

# California Drought Update

**For April 21, 2016**  
**by Patrick Ruckert**

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## A Note To Readers

Drought, water restrictions, drought, fire danger, drought, pontificating professors, more drought, half-full reservoirs, drought again, La Nina and more drought coming, the Delta and the drought, and we cannot forget the fish and the drought.

That about sums it up.

Below you will find a commentary by Jay Famiglietti in the *Los Angeles Times*, who presents not only a picture of more serious water shortages in California and other parts of the nation and the world, but then, once again, presents the non-solutions of monitoring groundwater and conservation. Two years ago in his opinion column, also in the *Los Angeles Times*, he warned that the state has less than two years of water storage on hand. Now we have continuous shortages in a substantial part of the state, and more than 500,000 acres of farmland being fallowed each year. His recommendations: The same as two years ago-- the monitoring of groundwater pumping, now being implemented, and conservation. Neither of which will do anything to alleviate these shortages.

With the drought now half-way through its fifth year and no end of it in sight, only those voices are heard, like Famiglietti, who propose nothing that addresses the fundamental problem. And that fundamental problem is not the Bureau of Reclamation's criminal action of sending hundreds of thousands of acre-feet of water out to the Bay; nor is it the mere building of more storage to capture the water when it is there.

No, the fundamental problem is the acceptance by the population, including by those most immediately affected-- the farm sector, of those policies that are killing us. Until there is a determination to virtually overthrow the entire paradigm of submitting our economy to the criminals of Wall Street and their zero-growth environmentalist fellow-travelers, complaints will continue, but nothing will be done.

There is a growing understanding that being a coward and doing nothing should come to an end. Nothing to do with the drought directly, but, as I reported last week, the cover-up of the Saudi responsibility for 911 is finally breaking. This past week it has exploded as coverage of the 28 classified pages of the 911 Congressional report has been on CNN, Fox News, PBS and dozens of other media. Here is a summary of where the potential for breaking open the politics of the nation stand: [larouchepac.com/20160419/obama-out-flanked-do-americans-have-courage-drive-him-out](http://larouchepac.com/20160419/obama-out-flanked-do-americans-have-courage-drive-him-out)

Our first item below is an obituary for a dairy farm. Pushed over the edge by water restrictions, farms and ranches die.

The final item in this report takes off from last week's discussion of the paleoclimatology of our region. We shall shift this week from what nature gives us to how mankind responds, with a discussion of the great biogeochemist Vladimir Vernadsky.

## Death of a Dairy Farm

Eddie Martin posted the following on the face book group My Job Depends On Ag on April 16:

*I'm sitting here writing this with lots of emotions. This dairy was started in 1946 and today the last load of cow's just left. I realize that since 1946 there have been cows and people here every single day until today; and what I mean about everyday is holidays, weddings, births even deaths. This place always ran. With the cows gone everything else means a lot less to me. We had to sell because there is no way I see us making it to the end of the year. It all started with not enough water and now not enough money for the milk we produce. And the future does not look good for either. I'm only going to look forward and I really hope dairies and farms can make it, I really mean that. I'm sitting with blurry eyes after 70 years and 29 years of me running it. The silence from a dairy that's ran that long is deafening.*



*The cows are gone*

## The Drought and the Reservoirs

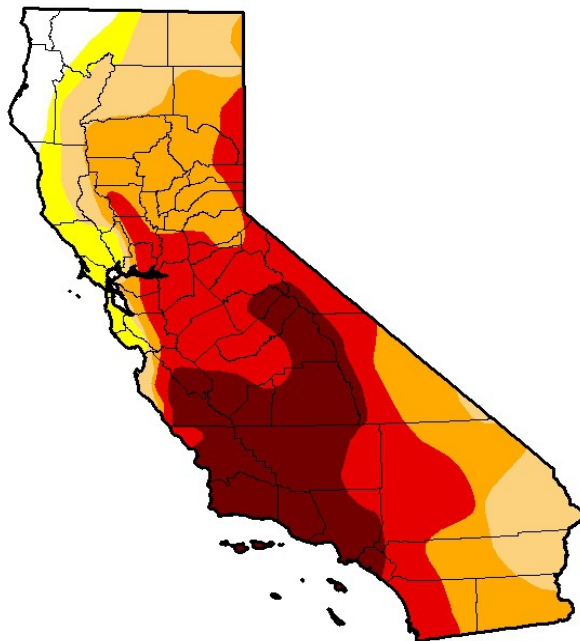
As you can see from the U.S. Drought Monitor of April 19 below, the after-effects of the March storms continue to nibble away at the intensity of the drought in the state. The combined Extreme and Exceptional Drought categories declined this past week from 55 percent to 49 percent, and the Exceptional category alone went from 31 percent down to 21 percent. Looking at these categories from last year, the numbers were 66 percent for the combined Extreme and Exceptional drought and 47

percent for the Exceptional category alone. Put in another way, the intensity of the drought today is 15-25 percent less than one year ago. But, as I have reminded you often, 2014 was the first time even one percent of the state was in Exceptional Drought.

Again, there is little change in the conditions of the reservoirs, which, to a certain degree, undercuts the “good” news from the Drought Monitor. The northern reservoirs are near full and the central and southern ones are at less than 50 percent of capacity. What stands out most sharply is San Luis Reservoir with its capacity of over two million acre-feet only at half of that number.

**U.S. Drought Monitor  
California**

**April 19, 2016**  
(Released Thursday, Apr. 21, 2016)  
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	4.24	95.76	90.09	74.37	49.15	21.04
<b>Last Week</b> 4/12/2016	3.55	96.45	90.58	74.37	55.25	31.68
<b>3 Months Ago</b> 1/19/2016	0.00	100.00	97.17	86.13	68.15	42.66
<b>Start of Calendar Year</b> 12/29/2015	0.00	100.00	97.33	87.55	69.07	44.84
<b>Start of Water Year</b> 9/29/2015	0.14	99.86	97.33	92.36	71.08	46.00
<b>One Year Ago</b> 4/21/2015	0.14	99.86	98.11	93.44	66.60	46.77

*Intensity:*  

 D0 Abnormally Dry    D1 Moderate Drought    D2 Severe Drought  
 D3 Extreme Drought    D4 Exceptional Drought

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

**Author:**  
Richard Tinker  
CPC/NOAA/NWS/NCEP



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

## Both Major Projects Announce Increased Deliveries

Both the State Water Project and the Central Valley Water Project managers announced today increased deliveries to contractors, above those announced earlier. The statements from the state Department of Water Resources and from the Bureau of Reclamation are excerpted below. The state allocation of 60 percent is the highest since 2012, and it should be noted that most of this water goes to urban areas including Southern California. The statement from the Bureau of Reclamation raising delivery percentages to 50 percent of contractors' requests to the Friant Division contractors, as far as I know, still leaves the Westlands Water District with only a 5 percent allocation.

### *From the Department of Water Resources:*

*With runoff from spring storms boosting reservoir levels, the Department of Water Resources (DWR) today increased its water delivery estimate for most recipients to 60 percent of requests for the calendar year.*

*DWR's initial State Water Project (SWP) allocation, announced in December, was 10 percent of requests. As storms developed, the allocation was increased to 15 percent on January 26, then to 30 percent on February 24 and 45 percent on March 17.*

*Today's boost to a 60 percent allocation is mostly due to March storms that soaked Northern California after a mostly dry February.*

*The 29 public agencies that receive SWP water (State Water Project Contractors) requested 4,172,786 acre-feet of water for 2016. With today's allocation increase, they will receive 2,527,629 acre-feet.*

*The SWP provides the same allocation percentages to cities and farms.*

### ***From the Bureau of Reclamation:***

*The Bureau of Reclamation today announces an increased allocation to the Friant Division contractors of Class 1 water supply from 40 to 50 percent. The initial Friant Division water supply allocation announced on April 1, 2016, was 30 percent Class 1 water supply and an additional 100,000 acre-feet of Uncontrolled Season supply to be scheduled and delivered by the end of April. The Class 1 water supply allocation was subsequently increased from 30 to 40 percent pursuant to Reclamation's April 11, 2016, notification to Friant Division contractors.*

*Uncontrolled Season scenarios are generally descriptive of Class 2 supplies, in that they must be evacuated from the reservoir in the near term to avert flood control concerns, are generally undependable in character with regard to predicted volume and duration, and may not necessarily be scheduled at the contractor's convenience.*

*Reclamation is able to make this announcement and notify Friant Division Class 1 contractors of their increase in water supply based upon improved forecasted hydrologic conditions, commercial power operations in the Upper San Joaquin River Basin, current storage in Millerton Lake, and cooler weather demand patterns.*

## **Summary of Where We Are**

Tim Hearnden of *Capital Press* on April 19 summarizes the drought conditions in "March storms were likely swan song for El Nino, forecasters say." Some excerpts follow.

<http://www.capitalpress.com/Water/20160419/march-storms-were-likely-swan-song-for-el-nino-forecasters-say>

*The big storms in March that enabled the U.S. Bureau of Reclamation to give full water allocations to Northern California farms put a cap on an El Nino season that was one of the strongest on record. But while the storms produced above-average precipitation in much of the Sierra Nevada, they provided below-average snowpack and the snow is melting quickly, Mead said.*

*"We are two weeks into snowmelt season and based on the automated station report, the northern region has already lost one-third of its water equivalent that had built up this winter," she said. "The*

*higher elevation central and southern Sierra regions have lost 25 percent.”*

*While many northern reservoirs are nearly at capacity for the first time in several years, reservoirs in the central and southern half of the state are still half-full or less, Mead said.*

*Though the precipitation improved drought conditions in Northern California, much of the middle of the state is still in the most severe of drought categories, according to the U.S. Drought Monitor.*

*State officials have said the uncertainty surrounding next winter’s rainfall and snowpack underscores the need for Californians to continue to conserve water for an ongoing drought, which is now in its fifth year.*

## **Some Think We Are Home Free**

While the increased allocations from the state and federal authorities appears to be an appropriate and moderate measure, some are acting like the drought is over. It is understandable that no one likes the restrictions, but for everyone to now demand back to normal is a bit too much, especially since water is still flowing into the Bay and not to storage. And, as we covered last week, six months from now a La Nina may kick in, intensifying drought conditions in the state. The *Associated Press* on April 20 ran this article, “California water districts say drought emergency has ended.” Here are some excerpts. [http://www.mercurynews.com/bay-area-news/ci\\_29791523/california-water-districts-say-drought-emergency-has-ended](http://www.mercurynews.com/bay-area-news/ci_29791523/california-water-districts-say-drought-emergency-has-ended)

*FRESNO -- California water districts large and small urge regulators to toss out or significantly relax emergency drought orders requiring residents to take shorter showers and let their lawns turn brown.*

*The State Water Board on Wednesday is holding an informational workshop to determine the future of urban water conservation in the state. California cities are under orders to use at least 20 percent less water.*

*Dave Bolland of the Association of California Water Agencies says in a letter to the board that it is time to end the restrictions statewide.*

*He says the huge savings Californians have made no longer reflects the state's improved water supply.*

*California is in a fifth year of the drought emergency; a near-average winter for rain and snowfall has eased the drought.*

## **Famiglietti Drones On**

Here are some excerpts from the column by Jay Famiglietti referred to in the *Note to Readers* above. Jay Famiglietti is the senior water scientist at the NASA Jet Propulsion Laboratory in Pasadena. He is also a professor of Earth system science at UC Irvine. <http://www.latimes.com/opinion/op-ed/la-oe-famiglietti-chronic-water-scarcity-20160417-story.html>

***Is the California drought America's water wake-up call?***

*Los Angeles Times*

by Jay Famiglietti

April 16, 2016

*NASA satellite data show that water losses from the state's major watersheds — the Sacramento River basin, the San Joaquin River basin and the Tulare Lake basin — skyrocketed between 2011 and 2015, disappearing at a combined rate of 16 million acre-feet per year. As a matter of comparison, the snowpack in an average California winter stores 15 million acre-feet of water.*

*In contrast to intermittent drought, the water needs of California's highly productive agricultural industry are incessant. The food industry's demand for water outstrips the renewable annual surface water supply in rivers and reservoirs fueled by winter rains. The difference is pumped from limited groundwater supplies that, as a result, have been dwindling for nearly a century.*

*Looking at satellite data from 2002 through 2015, a time span that includes the very wet El Niño winters of 2002-03 and 2010-11, shows the pattern of our continually decreasing water resources. Even with those periods of heavy precipitation included in the calculations, the state's major basins lost water at a combined rate of 3 million acre-feet per year.*

*The upshot of chronic water scarcity is this: Even when the epic drought ends, when all of the state's surface and groundwater supplies are jointly tallied, California will still be losing water. The state simply does not have enough water to do all the things that it wants to do.*

*To address these challenges, we must embrace a “one water” paradigm. Surface and groundwater are a single resource and should be viewed as such. Managing only surface water while ignoring groundwater is a fool's game, since municipalities and farmers will compensate for reduced surface water by pumping unregulated groundwater. A one-water approach provides a comprehensive view of our water supply; it is essential for establishing water security.*

## **The Fire Season Is Just Around the Corner**

Reminding us that both fire season is oncoming and that the damage from the four previous years of drought will make it severe is this item from *CBS13* on April 19. Excerpts follow.

### ***Cal Fire Warns 29 Million Dead Trees From Drought Pose Fire Risk***

*By Lemor Abrams*

*UBURN (CBS13) — Cal Fire is warning fire season is creeping up and will return with a vengeance after California's drought killed millions of trees.*

*Fire officials are warning that those drought-damaged trees pose an even greater threat than ever.*

*In 2013, the Rim Fire burned tens of thousands of acres in the Stanislaus National Forest. It was in the middle of California's devastating drought when an estimated 3 million trees died off.*

*Fast forward a few years into the drought. The dry weather and destructive bark beetles have killed off 29 million trees across California. In Auburn, recent rains have made way for lush green hillsides, but a close look reveals pockets of brown trees. Cal Fire spokesman Daniel Berlant says the tree die-off continues to move north.*

*It's a race against time to get to the trees before they become more dangerous.*



*“This is not just a fire threat, it’s a public safety threat on a very large scale,” he said.*

*Crews have been aggressively removing the dead trees, but for each one on the road, there are seemingly thousands left to cut down.*

## **The Drought, the Delta, Fish and Farmers**

This article, from [waterdeeply.org](http://waterdeeply.org) on April 20, while arguing that the Delta system cannot both provide water to farms and to Southern California, and preserve fish, does provide some useful background for those who wish to look at the problem in some detail, with historical background included. Excerpts follow.

### ***Is California’s Water System Really Broken?***

*by [Alastair Bland](#)*

<http://www.waterdeeply.org/articles/2016/04/10174/californias-water-system-broken/>

*Many farmers contend that the water delivery system that pumps water through the Sacramento-San Joaquin Delta is broken – water to farms and cities must be cut to help fish species, but those species’ numbers are still plummeting. So what’s going on?*

*Farmers in the western San Joaquin Valley are facing another year with curtailed water allocations, while fish populations are as low as they’ve ever been. Something, clearly, isn’t working, and agriculture industry lobbyists say they know what the problem is.*

*“Our water delivery system is broken,” says Gayle Holman, spokesperson for Westlands Water District, a large San Joaquin Valley farming region expected to take a hard hit this year from reduced water deliveries.*

*Holman argues that environmental restrictions against pumping water from the Delta are harming farmers’ livelihoods without doing any good.*

*“Fish, agriculture, communities – none of them are benefiting from the precautions [against pumping],” Holman claims. “We’re seeing an overall erosion of the productivity of the Delta and the farmland south of it.*

*Rosenfield says so much water is now being taken out of the Delta on an annual basis that what was once a thriving estuary functions today more like a large, warm-water swamp, friendly to some non-native fishes, such as black bass, catfish and sunfish, but very hostile to most native fishes.*

*Scientists such as striped bass expert David Ostrach, U.C. Davis’ Peter Moyle and Carson Jeffres, and California Trout’s Jacob Katz, have all argued that the loss of annual flood cycles, as well as riverside floodplain habitat, has made survival for small fish in the Central Valley’s waterways almost impossible.*

*In 1951, the U.S. Bureau of Reclamation’s Central Valley Project began operating a massive pumping station in the southern Delta. About a decade later, the California Department of Water Resources introduced a similar pumping station to support its own conveyance system, the State Water Project. [Pumping rates](#) grew steadily from about 1.5 million acre-feet (1.8 billion cubic meters) in the 1960s to the 4 million acre-foot level by the 1970s.*

*At the same time, the decline of the Delta ecosystem began in earnest.*

*Then, in the early 2000s – after a rapid increase in water pumping pushed Delta exports to record rates of more than 6 million acre-feet (7.4 billion cubic meters) – the decline accelerated,....*

*Farm lobbyists remain unconvinced. Wade, at the California Farm Water Coalition, says attributing fish declines to water diversions is erroneous and causes needless harm to growers of fruit trees and vegetable crops in the western San Joaquin Valley.*

*“There is no science that shows the export pumps at the south end of the Delta are having a long-term impact on salmon or delta smelt,” Wade says.*

*In an average year, more than half the Central Valley’s winter–spring runoff is captured behind dams or pumped out of the Delta, according to Rosenfield. That’s too much. Scientists have calculated that a healthy Delta ecosystem would need closer to 75 percent of that flow moving through the estuary and into San Francisco Bay.*

## **Mankind Creates His Own Future**

Last week's discussion of the climatic history of the California region and its characteristic over the past thousand years or so of alternating mega-droughts and mega-floods, deserves a follow-up. Droughts and floods are phenomenon of nature. The affect on human societies that those events produce, on the other hand, is entirely determined by mankind's activity in preparing for them.

That preparation can, and has been, labeled geo-engineering. But, something more fundamental is at work here. Mankind's intervention into the rest of nature is not limited by what is implied by the somewhat mechanical term geo-engineering. Mankind continuously reshapes the Earth's geology and the arena of life called the biosphere, and, as his creative powers have progressed over the millenniums, man is now the most powerful force in doing so.

Below are some excerpts from an introduction to one of the books of Vladimir Vernadsky (1863-1945), the great Russian-Ukrainian biogeochemist of the last century, whose work on the biosphere and the noosphere is the standard for real science.

Vernadsky rejected the predominant environmentalist idea of today that man and nature were in conflict, instead, Vernadsky saw man as the deservedly dominant force of our world and promoted the most rapid development of scientific and technological progress.

What follows are a few excerpts from the introduction to an article published in *21<sup>st</sup> Century Science and Technology* issue of Summer, 2014. The entire article can be found here:

[https://www.21stcenturysciencetech.com/Articles\\_2012/Spring-Summer\\_2012/04\\_Biospere\\_Noosphere.pdf](https://www.21stcenturysciencetech.com/Articles_2012/Spring-Summer_2012/04_Biospere_Noosphere.pdf)

*The Transition From the Biosphere To the Noösphere*  
by Vladimir Vernadsky

*Excerpts from Scientific Thought as a Planetary Phenomenon, 1938*

*Translated by William Jones*

*From the introduction by William Jones:*

*Since the 1980s, the work of Vernadsky has been widely circulated and popularized by the movement*



*led by U.S. economist and statesman Lyndon LaRouche, whose work on economics has, over the last few decades, been most significantly influenced by Vernadsky's concept of the noosphere. In their view of man and man's possibilities for development they are kindred souls.*

*In Russia, Vernadsky's name is as familiar as that of Pasteur or Curie or Einstein.*

*But Vernadsky, like Leonardo da Vinci, one of his great heroes in the realm of science, was also something of a universal genius. His interests spread over the entire gamut of scientific thought. And like Leonardo, his seminal work in so many areas provided the basis for further research in entirely new fields of research: genetic mineralogy, geochemistry, hydrogeochemistry and hydrogeothermy, oceanography, radiogeology, cryology or the study of permafrost, and cosmochemistry. He virtually created the field of biogeochemistry and his insistence on studying the chemistry of other planets to find the similarities—and dissimilarities—to our own, foreshadowed much of the work that would reach fruition after his death in the manned space program.*



*Vladimir Vernadsky*

*During the often tumultuous and difficult years following the Russian Revolution and civil war, Vernadsky would steadily work to revive and advance Russian science. Until the mid 1930s, he was permitted to travel abroad almost every year, consolidating contacts with the main figures in international science, with Marie Curie in Paris, with Otto Hahn in Germany, and with Lord Rutherford and Frederick Soddy in England.*

*Vernadsky almost single-handedly conducted a campaign in Russia to establish a major research center for nuclear energy.*

*Vernadsky also was the first to recognize the absolutely essential role of the biosphere, i.e. the total aggregate of living matter on Earth, in the development of the Earth's upper crust and atmosphere and stratosphere. With the appearance of Man, however, Vernadsky saw an entirely new dimension in the history of the biosphere in the changes wrought through the productive activity of Man. Just as the biosphere is characterized by a steady increase in its energy throughput as it develops and subsumes the Earth, so also does the activity of Man begin to develop its own characteristic form of "energy" which assumes a predominant role in the biosphere and transforms it.*

*Vernadsky called this new era with the development of man, the noösphere, after the Greek term noos (or mind), to distinguish it from the biosphere per se.*

*Vernadsky felt that now in the 20th Century, with Einstein's discovery of relativity and with the mastery of atomic energy, man was in the process of taking a tremendous leap forward in the development of the noösphere, putting him on the verge of extending his reach into the surrounding universe.*

*Quite simply, Vernadsky understood that there existed in the universe a principle of development, which, with the development of man and the new-found role of man's reason, expressed itself in the necessity for continued progress. While a great deal of distortion of the thrust of Vernadsky's thought has been introduced into the public domain over the last several decades by the Green movement's "adoption" of Vernadsky as some form of "ecologist," it is hoped that the ideas expressed clearly by Vernadsky in the present work will lay to rest any doubts about where he stood in that respect, firmly behind the commitment to the scientific and technological development by means of which man becomes ever more the master of his universe.*