

California Drought Update

For May 5, 2016
by Patrick Ruckert

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A Note To Readers

“There is nothing permanent except change,” so said Heraclitus in ancient Greece. While somethings may appear to be the same as the week before, they never really are. So with the drought this week. No change in the US Drought Monitor; no change in the reservoirs; no change in policy; so what has changed?

As the fourth item below reports, at least some of the water managers are beginning to realize that not only are we not out of the drought, but the direction we are going is deeper into it. The next two following items underline that thought.

While the Nestle bottled water controversy has generally been a silly debate about a few hundred acre-feet of water, now the U.S. Forest Service may implement policies that some say could impact water rights law throughout the West. A report below tells the story.

Our most important report this week is immediately below, and I hope it does its job of stimulating some thinking about how we got into this crisis and how we get out of it.

The Solution to the Water Crisis: Revive the U.S. Space Program

Like it or not, the solution for California's water crisis does not lie within the state. Nor does it appear to be even on the radar screen of either most elected officials or even the water system managers. Only by reviving the spirit and policies that originally built the state's world-class water management system can we even begin to create a future in which we can say, “yes, we have abundant water for all the requirements of all the people of the state.

A new article from *LaRouche PAC* addresses this question from the most fundamental standpoint-- the bringing once more to the forefront the truth that only by driving the most advanced frontiers of science can mankind create his future. All other problems become solvable once we decide to take our society beyond existing knowledge and capability.

So, it is only by returning half a century to the best of our “we can do anything” thinking that we can, with confidence, create that future we must create.

Below is an excerpt from this new article and the link.

PRINCIPLES AND BOUNDARY CONDITIONS OF A NEW SPACE PROGRAM A SOLAR SYSTEM ECONOMIC PLATFORM

https://larouhepac.com/sites/default/files/20160501-space-policy-memo_0.pdf

The space program isn't simply about space, it's about mankind—it's a mankind program, as much as a space program.

We must look to qualitative leaps in the extent and power of man's presence beyond Earth, into the Solar System: the development of the Moon as a basis for the eventual development of Mars and other regions of the Solar System; the accelerated exploration of the entire Solar System with advanced robotic instrumentation; and the new investigations of the Galactic System and beyond.

However, we must recognize such progress as merely the physical effects—shadows—of something unique about mankind. A few hundred years ago it was impossible for mankind to even conceive of a realistic plan to leave the Earth, but now this is a reality. What changed? Obviously we now have rockets and computers, advanced technology and industry, etc., but all of that is ultimately a product of a capability unique to the human mind—the capacity for scientific discovery of universal physical principles. This goes to the heart of the issue: the fundamental distinction of mankind from animal life per se. There is an inseparable relation between fundamental scientific discovery and the potential this creates for mankind to uniquely change the economic characteristics of society, self-transforming the ecological characteristics of the human species in a way not seen in any other form of life. The science of this process is best understood from the standpoint of Lyndon LaRouche's science of physical economics.

The Reservoirs

There is nothing new to report on the status of the state's reservoirs. Some are celebrating because the northern, and the largest of the reservoirs, are full. But, the more thoughtful look at San Luis, still lacking half the water it should have by now, and see the reality that there will be no increase in water deliveries from the two major projects in the state beyond those announced a couple of weeks ago.

U.S. Drought Monitor

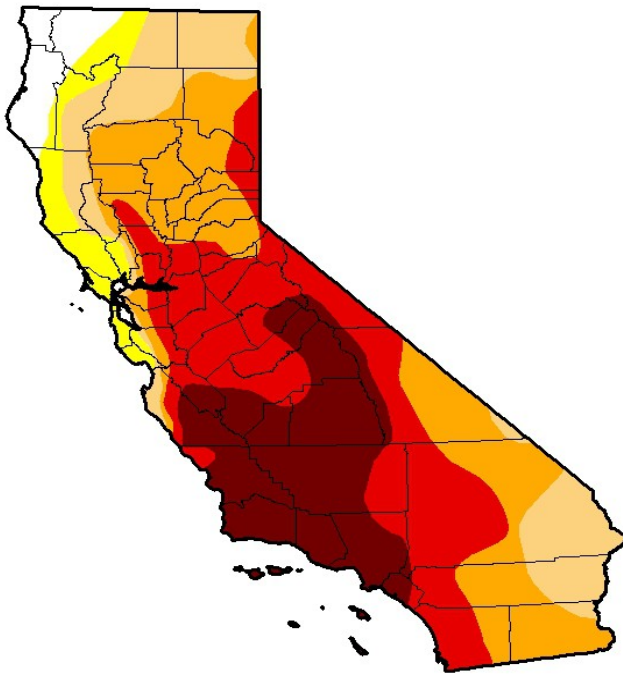
The U.S. Drought Monitor (below) shows that 50 percent of the state remains in the two most extreme categories of drought. Enough said.

U.S. Drought Monitor California

May 3, 2016

(Released Thursday, May. 5, 2016)

Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	4.27	95.73	89.68	74.37	49.15	21.04
Last Week 4/26/2016	4.24	95.76	90.09	74.37	49.15	21.04
3 Months Ago 2/2/2016	0.00	100.00	95.26	86.13	63.90	39.41
Start of Calendar Year 12/29/2015	0.00	100.00	97.33	87.55	69.07	44.84
Start of Water Year 9/29/2015	0.14	99.86	97.33	92.36	71.08	46.00
One Year Ago 5/5/2015	0.14	99.86	98.28	93.91	66.60	46.77

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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<http://droughtmonitor.unl.edu/>

State Water Managers Discuss..... Water!

Agalert.com has an important report posted on May 4 discussing a Water Education Foundation seminar held in Fresno recently. Perhaps the most important element presented is that the water managers are beginning to think that not only are we still deep in a drought, but that 2017 could be the sixth year of it. The discussion covered the state of the reservoirs, the snowpack, the Delta, fish, and the now 70 percent forecast of an on-coming La Nina.

Here are some excerpts:

“Water officials outline outlook for 2016, beyond”

<http://agalert.com/story/?id=9605>

May 4, 2016

By Cecilia Parsons

What if 2017 is a dry year?

"There are no predictions yet, but we have to be prepared," said Jeanine Jones, resources manager for the state Department of Water Resources.

Jones and other state and federal water officials outlined the challenges faced in meeting water demands and the limiting factors to delivery, during a Water Education Foundation seminar held in

Fresno. The event addressed concerns about the possibility of a return to more severe drought conditions after an "average-ish" year, current surface and groundwater conditions, and related topics.

Matching water supply with demand in California is a challenge defied by weather, regulations, biological opinions and logistical challenges, Jones said. Hopes were high for a wetter year, but as chances for additional precipitation diminish this spring, there is concern a dry pattern may return.

Forecasters predicted a "Godzilla" of an El Niño for winter and spring, Jones said, but California ended up with more of a "little lizard." The state actually received the opposite of a typical El Niño pattern, she said, with wetter conditions in the Pacific Northwest and a drier Southern California. Snowpack and rainfall totals so far easily surpass the record-low 5 percent of average snowpack received in 2015, but may not be enough to meet demands if 2017 is dry.

Long-term rainfall forecasts have not been reliable, Jones said, but temperature predictions have been more accurate. Those call for warmer temperatures, which can mean a drier winter. Presently, there is a 70 percent chance of a La Niña year—with potential for a much drier forecast in the coming year.

Constraints on the operations of state and federal water storage and delivery projects affect the amount of surface water available for agricultural and urban use, said Paul Marshall, head of the DWR Bay Delta Office. Protecting the integrity of Sacramento-San Joaquin Delta levees is a priority, he added.

The most complex part of the state's water delivery system, the delta, has issues with land subsidence, erosion, tides and rodents, which undermine the integrity of the levees that protect 700,000 acres of delta farmland, cities and homes.

Meeting environmental challenges with fish species is the biggest challenge faced by water agencies, Marshall said.

Unpredictable hydrology and variations in runoff also affect State Water Project deliveries, said John Leahigh, chief of the DWR Water Operations Office. Storms this winter did help with surface storage and pumps should run at full capacity through the summer, he noted.

"Half of the snowpack is left, so we will be close to filling it all in mid-May," was Leahigh's optimistic view.

Salinity requirements and biological opinions for smelt and salmon constrain water delivery south of the delta. The sensitive period for the two fish species lasts through June and will impact exports until then, Leahigh said.

San Luis Reservoir, the joint storage facility for state and federal water, will begin draw-down before it is barely half full, he said.

There Goes the Snowpack

On the first of April the state snowpack was at 87 percent of normal. The below report from *hcn.org* on April 24, states that the snowpack, as of a week ago, was down to near 50 percent of normal for this date. Excerpts follow:

Snowpack is melting fast, despite April storms

it has dwindled faster than experts have seen in nearly four decades, which could upset reservoir management.

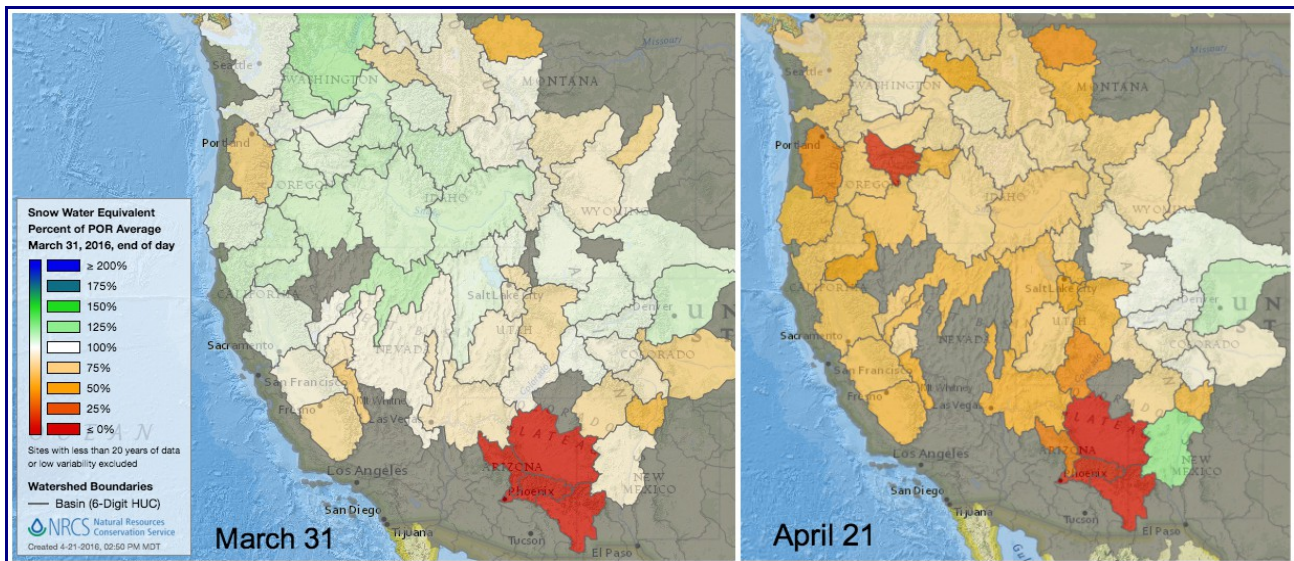
April 24

http://www.hcn.org/articles/across-west-april-storms-last-chance-for-snowpack?utm_campaign=trueAnthem:%20Trending%20Content&utm_content=571cd30504d3012e1d8980c5&utm_medium=trueAnthem&utm_source=twitter

Throughout late March and into April, much of the West experienced unseasonably warm days.

At the beginning of April, snowpack levels across the region were “near normal,” says Cara McCarthy, deputy director for the National Water and Climate Center in Portland, under the Natural Resource Conservation Service.

But in just the few short weeks since, that snow is melting faster than climate hydrologists have seen in nearly four decades, bringing the snowpack far below normal in most states in the West.



For states already struggling with dwindling water, the quick retreat of snowpack may affect how much water resource managers can store in nearby reservoirs. For California, in its fifth year of drought, this season has been a bit of a rollercoaster. In January, snowpack readings increased to 127 percent of normal (up from 90 percent in December) — good news for a state where 30 percent of the water supply is dependent on snow.

But now California’s three most crucial basins for the state’s water supply are far below normal: The Northern Sierra is at only 66 percent normal for late April, Central Sierra is at 64 percent of normal and the Southern Sierra is at 49. “This should be a bit of a wake-up call for water resource managers,” McCarthy says.

Western Drought To Persist Through July 31, At Least

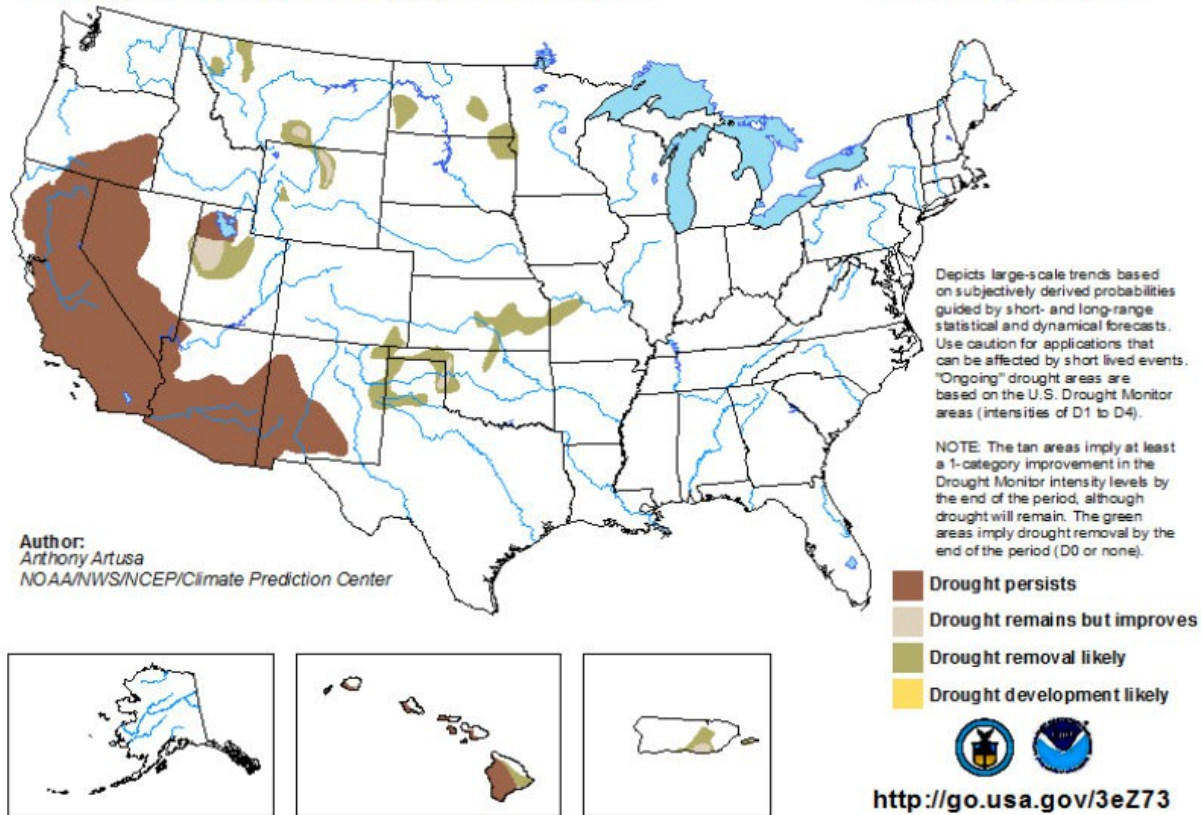
A report on *Capitol Public Radio* on April 28 states, “The U.S. Seasonal Drought Outlook (released April 21 by the National Weather Service Climate Prediction Center) shows that drought persists through much of California and western Nevada through July 31, 2016.”

<http://www.capradio.org/articles/2016/04/28/spring-storms-help-snowpack-as-california-drought-persists/>

This graphic illustrates the forecast:

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for April 21 - July 31, 2016
Released April 21, 2016



Is the Threat to Nestle an End-Run to Restrict Water Access to Farmers?

While the “debate” about Nestle bottling California water has generally revolved around the fraudulent narrative, “they are taking water during the drought,” something more serious may be brewing here. The excerpted article below from *The Desert Sun*, by Ian James on May 4, “Nestle water permit debate heats up, 280K sign petition,” includes a warning from the bottled-water industry that the potential restrictions on Nestle's historic water rights “*threatens to undermine the security and stability of state water rights systems nationwide — particularly in the West.*”

At least we are out of the silly side of the issue. For example, as noted in the article, Nestles pumps 36 million gallons per year from the San Bernardino National Forest site. That is equal to 110 acre-feet, enough for about 200 households for a year. Not much impact on the water supply there.

<http://www.desertsun.com/story/news/environment/2016/05/03/debate-over-nestle-water-permit-heats-up/83890384/>

The U.S. Forest Service's proposal to grant Nestle a new permit to continue piping water out of a national forest for bottling has drawn a flood of written comments from the public, including a petition with more than 280,000 names demanding the agency "turn off the spigot."

The debate over the company's use of water from the San Bernardino National Forest has already led three environmental groups to sue the federal government in an attempt to shut down the 4.5-mile pipeline that Nestle uses to collect water. Now the fight is playing out in comments submitted to the Forest Service by the bottled water industry, environmental activists and many other Californians.

Nestle piped 36 million gallons of water from the mountains near San Bernardino last year to produce Arrowhead brand bottled water. The Forest Service does not collect fees for the water. It has been charging Nestle an annual permit fee of \$524 per year.

The industry group expressed concern about a proposed management plan that would require Nestle to modify its operations if monitoring showed that the extraction of water was affecting the flow of surface water. It said the Forest Service's approach in reissuing the special-use permit "sets an extraordinary precedent that threatens to undermine the security and stability of state water rights systems nationwide — particularly in the West."

Forest Service officials have said they are following the proper procedures under the National Environmental Policy Act. They have said Nestle's 1978 permit remains in effect until they decide on the renewal application.

All Are Not Equal in a Drought

In a large state like California, as one can see from the U.S. Drought Monitor map above, some regions of the state are less affected by the drought than other areas. Santa Barbara, for example, is about to see its main water source run dry. An article in the *Lompoc Record* on May 2, "Lake Cachuma faces depletion by year's end," by Kenny Lindberg, tells the story. Excerpts follow.

http://lompocrecord.com/news/local/lake-cachuma-faces-depletion-by-year-s-end/article_915a8888-0ab6-5df7-8740-f94b1595d282.html

Lake Cachuma, the county's main reservoir, could be at its lowest water level in history by the end of the summer and fully exhausted by the end of the year.

The new developments were revealed Tuesday by Tom Fayram, Santa Barbara County's deputy director of water resources, during a presentation before the Board of Supervisors proclaiming May as Water Awareness Month.

"We're not quite to the lowest point that we've been in history, which is just before the March Miracle in 1991, but we will be there after this summer," Fayram said. "We will reach the lowest level that Cachuma has ever been since its construction in the 1950s."

Lake Cachuma, which most of the South County and the Santa Ynez Valley rely on for water, is currently at 14.7-percent capacity with just 28,373 acre-feet of water -- far off its 193,305 acre-feet capacity.

The lake is supposed to be able to last through a seven-year drought period, but that doesn't look feasible at the moment, Fayram said.

"We're far beyond what the past critical drought has been for a five-year period," he said. "What will

be interesting is where we end up for a seven-year period, which is what Cachuma ideally is meant to supply for.”

Unexpected (by most) Consequences

The rains of El Nino, especially in southern California, have created a more extreme fire danger for the coming months by giving a kick to growth of ground cover-- grasses especially. The *Los Angeles Times* article of May 4, “El Niño rains added fuel to California's upcoming fire season, experts say,” by Joseph Serna, is excerpted below.

<http://www.latimes.com/local/lanow/la-me-ln-california-fire-drought-el-nino-outlook-20160504-story.html>

As he drove east of Fresno to the next Wildfire Awareness Week event in Kern County on Wednesday, Cal Fire Chief Ken Pimlott turned his gaze toward the browning landscape.

“I’m looking at grass that’s 2 feet tall easily, and it’s already dead,” Pimlott said.

Meanwhile, far away in the southern and central Sierra Nevada, foliage on 29 million trees infested with bark beetles are turning orange and red and dying, with countless more stretching north toward Sacramento expected to meet a similar fate over the next year.

Thanks to El Niño rains and a fifth year of drought, experts say, California’s landscape has provided enough water to spring up new vegetation to ignite while swaths of forest continued to dry out, priming them to burn and creating a dangerous mix that state and federal firefighters will have to contend with this year.



In the San Bernardino National Forest, grass is sprouting up on south-facing hillsides and lining highways in the Inland Empire and El Cajon Pass, said Dan O’Connor, a forest, fuels and prevention officer with the U.S. Forest Service.

“That puts us on edge,” O’Connor said. “The grass will cure the earliest and it takes the least amount of effort to get going.”