

# California Drought Update

## by Patrick Ruckert

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<http://www.californiadroughtupdate.org>

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## A Note to Readers

In 1962-63, President John F. Kennedy gave six speeches inaugurating water projects throughout the West. His theme echoed the most memorable statement from his inaugural address in January, 1961: "Ask not what your country can do for you, but ask what you can do for your country." Immediately below is the link to the video of those six speeches.

**Six JFK Speeches:** <https://www.youtube.com/watch?v=TP8xpevILNE>

I was reminded of those speeches by some remarks made by Lyndon LaRouche this week in a discussion with his associates. Excerpts from that discussion is our first item below.

Most interesting this week is the report from NASA and other agencies that 1.03 million acres of Central Valley farmland has been fallowed this year, well above all other previous estimates. Also of note is the former proposal by a former Brownshirt to ban the drilling of all new wells in the Central Valley.

## To Solve Problems: "It's not what you can achieve, it's what you can cause others to achieve."

From a discussion with Lyndon LaRouche on October 27, 2015:

*And therefore, this inability to understand mankind, not from the standpoint of what you think, or what you want, or what will make you happy as such The question is, what are you doing for humanity; for the purpose of mankind? Mankind is not supposed to sit on Earth and fart on Earth all day. Mankind is*

*responsible to develop the planet and beyond the planet; to create the productive powers of labor -- which is not just productive powers of labor in that crude sense.*

*If you are not better than your ancestors were, you're not much good. That's the general idea. What's the educational process? It's to produce a child who is better than the parents; and every good parent wants to do that. Every really good parent wants to do that. And create a population within that existing population which is better and more able to contribute to the future of mankind than your own generation has. If you can't do that, what good are you?*

*Are you capable of developing mankind as such, to achieve capabilities, which mankind has never had before? That's the question; that's the principle.... And people stifle themselves by saying they want to be practical. Being practical? That's for dead people; you can't do any damage after you're dead. And you live for the purpose of securing the future of mankind; which does not mean repeating something. It means accomplishing something which mankind has never achieved before. And that's the purpose of human living; to generate something which mankind has never successfully been able to do before, for mankind.*

*It's not what you can achieve, it's what you can cause others to achieve. Don't think about how you can become successful. Think about how you can make other people successful....*

## **The First Four Years of the Drought: A Report**

Maven's Notebook has published a two part report on the October 16 Mountain Counties Water Resources Association event, "The truth be told: The Delta, the tunnels, and the tributaries." Participants included some of the "big names" in water management in the state. The link to Part I of Maven's report is here: <http://mavensnotebook.com/2015/10/28/the-truth-be-told-the-delta-the-tunnels-and-the-tributaries-part-1/>

Just a few excerpts are worth reporting here:

*"For the agricultural sector in the Central Valley, the biggest water user in the state, surface water supplies are down about 8 or 9 MAF; of that we're pumping about 6 MAF more, so the shortage in the reduction in deliveries is about 2.7 MAF."*

*"The current drought is over 10 million acre-feet loss in urban and agricultural water supplies for the state. Some of that's north of the Delta, most of its south, so what will be our loss in surface water from this much feared Delta earthquake, with and without the tunnels?" -- Dr. Jeffrey Michael*

*"For some parts of California, this drought is going to be very long-term," said Dr. Lund. "Certainly with the Sustainable Groundwater Management Act, there are a lot of parts of California, particularly down in the southern part of the Central Valley that are basically going to be in a permanent drought for as long as we can imagine. We've got a tremendous amount of groundwater overdraft that they rely on, even in wet years, and so there's going to be a lot of pressure on the statewide grid even coming from that, including the Delta, and including environmental flows for fish that are going to have to be made up, so the pressure is going to be on for a long time, except for unusual flood years."*

## **Central Valley Idle Farmland has Doubled During Drought**

On October 21 U. S. and California government agencies released a statement titled, "Federal Agencies Release Data Showing California Central Valley Idle Farmland Doubling During Drought." <http://www.nasa.gov/feature/ames/federal-agencies-release-data-showing-california-central-valley-idle-farmland-doubling>

Of note in the report is the estimate that 1.03 million acres of Central Valley farmland has been fallowed this year. This contrasts sharply with estimates by both the state and by farm organizations

that between 600,000 and 800,000 acres have been fallowed. Excerpts from the report follow:

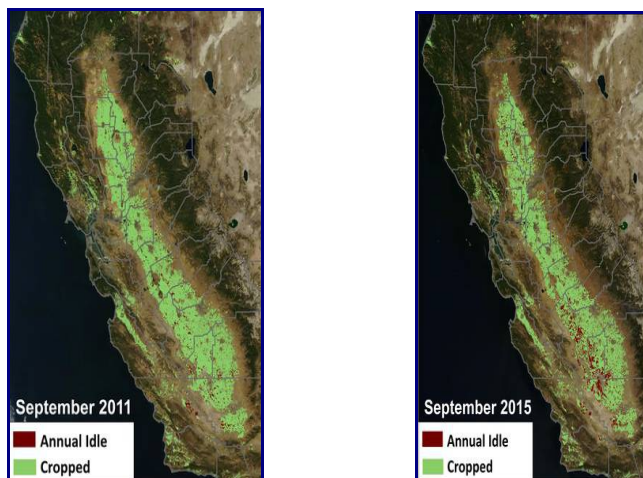
*NASA, in collaboration with the United States Department of Agriculture (USDA), United States Geological Survey (USGS), and the California Department of Water Resources, released data today showing the effect the current drought has had on agricultural production and the idling of California farmlands.*

*NASA and USDA estimate that more than 1.03 million acres have been idle all year, which represents approximately 15 percent of the 7 million acres of irrigated farmland in California's Central Valley. This is more than double the amount of idle agricultural acreage in 2011, which was the last calendar year following a winter with average or above average precipitation across the state.*

*"As the summer season starts to wind down and the 2015 California water year comes to an end, the data illustrates the toll the drought has taken on California agriculture," said Forrest Melton, senior research scientist at NASA's Ames Research Center in Moffett Field, California.*

*The datasets were produced as part of a joint project to use satellite data to continuously track changes in unplanted agricultural acreage during the drought. Results for 2015 indicate that the extent of unplanted agricultural land increased in the Central Valley by more than 500,000 acres in winter and summer months relative to 2011. The project represents the first time state agencies used satellite data to track drought impacts on agricultural lands in California.*

*Additional analyses conducted by NASA separated estimates of idle acreage for the winter and summer seasons in the Central Valley. This analysis revealed that during the summer season, when many high value crops are produced and harvested, a total of 1.92 million acres of farmland have been left idle since June 1. This represented an increase of 522,000 acres since 2011, when only 1.39 million acres were left unplanted during the entire summer growing season. NASA's data confirms the model-based estimates included in a report on economic impacts of the drought released by UC Davis in August, which estimated 540,000 acres were fallowed in 2015 due to the drought. In 2015, the largest increases in idle acreage were observed along the west side of the San Joaquin Valley in Fresno, Kings and Kern counties.*



**Credits: NASA**

*The datasets map the change in idle, or fallowed, lands -- agricultural acreage typically cultivated but allowed to lie idle during one or more growing seasons -- across the California Central Valley over the past five years. The datasets highlight increases in idle farmland in the Central Valley as the drought has extended into its fourth year.*

## **State Water Board Releases Water to Farmers-- Now that the Harvest is Over**

The following statement was issued by the State Water Board this week. My commentary is in the title above.

*State Water Board issues notice of available water to divert under pre-1914 water rights for the Yuba, American, and San Joaquin River watersheds: “State Water Resources Control Board (State Water Board) staff has determined that sufficient water is now available to support diversions by all pre-1914 water right holders in the Sacramento-San Joaquin watersheds and Delta. This includes those water rights subject to the June 12, 2015 and later notices of water unavailability in the Yuba, American and San Joaquin River watersheds. The notice is applicable beginning Tuesday October 27<sup>th</sup> and will remain in effect until further notice. Staff’s determination of water availability is based on precipitation and runoff estimates forecasted by the National Weather Service, unimpaired water supply calculations by the Department of Water Resources and reduced water right demands. During this diversion opportunity, you must comply with all terms and conditions of your water right, especially the season of diversion and bypass conditions. This notice also does not relieve you of the responsibility to comply with other notices such as a [Term 91](#) notice and orders of curtailment for fishery protection. You should keep a record of your diversions since such diversions are still subject to prior rights and reporting requirements. Any diversion in violation of the terms and conditions of your water right, or other notices, are subject to enforcement. State Water Board staff will be monitoring weather forecasts and stream gages to determine if the diversion opportunity should continue or be expanded for post-1914 water rights. Please monitor your email and our website for further updates on the suspension of the notice of water unavailability.”*

## **“Lake Mead forecast to drop another 5 feet in the coming year”**

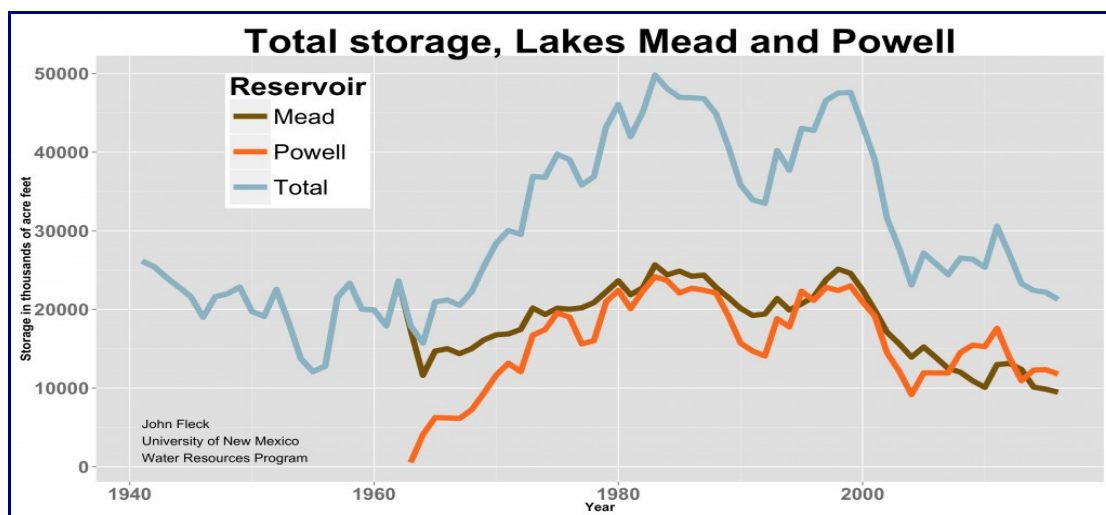
That is the title of an article by John Fleck on October 14. It is important for Californians to be reminded that in addition to water from the Sierras and the northern part of the state, we also receive a substantial amount of water from the Colorado River. California takes the lion's share of the 9.8 million acre-feet Lake Mead provides. The stored water in Lake Mead behind the Hoover Dam is now lower than when it was first filled in 1937. Excerpts from the article follow. The link is here:

<http://www.inkstain.net/fleck/2015/10/lake-mead-forecast-to-drop-another-5-feet-in-the-coming-year/>

*Even with a dose of bonus water transferred from the Upper Colorado River Basin’s storage account to the Lower Colorado River Basin’s storage account, Lake Mead is forecast to drop another five feet between now and the end of September, according to the U.S. Bureau of Reclamation’s first forecast of the 2015-16 water year.*

*Just a reminder of basin geography for those not obsessed with these things: Lake Powell is on the Arizona-Utah border. It represents the Upper Basin’s “savings account”, used to meet the Upper Basin’s delivery obligations under the 1922 Colorado River Compact. Lake Mead is on the Arizona-Nevada border just southeast of Las Vegas. Water is released from Mead over the course of the year for farms in Arizona and California (ag gets the biggest share of water), for all the region’s major urban*

areas on the U.S. side of the border (Las Vegas, Phoenix-Tucson, Los Angeles-San Diego), and for farms and cities in Mexico.



**Data source: USBR. 2016 projection based on USBR October 2015 24-Month Study**

My updated graph is based on the 24-Month Study released today by the U.S. Bureau of Reclamation ([pdf](#)). You should maybe ignore the Lake Powell forecast this early in the year – that’s entirely dependent on how much snow we get this winter, which at this point is not accurately forecastable. But the Lake Mead forecast is worth paying attention to, even this early in the year, because it’s based on human decisions about how much water to release from Lake Powell and send on down through the Grand Canyon to Mead. That’s governed by the rules in the 2007 [Interim Guidelines](#), which are likely to call for a release of 9 million of acre feet of water from Mead to Powell in the coming year. The minimum legally required Powell release is 8.23 million feet, but with Powell higher than Mead, the rules have provisions to release extra to try to keep the two big storage tanks roughly in balance.

### **Lake Mead accounting**

Even with that bonus water, Mead is forecast to keep dropping, because water users downstream are still using significantly more than the system can reliably provide under hydrology like this. Here’s the math:

First, the inflow

- 9.9 million acre feet (Powell release plus side inflows)

Now the debits on Lake Mead

- 9.8 maf (AZ, CA, NV, Mexico delivery plus downstream regulation gains and losses)
- Mead evaporation loss: 0.5 maf acre feet

Balance

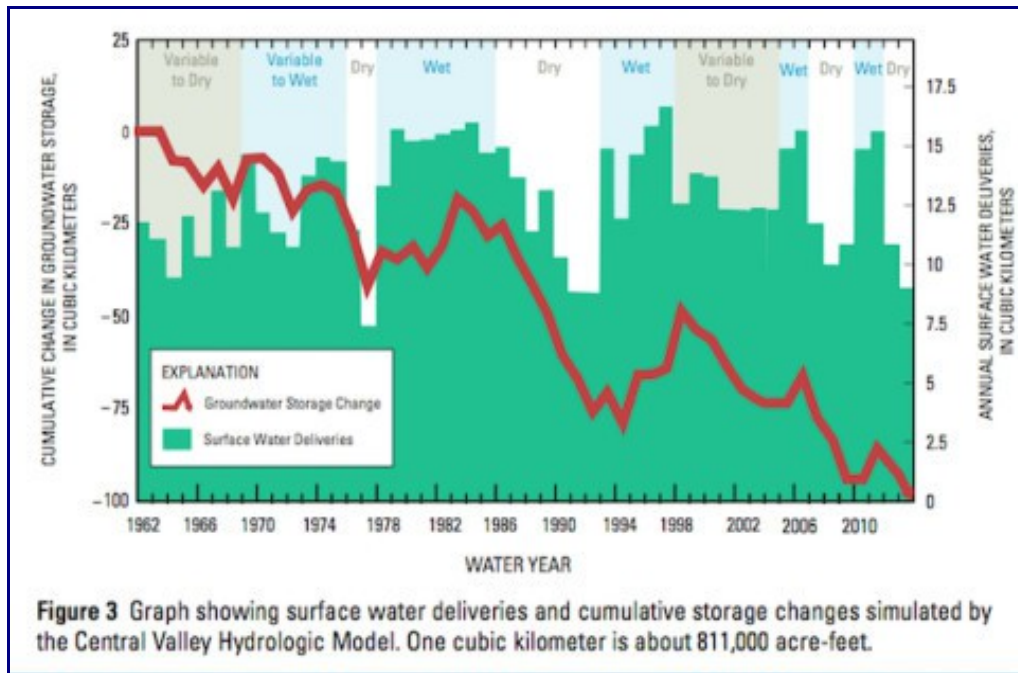
- ~ 400,000 acre foot deficit\*

## **Groundwater Reserves in the Central Valley**



An article published by several sources on October 16 and originating with Mother Jones, “Devastating Chart Shows Why El Niño Won’t Fix the Drought,” while limited by environmentalist pessimism, does provide some important findings from a recent United States Geological Survey study. Here is the link to the article, followed by the chart and some excerpts.

[http://www.wired.com/2015/10/devastating-chart-shows-why-el-nino-wont-fix-the-drought/?mbid=social\\_fb#](http://www.wired.com/2015/10/devastating-chart-shows-why-el-nino-wont-fix-the-drought/?mbid=social_fb#)



To understand it, note that in the arid Central Valley, farmers get water to irrigate their crops in two ways. The first is through massive, government-built projects that deliver melted snow from the Sierra Nevada mountains. The second is by digging wells into the ground and pumping water from the region’s ancient aquifers. In theory, the aquifer water serves as a buffer—it keeps farming humming when (as has happened the last three years) the winter snows don’t come. When the snows return, the theory goes, irrigation water flows anew through canals, and the aquifers are allowed to refill.

But as the chart shows, the Central Valley’s underground water reserves are in a state of decline that predates the current drought by decades. The red line shows the change in underground water storage since the early 1960s; the green bars show how much water entered the Central Valley each year through the irrigation projects. Note how both vary during “wet” and “dry” times.

As you’d expect, underground water storage drops during dry years, as farmers resort to the pump to make up for lost irrigation allotments, and it rises during wet years, when the irrigation projects up their contribution. The problem is, aquifer recharge during wet years never fully replaces all that was taken away during dry times—meaning that the Central Valley has surrendered a total of 100 cubic kilometers, or 81.1 million acre-feet<sup>1</sup>, of underground water since 1962.

The USGS authors note that the region’s farmers have gotten more efficient in their irrigation techniques over the past 20 years—using precisely placed drip tape, for example, instead of old techniques like flooding fields.

## Former Brownshirt Demands New Farm Wells be Banned

*The Sacramento Bee* on October 24, 2015 published an opinion column by Gerald H. Meral, “Ban new farm wells until drought ends,” promoting the usual environmentalist “solution” to the water crisis-- deny water to farmers. Meral is an old Brownshirt from the first Jerry Brown administration of the 1970s, abusing Californians as the former deputy director of the California Department of Water Resources and former deputy secretary of the California Natural Resources Agency. He will not get much space here; just enough excerpts to illustrate his proposal. But, if you are feeling a little masochistic, here is the link: <http://www.fresnobee.com/opinion/opn-columns-blogs/article41025330.html>

*But the drought continues to damage the economy and environment. Every extended dry period brings a rush to use more groundwater as rivers turn to trickles and reservoirs recede. This is understandable: Central Valley groundwater supplies are vast, and have sustained cities and farms for decades. But California needs restraints on new pumping.*

*Over-pumping causes problems for residential and community water use as well. Thousands of domestic wells have failed in recent years because they are shallower than irrigation wells.*

*Department of Water Resources Director Mark Cowin has stated: “We don't believe we can sustain this type of pumping.” The economic damage caused by sinking groundwater and surface levels must be addressed.*

*The governor should use his emergency powers under the existing drought to ban new wells in areas where groundwater pumping is causing significant economic damage.*

*The new well ban could end when the governor declares the drought over. In the meantime, the governor should encourage a more robust system of trading groundwater and surface supplies to alleviate the economic damage of constrained groundwater pumping.*

## **It is Not Just Lost Crops**

A Wall Street Journal article by David Kesmodel on October 25 reports on the damage to farmers in California occurring during this drought-- it is not just from lost crop acreage. Titled, “California’s Growers Bear Brunt of Drought Woes,” the link is here: <http://www.wsj.com/articles/californias-growers-bear-brunt-of-drought-woes-1445765403>

Some excerpts:

*The drought is having an uneven impact on California’s \$45 billion agricultural economy. Farms in coastal regions, such as the Salinas Valley, generally have a more-temperate climate and better access to water from local aquifers than those in Central California. Many growers in the parched San Joaquin Valley are spending heavily to pump groundwater from depleted aquifers.*

*Statewide, farmers this year will spend about \$590 million more to pump groundwater than the \$780 million they spend in an average year, according to the Center for Watershed Sciences at the University of California, Davis. It also estimates the drought will prompt farmers to fallow an additional 542,000 acres—a 45% increase over a typical year.*

## Farmers and the Endangered Species Act-- Some Background

Agweb published some useful background for farmers on the Endangered Species Act on October 24, titled, "Endangered Species Weigh On Ag."

<http://www.agweb.com/mobile/article/endangered-species-weigh-on-ag-naa-chris-bennett/>

*Farmers need to participate—not dodge—the process*

*When endangered species legislation first entered the halls of Congress, it was advertised as a strong measure to save threatened plants and animals. While congressional members applauded their own wisdom, President Richard Nixon signed the Endangered Species Act (ESA) into law in 1973—ripping the lid off a Pandora's box of litigation.*

*Thousands of lawsuits later, almost 1,400 species—plants, fungi, invertebrates, fish, birds, mammals, reptiles and amphibians—are listed under the ESA. "No state governor, legislature or judge can overturn an ESA listing, and failure to comply with its provisions is a violation of law," says Aubrey Bettencourt, executive director of the California Water Alliance, a statewide not-for-profit that advocates for the water needs of families, cities, businesses and farmers.*

*As part of a multigenerational farm family in Kings County, Calif., Bettencourt is keenly aware of the sweeping ESA consequences for landowners. In 1994, the Delta smelt, a 2" minnow in the Sacramento-San Joaquin River Delta, was placed under ESA protection. The low-lying Delta is the heart of California's water supply. In 2007, the Natural Resources Defense Council filed suit, claiming pumps were driving down smelt population. Using regulatory logic under ESA, the U.S. Fish and Wildlife Service (USFWS) tagged the smelt as an indicator species for overall Delta health. The recommended action was to shut down the pumps and restrict water deliveries for months at a time, Bettencourt says.*

*"Fish and animals are the direct priorities of the agencies, while dried-up farmland and people are not," she adds. "Where is the accountability in these decisions—proof the things they do actually help the species?"*

*"Take a lesson from California," Bettencourt says. "I encourage farmers to be willing participants in the ESA process. Examine the science and invest in research to fight on merit, not emotion, for the true protection of the species and the farming community. Make no mistake: The ESA is a federal silver bullet."*

## Climate Hoax Running Into Trouble

[larouchepac.com/20151027/climate-hoax-running-trouble](http://larouchepac.com/20151027/climate-hoax-running-trouble)

October 27, 2015

*"You wouldn't know it from the happy spin emanating from the Oval Office, but a Third World revolt in Bonn, Germany, this week almost derailed the Paris climate change negotiations in November. Although peace has been restored for now, it only happened by papering over this fundamental conundrum: The world can either avert climate catastrophe or seek 'climate justice,' not both."*

*That is the opening to an article by Reason Foundation's Shikha Dalmia, titled "[Why 'Climate Justice' Has India and the West at Each Other's Throats.](#)" published by The Week. Dalmia does not question the scientific fraud of the whole deal, but is angry at the implications:*

*"There are no low-carbon energy technologies available today that can sustain the economic growth*



*rates these countries need to lift their people out of abject poverty, let alone offer Western living standards at anything resembling an affordable cost. Over 300 million Indians still live below the poverty line, earning less than \$1 per day. India's per-capita energy consumption is 15 times less than the United States'. India has to keep boosting its energy use, and therefore carbon emissions for at least another two decades to eliminate dire poverty, which is why its reduction plan only commits to slashing 'emission intensity'— its emission rate as a percentage of its GDP— not emissions themselves."*

*Focusing on the monetary cost of implementing the demanded emission cuts, Dalmia notes the challenge this would represent "for a country that has yet to offer basic sanitation, transportation, and clean-water infrastructure to all its citizens."*

*Even wilder, Dalmia reports that climate hoax fanatics were debating in Bonn whether trade sanctions should be imposed on countries that refuse to kill their populations in the name of fighting carbon dioxide. She warns: "It is also conceivable that a really determined West could use the aegis of some UN-like global agency to create a standing military strike force to bomb or drone countries into compliance? Humanity's very existence would be at stake, after all. (President Al Gore, anyone?)."*