may appear to be the same river we crossed last week, we know it is not. Millions of gallons of water flowed by since we were here last week, so it is not the same river. Up and down the snowback goes, as do the reservoirs. El Nino, the complaint is repeated, has disappointed us. Record temperatures this past week up and down the state may be a foretaste of more to come.

All this will be covered below. But, first something from Kesha Rogers of *LaRouche PAC*, who is spearheading a campaign to revive the U.S. space program-- a space program that will act as the driver of a real physical economy revival for the nation, and to give this generation a mission, like the mission those of us of the JFK era knew. Below is an excerpt that should set some people straight on what is the real nature of mankind.

"Houston, We Do Have a Problem: It's Obama"

larouchepac.com/20160210/houston-we-do-have-problem-its-obama

A real example of visionary leadership: the great spirit and mind of Krafft Ehricke, a pioneer in space flight, rocketry, engineering, who worked alongside and was a student developing the ideas of [Werner] von Braun, and what really made our space program and the vision that took us to the Moon, with Apollo 11, through the Saturn V rocket.

"But he expressed something, again, which was a higher order of magnitude in terms of the philosophy and mindset in what, he understood, was the basis of the space program, which was, again, the defense of the human mind, and the creativity of the human mind. In Krafft Ehricke's Anthropology of Astronautics, he outlines his three fundamental laws:

"1. Nobody and nothing under the natural laws of this universe [can] impose any limitations on man, except man himself.

"2. Not only the Earth, but the entire Solar System, and as much of the universe as he can reach under the laws of nature, are man's rightful field of activity.

"3. By expanding throughout the universe, man fulfills his destiny as an element of life, endowed with the power of reason and the wisdom of the moral law within himself."

"Krafft Ehricke himself warned that a society that turned against true progress and adopted a

trajectory toward zero growth, limits to growth, [would be] a society that would cease to recognize its true human potential.

"Ehrlicke wrote: "The conception of space travel carries with it enormous impact, because it challenges man to practically all fronts of his physical and spiritual existence. The idea of travelling to other celestial bodies reflects to the highest degree, the independence and agility of the human mind. It lends ultimate dignity to man's technical and scientific endeavors. Above all, it touches on the philosophy of every existence. As a result, the concept of space travel disregards national borders, refuses to recognize differences of historical or ethnological origin, and penetrates the fiber of one's sociological or political creed as fast as that of the next."

How we must understand infrastructure, including water management systems, requires, first, an understanding of what Americans used to understand as “physical economy,” before we allowed our economy to be turned into a gambling casino. Here is a short introduction to the topic from the archives of the *Schiller Institute*:

Basic Economic Infrastructure

INTRODUCTION:

http://schillerinstitute.org/economy/phys_econ/physical_econ_main.html

... "We must recognize that what we call basic economic infrastructure, is an improvement in the biosphere beyond the capacity of the biosphere to develop and defend itself without human cognitive intervention. We must see the biosphere so improved by man, as representing what Vernadsky termed the “natural products” of human cognition produced as the qualitative improvements of the biosphere needed to develop the biosphere into the still qualitatively higher form, of a noösphere.

"We must never think of development of basic economic infrastructure as a destructive intrusion upon the biosphere, but rather as a necessary improvement of the quality of the biosphere as a biosphere, and also a form of improvement which raises the biosphere to the higher level of being an integral part of the noösphere. Indeed, that rule, is not merely a defense of the urgency of developing and maintaining the biosphere through basic economic infrastructure, but, also, represents the rule by which we must govern ourselves in changing the biosphere through infrastructural development..."

(from “[The Vernadsky Strategy](#)” by Lyndon H. LaRouche, Jr.)

Speaking of infrastructure, last week I included a short report on the Flint water contamination. Since then, city after city across the country have reported similar, and in some cases, worse contamination from lead in the water pipes. Here is a report from the *Fresno Bee* on February 4: “Testing on discolored water finds problem is inside Fresno homes.”

<http://www.fresnobee.com/news/local/article58532708.html>

Traces of lead have been found in water samples taken from some northeast Fresno homes, but city and state officials say the water is safe to drink as long as homeowners flush their taps for a minute or two.

The culprit of water discoloration found in the homes isn't city wells, the surface water treatment plant or any supply lines, testing has found.

Instead, Fresno Public Utilities Director Thomas Esqueda said, the problem is somewhere inside the homes, likely caused by iron or copper pipe corrosion.

Oh, Where Art Thou El Nino?

Or, as the headline in the *Orange County Register* on February 12, put it, “Where did El Niño go? Heat, dry spell stoke drought worries.”

<http://www.ocregister.com/articles/nino-703967-rain-heat.html>

Winter has suddenly switched off the rain and flipped on heat up to 95 degrees in California, raising jitters that the strong El Nino might not be the drought-buster the crispy state had hoped.

“Forget El Nino, this is El No-no!” YouTube celebrity Hannah Hart tweeted.

National Weather Service forecasters were quick to offer soothing messages of drizzle yet to come.

“No need to be concerned,” forecaster Steve Anderson said.

The balmy weather has “been awesome. It’s been great. But it’s not going to last,” he said. “It’s still winter.”

Other articles try to explain the “why?” the past more than two weeks of sunshine and record temperatures, while pointing to some of the consequences, like a shrinking snowpack.

From *KPBS* on February 11, David Wagner reports under this headline: “*KPBS Drought Tracker Update: Warm Winter Stalls Snowpack Growth.*”

<http://www.kpbs.org/news/2016/feb/11/kpbs-drought-tracker-update-warm-winter-stalls-sno/>

That “[Godzilla](#)” El Niño must have taken a nap this week.

[Warm temperatures](#) and clear skies have kept California dry. The latest numbers from the [KPBS Drought Tracker](#) show statewide rain and snowfall not budging over the past week — the snowpack has even decreased slightly in some areas due to melting.

As of Thursday morning, the state had received 76 percent of the rain that normally falls between Oct. 1 and April 1. That’s the same number observed last week, bending the seasonal rainfall curve flat for the past seven days. The average Sierra snowpack measurement was at 78 percent of the seasonal normal, just barely up from 77 percent the week before.

Iacobellis said there’s still time for storms to develop. But California is currently lagging far behind precipitation levels from the last major El Niño. At this point in 1998, the state’s rain and snowfall were already well above 100 percent of the seasonal normal.

Another concerning trend: some of the snow that has built up this year is disappearing. Certain parts of the Sierras have seen snow melting due to high temperatures in recent days.

The *Chico Enterprise* gives some numbers to the shrinking snowpack on February 16: “State’s snowpack back down below average.”

<http://www.chicoer.com/general-news/20160216/states-snowpack-back-down-below-average>

Here’s a reality check for anyone thinking the drought might be over: The snowpack in California has dipped back down below average for this time of year.

The Department of Water Resources estimate Tuesday put the snowpack in the Northern Sierra/Trinity region — which feeds Lake Oroville, Shasta Lake and Trinity Lake — at 97 percent of average for Feb. 16. It was the best of the three regions DWR monitors, with the Central Sierra at 91 percent of average and the Southern Sierra at 86 percent. The statewide figure is 92 percent of average for this time of year.

And, if the realization that the winter will very unlikely even put a big dent in the drought, the following article from *Discover Magazine* on the 50-50 chance that El Niño will be followed by La Niña and more drought, should be a real downer. The article, “If La Niña follows the current super El Niño, it will probably be bad news for drought-plagued California,” was published on February 13, written by Tom Yulsman. Excerpts follow. I do recommend reading the entire article for those who do wish to look ahead about six months or more.

<http://blogs.discovermagazine.com/imageo/2016/02/13/la-nina-may-be-coming-could-leave-california-dry-again/#.VsCyfObBS4p>

La Niña tends to cause drying in California, and it often persists — and deepens — for years afterward

As the animation above shows, the strong La Niña of 1999/2000 followed the record El Niño of 1997/1998. El Niño is characterized by a large pool of warmer than average waters along the equator in the eastern Pacific. In a La Niña, the opposite occurs. (Source: NASA)

If the cooling of the eastern and central tropical Pacific characteristic of a weakening El Niño progresses enough, we could well find ourselves in a La Niña by next fall or winter. That's the opposite of an El Niño, and it typically brings dry winters to California. That, of course, would be bad news for the state— which is still struggling to emerge from an epic drought.

Ok. Before I go any further, I need to emphasize an important caveat: Right now, the Climate Prediction Center puts the odds of a La Niña developing at 50/50. That's a coin flip. Still...

Will the current super El Niño give way to a La Niña this winter and fall? It's too soon to say for sure. But if it does, we should expect California to experience drying again. And if past experience is an accurate guide, it could get even worse in subsequent years.

The Drought Monitor and the Reservoirs

The U.S. Drought Monitor of February 16 reflects the past two weeks of warm sunshine California has experienced. There has been no change since last week. The portion of the state in Severe Drought remains at 82 percent; Extreme Drought is at 61 percent; and 39 percent is in Exceptional Drought.

As for the reservoirs, again there is slight improvement, but still, San Luis, because of the lack of pumping from the Delta, is still at only 48 percent of normal for this time of the year. The largest reservoirs range from 30 to 80 percent of normal. New Melones is at 30 percent; Trinity at 44 percent; Shasta is at 80 percent; and Lake Oroville is at 72 percent.

More on, “When Will it End?”

Simply put, it will be awhile. Two articles are excerpted below on the topic. The first, from Ed Joyce at *capradio.org*, on February 11, is “California Drought Improvement Will ‘Take Quite A While.’” It repeats what we have already reported, but adds some new material.

<http://www.capradio.org/articles/2016/02/11/california-drought-improvement-will-take-quite-a-while/>

The U.S. Drought Monitor weekly update shows some slight reductions in the percentage of drought in California the past week. But the report cautions that improvement in the historic four-year drought will “take quite a while.”

“Reservoir storage generally remains below-average and very significant groundwater shortages continue, according to the [report](#) released Feb. 11. “There are also serious problems with tree mortality. The [USDA](#) estimates 29 million trees are already dead, and a Stanford group estimates another 29 million trees are showing significant stress. Given these various factors, it will take quite a while for improvements in the short-term to chip away at large, multi-year precipitation deficits.”

The second article is in a question and answer format, and I have only excerpted the first question. “Fact & Fiction: Ending California’s Drought,” is by Chris Nichols from *politifact.com*. This article gives us some hard numbers on the precipitation required to end the drought.

<http://www.politifact.com/california/article/2016/feb/16/fact-fiction-ending-californias-drought/>

1) All this rain from El Niño will definitely bust the drought.

Experts say there’s a small chance, but it’s not likely.

The prolonged drought has left the northern Sierra Nevada with a rainfall deficit of about 30 inches. As of early February, this winter’s storms had delivered about 110 percent of normal precipitation in that region, home to the state’s largest reservoirs. It’s a good start, but well behind the pace needed to end the drought.

And that was before this month’s dry spell.

To wipe away the shortfall, the state would need to get an additional 80 inches of rain in the northern Sierra before October -- on top of the nearly 33 inches that have fallen since last fall. That’s the amount of precipitation needed to close the gap and maintain an average year.

Feinstein Introduces Revised Drought Relief Bill

As useless as the Congress is, some members try to do something, even if it is pathetic. Senator Diane Feinstein introduced a *Revised Drought Relief Bill* last week. The statement from her office highlighting the content of the bill is excerpted below, focusing on the sections on desalination and storage projects. The link is also provided, as posted by *mavensnotebook.com* on February 10.

<http://mavensnotebook.com/2016/02/10/this-just-in-feinstein-introduces-revised-drought-relief-bill/>

Desalination

Major desalination projects like the \$1 billion Poseidon plant in Carlsbad (which will soon generate enough water to supply 300,000 San Diego County residents) prove that new technology is quickly making desalination a viable option for many communities. The bill lists 27 desalination projects identified by California capable of producing more than 352,000 acre-feet of water per year. The bill would enable the federal government to help

support desalination projects and research, with the goal of further reducing costs and environmental impacts.

- *Reauthorizes the Desalination Act and authorizes \$50 million over five years for feasibility and design for both sea and [brackish](#) water desalination projects.*
- *Reauthorizes the Desalination Act and authorizes an additional \$50 million over five years for desalination research projects, such as improving existing reverse osmosis and membrane technology, reducing the environmental effects of seawater desalination and developing next-generation technologies to reduce the cost of desalination.*

Storage projects

Given the consensus that droughts will grow more severe and the storms that follow more devastating, storing water during wet years for use in dry years is vital. The severity of this drought has highlighted the inadequacy of California's reservoir capacity. The bill takes steps to both promote the building of new reservoirs and increase the capacity of existing reservoirs.

- *Establishes deadlines for the Bureau of Reclamation to complete feasibility studies to allow [Calfed](#) storage projects to compete for Proposition 1 bond funds.*
- *Authorizes \$600 million for [Calfed](#) water storage projects, which may include both federal projects (Shasta) and non-federal projects (Sites, Temperance Flat, Los Vaqueros).*
- *Updates Army Corps dam operations to increase water supply while reducing flood risk.*

A commentary on the Feinstein bill by *Families Protecting the Valley* issued on February 11, "Lucy Pulls the Football, Again!," reads in part:

Senator Feinstein has introduced a new drought relief bill in the U.S. Senate. According to McClatchy's Michael Doyle "it eases limits on water transfers south of the Delta, but does not mandate specific pumping levels." Although there has been a lot of rain and snow this season, you may or may not be aware that much of the water flowing from the mountains is going straight to the sea because of pumping restrictions in the Delta due to the infamous Delta Smelt.

As of today, over 2.5-million acre feet of water has gone to the sea. Much of this water could have been sent to the San Luis Reservoir for storage but instead it has been lost forever. Valley Congressman David Valadao responded to Senator Feinstein's bill by saying "Californians can no longer depend on federal and state bureaucrats to make decisions regarding water delivery. Mandated pumping levels are absolutely necessary to ensure a secure, reliable water supply to the areas most in need."

Insights On the Drought

The excerpts from the following article by *Victor Davis Hanson*, on February 3, while limited to a narrow idea on what should be done, is useful for the picture of the affects of the drought not usually

covered by others. Hanson is with the *Hoover Institute* at Stanford.

Lessons from California Drought

by [Victor Davis Hanson](#)

February 3

<http://www.hoover.org/research/lessons-californias-drought>

Another irony is that the drought has spiked the radical transition away from open row-crop ground and deciduous tree-fruit to the planting of nut orchards, almonds especially. On the West Side of the valley, water deliveries were all but ended. The water table in some places has fallen below 1,000 feet. Wells and new pumps often cost \$250,000 and more. Only the record net profits from almonds (between \$5,000 and \$9,000 per acre) allow new wells to be drilled. The larger the farm, the more frequently profitable almonds are planted, the more reasonably an operation can afford the cost of buying scarce surface water or drilling deeper—and the more likely smaller farmers sell or lease out their ground to those with the capital to make the costly transition to almond and other nut orchards. Almonds require about three acre-feet of irrigated water per year, comparable to tree-fruit and vineyards. But only almonds, which have grown from about 100,000 acres in the 1970s to nearly a million acres today—and in the last forty years have increased average production from about 1,000 lbs. per acre to nearly 3,000 lbs.—guarantee enough profits to pay for the vastly increased costs of purchasing scarce surface water, or of pumping from increased depths.

In sum, the drought and the state's poor response to it, accelerated the trend to ever-larger corporate farms, ever more mechanized farming, and ever greater mono-cropped agriculture—amid an increasingly emptying countryside.

Government failure was not just due to acts of commission, but of omission as well. In four years, not a single new reservoir was begun, despite warnings that the state's reservoir capacity long ago was fossilized—designed for a state of 20 million people, not the present 40 million.

Had the state begun work on a few of the long-planned tertiary reservoirs of the now neglected California Water Project—the Sites, Los Banos Grandes, and Temperance Flat projects—the reservoirs would now be nearing completion and ready to capture nearly four-million acre-feet of additional water runoff, should 2016 prove to be a “wet” year.

If Californians have learned anything, it is that droughts are survivable only to the degree that the state's reservoirs have water, that water projects must follow their original and contracted purposes (irrigation, flood control, hydroelectric power, and recreation), and that finite aquifers are replenished only by surface irrigation water deliveries that both recharge the water table and preclude the need for subterranean pumping.

Forests suffered as well. Perhaps there are now 12 million dead trees in the Sierra Nevada and other state and national forests. Another 1 billion trees are stressed and vulnerable to parasitic bark beetles and diseases. They too may succumb if 2016 does not prove to be an unusually wet year. In a logical world, there would be emergency government efforts to harvest these dead trees, to eliminate the specter of future forest fires, to stop the spread of tree infestations and disease, and to capture hundreds of millions of dollars of precious timber.

Yet in recent years California environmentalists have all but ruined the state's timber industry—presently less than a third the size of what it was 60 years ago. Given the power of green activists, and given that California's appetite for new homes, wood decks, and fine woodwork has not diminished, the state, once an exporter of wood products, now imports 80% of its timber.

Environmentalists now apply the same prohibitions to salvaging the logging of dead trees that they have so successfully applied to the harvesting of live ones. California forests look terrible, with large swaths of brown and dead evergreens. Trails are clogged with fallen branches and stumps. The worst forest fires in modern memory have been synonymous with four years of drought.

Why worry about the #drought? This is why: #cawx #CADrought Thanks @NWSSacramento for the graphic.

HOW CA DROUGHT WILL IMPACT THE ENTIRE U.S.

Percentage of U.S. Produce that comes from CA:

- **Artichokes** 99%
- **Almonds** 99%
- **Garlic** 98%
- **Tomatoes** 96%
- **Olives** 96%
- **Strawberries** 92%
- **Carrots** 81%



Data courtesy of The Weather Channel

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