

# California Water and Infrastructure Report

Formerly, the “California Drought (and Flood) Update”



**For July 5, 2018**

**by Patrick Ruckert**

**Published weekly since July, 2014**

**An archive of all these weekly reports can be found at both links below:**

<http://www.californiadroughtupdate.org>

<https://www.facebook.com/CaliforniaDroughtUpdate>

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## *The Declaration of Independence*

*IN CONGRESS, JULY 4, 1776*

### *The unanimous Declaration of the thirteen united States of America*

*When in the Course of human events it becomes necessary for one people to dissolve the political bands which have connected them with another and to assume among the powers of the earth, the separate and equal station to which the Laws of Nature and of Nature's God entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation.*

*We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness. — That to secure these rights, Governments are instituted among Men, deriving their just powers from the consent of the governed, — That whenever any Form of Government becomes destructive of these ends, it is the Right of the People to alter or to abolish it, and to institute new Government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their Safety and Happiness. Prudence, indeed, will dictate that Governments long established should not be changed for light and transient causes; and accordingly all experience hath shewn that mankind are more disposed to suffer, while evils are sufferable than to right themselves by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations, pursuing invariably the same Object evinces a design to reduce them under absolute Despotism, it is their right, it is their duty, to throw off such Government, and to provide new*

*Guards for their future security. — Such has been the patient sufferance of these Colonies; and such is now the necessity which constrains them to alter their former Systems of Government. The history of the present King of Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute Tyranny over these States. To prove this, let Facts be submitted to a candid world.*

## **A Note To Readers**

Happy Independence Day yesterday, a day we celebrate that marks the beginning of America' greatest triumph-- independence from that most terrible of all world empires, the British.

Rather than me rambling on, I suggest that all sit down and read out loud to family and friends the full Declaration of Independence. That will cause at least some to reflect upon those universal principles stated there so eloquently.

## **In This Week's Report**

Under the title, “U.S. Drought Monitor and Related Developments,” you will find, in addition to the U.S. Drought Monitor, that the drought has come back and the remaining snowpack is fast disappearing. And then an item providing some background on the measuring of precipitation and a forecast for the remainder of the year.

“Why We Must Always Think About Water 50 Years Ahead” highlights the warnings that the Colorado River and Lake Mead are nearing a break-point where rationing will be imposed on all five states that take water from those sources. Then comes an article of land subsidence in California's Central Valley and the shrinking aquifers.

This week's report on the Oroville Dam is an article that is quite extensive on the status of construction and contains many very excellent photos.

Under the title, “Wildfire!,” you will find both a forecast for the coming months that is very alarming, and reports on the already devastating fires now burning.

Next, we have, once again, an ideological fool proposing “water markets” for dealing with California's water problems. These so-called experts really do not give a damn for anyone or anything but their God — money. Well I have a little fun with this one.

Finally, an article warning of a new and bigger than 2008 crisis proceeds our Feature for the week. That feature is links to the first two parts of an eight-part series on the fundamental principles of Lyndon LaRouche's economic thinking.

## **U.S. Drought Monitor and Related Developments**

### ***While Nobody Was Looking, the Drought Came Back***

*We can be forgiven, considering what a couple of weeks it's been — but wildfire season started early.*

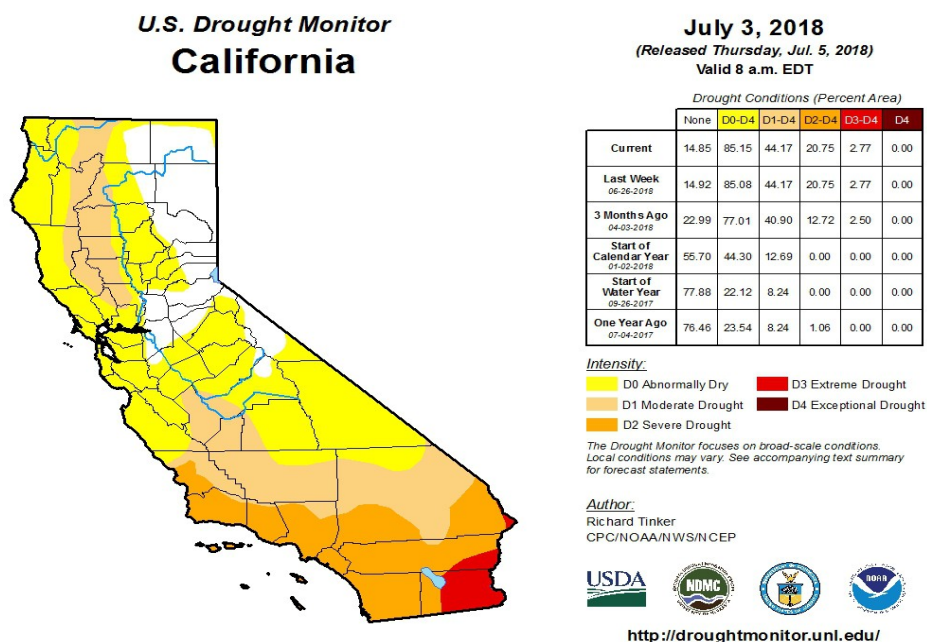
- [Peter Lawrence Kane](#)
- *Mon Jul 2nd, 2018 10:25pm*

<http://www.sfweekly.com/topstories/while-nobody-was-looking-the-drought-came-back/>

*In just the last week, the percentage of California that the U.S. government considers to be*

“abnormally dry” or in one of the four categories of drought has gone from just under 70 percent to more than 85 percent. That’s up from about 22 percent this time last year. Put another way, less than 15 percent of the state is completely free of drought, half the 30 percent figure a week ago and a fraction of the 76 percent of the state that was drought-free as recently as September 2017.

## U.S. Drought Monitor



### ***Rapid snow melt will chill rivers and lakes in Central California***

by Rich Rodriguez

Tuesday, July 3rd 2018

<https://kmpfh.com/news/local/rapid-snow-melt-will-chill-rivers-and-lakes-in-central-california>

A heat wave in the high country is going to melt what's left of the snow pack.

### ***John Lindsey: Happy New Year! 2018 rainfall season begins***

- Jun 30, 2018 Updated Jun 30, 2018

[https://santamariatimes.com/news/local/columnists/john\\_lindsey/john-lindsey-happy-new-year-rainfall-season-begins/article\\_25f84b82-2312-5902-adb1-ebf635725827.html](https://santamariatimes.com/news/local/columnists/john_lindsey/john-lindsey-happy-new-year-rainfall-season-begins/article_25f84b82-2312-5902-adb1-ebf635725827.html)

July 1 is the start of the 2018 rainfall year season. In 2015, the National Weather Service forecast offices in California changed from a “rainfall year season” to a “water year” designation.

A water year is defined by hydrologists as the 12-month period that starts Oct. 1 and continues through Sept. 30 the following year. A rainfall year season is defined as the 12-month period beginning July 1 that continues through June 30 of the subsequent year.

So, what were the rainfall totals throughout the Central Coast for the last rainfall year season that ended Saturday?

*To start, the 2017 rainfall season occurred during a weak La Nina condition that typically produces below-average rainfall. And sure enough, the 2017 rainfall season started terribly dry. In fact, average rainfall amounts at the Paso Robles Municipal Airport, Cal Poly — home of climatology for San Luis Obispo — and the Santa Maria Public Airport all dropped to approximately 27 percent of average at the end of February. The 2018 rainfall season was on track to be one of the driest on record, and optimism was fading.*

*Then spring came in like a lion when one of the most significant Atmospheric River (AR) events to hit the Central Coast since December 2010 and created moderate to heavy rainfall throughout Central California, and produced a "minor March miracle!"*

*What will this rainfall year season bring?*

*Since 1950, the National Oceanic and Atmospheric Administration (NOAA) has used sea surface temperatures (SST) in a central equatorial region of the Pacific Ocean called Nino 3.4 as the standard for classifying El Nino (warmer-than-normal SST) and La Nina (cooler-than-normal SST) events. The fortunetelling SST cycles in Nino 3.4 are categorized by the amount they deviate from the average SST. In other words, an anomaly. Last year the seawater temperatures in region Nino 3.4 were slightly cooler than normal, hence the classification by NOAA of a weak La Nina condition. The name La Nina, meaning "the girl," originates from Spanish; it's analogous to El Nino, meaning "the boy" or "the Christ child."*

*This year, the Climate Prediction Center is currently advertising a neutral condition — the infamous "El Nothing" continuing through summer. However, the chance for El Nino will increase to 50 percent during fall, and 65 percent during winter 2018-19, which is excellent news if you're hoping for increased amounts of precipitation. The most important aspect of this prediction is how strong of an El Nino event this will eventually become. Typically, along the Central Coast, the higher the classification of the El Nino event, the more rain it will create.*

*Unfortunately, most of the models and ensemble packages are advertising a weak El Nino condition, which like neutral conditions — or El Nada — typically doesn't produce any reliable seasonal rainfall predictions along the Central Coast.*

## **Why We Must Always Think About Water 50 Years Ahead**

As President John Kennedy repeatedly stated as he inaugurated water projects throughout the West during 1962-3, the responsibility of every government official must be to plan and build for the future, not for ourselves. That means to not allow what has been allowed since the death of that President--absolutely nothing has been planned, much less built in California, or virtually anywhere else in the nation that would meet that "Kennedy criteria."

The following articles highlight some of the consequences of that failure and call upon us to immediately correct our sin of omission.

### ***Risks to Lake Mead, Colorado River intensifying greatly, federal officials say***

- Tony Davis Arizona Daily Star
- Jul 2, 2018 Updated Jul 2, 2018

[https://azdailysun.com/news/risks-to-lake-mead-colorado-river-intensifying-greatly-federal-officials/article\\_d1e5ffcb-e32a-50e2-ac39-2e1fd1eb8ebc.html](https://azdailysun.com/news/risks-to-lake-mead-colorado-river-intensifying-greatly-federal-officials/article_d1e5ffcb-e32a-50e2-ac39-2e1fd1eb8ebc.html)

*TEMPE — The risks of Lake Mead dropping to catastrophically low levels have ramped up dramatically, say federal officials who came here Thursday to push for completion of a long-stalled drought plan for the Colorado River Basin.*

*At a presentation before hundreds of local and state officials, Bureau of Reclamation Commissioner Brenda Burman and a top aide warned that the risks to the lake are unacceptable. They said it's urgent that Arizona officials resolve their differences over the drought plan and get on board with six other Colorado River Basin states that are moving toward adopting one.*

*Since the seven states approved a set of guidelines for managing the river's reservoirs in 2007, the risks of Lake Mead dropping to very low levels has increased by three to six times, the bureau officials said.*

*Specifically, the bureau said:*

- Based on the river's entire historical record, there's about a 65 percent chance of Lake Mead falling below 1,075 feet — the level at which the first shortage in river water available to the CAP would occur — by 2026. Using just the last 30 years of records as a base for forecasting, that risk grows to more than 80 to 90 percent, covering a period from 2020 to 2026.*
- The risk of Mead dropping below 1,025 feet by 2026 is more than 40 percent using the bureau's "stress test" forecasts, and about 30 percent when the forecasts rely on the river's entire historical record.*
- The risk of Mead being less than 1,000 feet high by 2026 is about 20 percent under the "stress test" forecast and less than 10 percent when the river's entire historical record is used.*

*The thought of Mead dropping below 1,025 or 1,000 feet is particularly alarming to many state water officials in Arizona and elsewhere. At those levels, U.S. interior Department intervention to manage the river's reservoirs is certain.*

*At that point, nobody knows what steps Interior would take to prop up the reservoirs, but it would almost certainly make drastic cuts in water deliveries to major cities such as Tucson and Phoenix that rely on the river for drinking water via the \$4 billion Central Arizona Project.*

*On the other hand, all these risks would drop dramatically if Arizona, Nevada and California agree on a drought plan to conserve up to 1.2 million acre feet a year of river water annually over time, bureau officials predicted.*

## ***Drought may trigger state water crisis***

*by Peter Aleshire roundup editor*

*June 26, 2018*

*[https://www.paysonroundup.com/news/drought-may-trigger-state-water-crisis/article\\_b2aeb713-f2d6-5b1d-8c88-2aecec4931ce.html](https://www.paysonroundup.com/news/drought-may-trigger-state-water-crisis/article_b2aeb713-f2d6-5b1d-8c88-2aecec4931ce.html)*

*Lake Powell and Lake Mead are close to record low levels — although not quite down to the 2011 low point. Projections put them at a combined 48 percent of capacity by September — even with good monsoon rains.*

*Without an above-average winter, the giant reservoirs could drop to 44 percent by next April — very close to water rationing.*

*He noted that farming accounts for 77 percent of the water use by humans in Arizona. For instance, growers in Yuma produce almost all of the nation's water-intensive crop of lettuce in the winter, although Yuma gets an average of about 2 inches of rain annually.*

*Sabo said the Southwest would have to cut its water use by 60 percent to make the water supply sustainable in the long-term. However, Maricopa County's population grew by 24 percent from 2000 to 2010 — and projections envision a population of 7.8 million by 2030.*

*The shortfall has triggered the start of a bitter dispute between Arizona and the other six states with a right to water from the Colorado River. Arizona has failed to adopt a water management plan to protect its groundwater and help manage shortfalls on the Colorado River — provoking the ire of the other Colorado River basin states.*

*Mind you, even if the river users resolve their differences and figure out how to ration water through the drought — Arizona still has a serious “drinking problem,” according to Arizona State University researcher John Sabo.*

*Sabo calculated that to manage its resources long-term in an era of deeper, longer droughts, we would have to use no more than 40 percent of the available surface and groundwater from the Colorado River Basin. Instead, we're using 76 percent — which means we don't have enough to nurture future growth or ride out a drought.*

*The Colorado River Basin supports the populations of California, Arizona, Nevada, Utah, New Mexico, Colorado and Wyoming.*

### ***Dry wells, sinking land and fears of a global food crisis***

*Jeremy P. Jacobs, E&E News reporter Published: Monday, June 25, 2018*

*<https://www.eenews.net/greenwire/2018/06/25/stories/1060086059>*



The Friant-Kern Canal flows beside an orange grove in Tulare County, Calif. The canal carries water from Friant Dam on the San Joaquin River through the San Joaquin Valley in central California. Don Barrett/Flickr

*TULARE COUNTY, Calif. — The bottom is falling out of America's most productive farmland.*

*Literally.*

*Swaths of the San Joaquin Valley have sunk 28 feet — nearly three stories — since the 1920s, and some areas have dropped almost 3 feet in the past two years.*

*Blame it on farmers' relentless groundwater pumping. The plunder of California's aquifers is a budding environmental catastrophe that scientists warn might spark a worldwide food crisis.*

*"This is not sustainable," said Jay Famiglietti, a senior water scientist at NASA's Jet Propulsion Laboratory. "If those aquifers continue to be depleted and if we start running out of water in these big aquifer systems, the global food system is going into meltdown mode."*

*Hidden from view, groundwater accounts for 30 to 60 percent of the water that Californians use every year, depending on how much rain and snow the state receives.*

*The invention of the centrifugal pump after World War I made industrial agriculture possible in the state's mostly arid Central Valley, which produces a third of America's vegetables and two-thirds of its fruits and nuts.*

*But groundwater has never been carefully managed, experts say. Aquifers, they say, should be buffers and a backstop in California's drought-and-deluge climate.*

## **Oroville Dam Update**

### ***Kiewit Leads Phase II of Oroville Dam Spillway Repairs***

*Tue July 03, 2018 - West Edition #14  
Chuck Harvey – CEG Correspondent*

<https://www.constructionequipmentguide.com/kiewit-leads-phase-ii-of-oroville-dam-spillway-repairs/41036>



The second phase of the Oroville Dam spillway repair project will constitute the bulk of work on the lake's spillways. Construction is expected to conclude by the end of 2019. (California Department of Water Resources photo)

*California Department of Water (DWR) officials report that the second phase of construction work on the Oroville Dam spillways began on May 8.*

*The second phase will constitute the bulk of work on the lake's spillways. Construction is expected to conclude by the end of 2019.*

*As part of the second phase, general contractor Kiewit Corp. of Omaha will demolish more than 730 ft. of the main spillway's upper chute and rebuild it with steel-reinforced structural concrete; place 3 ft. of steel-reinforced structural concrete over roller-compacted concrete at the middle chute; remove roller-compacted concrete walls in the middle chute and replace them with structural concrete; hydro-blast and resurface energy dissipaters and provide new drainage systems.*

*At the emergency spillway, crews will remove the emergency embankment of stone, or rip rap, that was put in place February 2017 — pending approval from the Federal Energy Regulatory Commission and California Division of Safety of Dams. They also will finish work on a concrete cap at the underground secant pile wall; continue work on the roller compacted concrete splashpad and build a reinforcing roller-compacted concrete buttress at the base of the emergency spillway.*

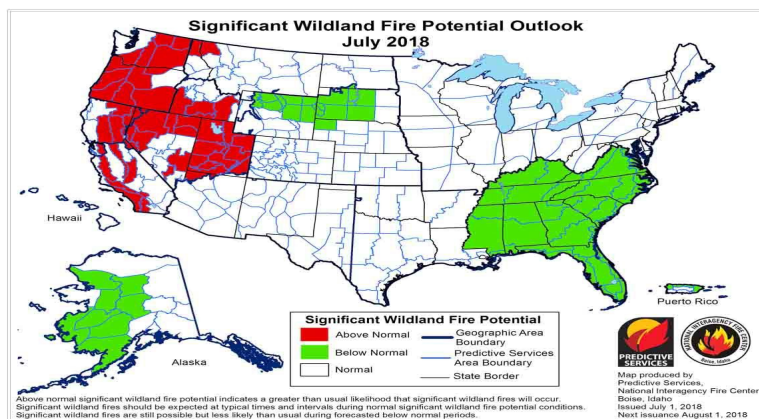
*DWR is developing a comprehensive needs assessment in coordination with the Federal Energy Regulatory Commission, the California Division of Safety of Dams, the United States Army Corps of Engineers and experts from the industry.*

*“DWR is targeting to complete the comprehensive needs assessment by the end of 2019,” said Erin Mellon, DWR spokeswoman.*

## **Wildfire!**

### ***Wildfire potential increases in California and the Northwest***

<http://wildfiretoday.com/2018/07/02/wildfire-potential-increases-in-california-and-the-northwest/>



*(Originally published at 11:55 a.m. MDT July 2, 2018)*

*On July 1 the Predictive Services section at the National Interagency Fire Center issued their Wildland Fire Potential Outlook for July through October. The data represents the cumulative forecasts of the ten Geographic Area Predictive Services Units and the National Predictive Services Unit.*

*If their analysis is correct, in July the areas with the highest potential will move from the Southwest to Washington, Oregon, Idaho, Utah, California, and northern Nevada.*

*Below are:*

- *The highlights of the NIFC narrative report for the next several months;*
- *NIFC’s monthly graphical outlooks;*
- *NOAA’s three-month temperature and precipitation forecasts; and,*
- *Drought Monitor.*



## ***Northern California wildfires are burning much earlier this summer. Here's why.***

*By Dale Kasler*

*July 02, 2018 03:52 PM*

<https://www.sacbee.com/latest-news/article214198989.html>

*You aren't imagining it: California's wildfire season really has started earlier than usual this year.*

*The state's biggest fires usually don't strike until August or later. This year, California already is besieged with two major fires, and it's the first week of July.*

*The [County and Pawnee fires](#) have burned through a combined 85,000 acres northwest of Sacramento and aren't done yet.*

*The two fires are merely a taste of what's to come, the earliest markers of what's shaping up as a particularly nasty year, fire officials and climatologists said Monday.*

*"It has been basically very dry since the beginning of April," said Paul Ullrich, a climatologist at UC Davis. "I wouldn't be surprised if the (fire) season is among the worst on record."*

*Already this year, Cal Fire has responded to 2,626 fires. That's about 260 more than at the same time a year ago, said agency spokesman Scott McLean.*

*McLean said it has gotten to the point that one fire season is bleeding into the next. "We're responding to wildland fires year round now," he said.*

*He added that the season is just getting geared up. "Southern California hasn't even lit off yet," he said. "And usually they start first, and the north follows up."*

*That could change in a matter of days: The National Weather Service on Monday warned of "potentially critical fire weather" in the Los Angeles area later this week, as temperatures hit triple digits.*

*Why has the fire season shifted dates on the calendar? The reason partially has to do with [climate change](#), said UCLA climatologist Daniel Swain. Simply put, California is getting hotter.*

*"The overriding signal is that when it's warmer, whatever vegetation that's there ... it has the potential to burn more," Swain said.*

*The situation has turned dire the past two years. A cruel combination of weather extremes — the [record rainfalls of 2017](#) followed by two summers of scorching heat — left a rich carpet of highly combustible grass and other vegetation.*

*The results have been almost predictable. Last year saw the [deadliest and costliest wildfires](#) in California history: the wine country fires, which killed 44 people in October.*

*This year, the tables are set for another difficult season.*

*Not only is there plenty of unburned vegetation left from last year's rain — known as "carryover fuel" in firefighting circles — climate change appears to be drying out the grasses and forests sooner than before.*

*Temperatures in much of California in June were as much as 2 to 3 degrees higher than usual, said Tim Brown of the Western Regional Climate Center in Reno. Last summer, California set a record for heat; temperatures were 3 degrees above the historical average.*

## ***Multiple drought-fueled wildfires are raging across at least 4 Western states***

*By Ray Sanchez, CNN*

*Updated 12:49 PM ET, Wed July 4, 2018*

<https://www.cnn.com/2018/07/03/us/western-state-wildfires/index.html>



*Firefighters try to stop a wildfire as wind drives embers across Highway 20 near Clearlake Oaks, Calif., on Sunday, July 1, 2018. (AP Photo/Noah Berger)*

*(CNN) Dozens of wildfires tore across wide swaths of Alaska, California, Colorado and other western states Wednesday, with meteorologists warning of more blazes due to strong winds, dry conditions and low humidity.*

*About 70 fires are now consuming around 630,000 acres, from Alaska -- where 19 large blazes were reported -- to California, New Mexico, Colorado and Utah, where at least six wildfires continue to burn in each state, according to the National Interagency Fire Center in Boise, Idaho. Officials say there has been a decrease in the amount of acreage burning because some fires are being contained.*

*More than 13,000 fire personnel are battling the blazes across the region, Jennifer Jones, spokeswoman for the National Interagency Fire Center told CNN.*

## ***Yolo County Fire Update: California Wildfire Burns 86,000 Acres***

*By Maria Perez On 7/5/18 at 2:11 PM*

<http://www.newsweek.com/california-wildfires-yolo-county-fire-1010207>



*Hot Shot crews from Mendocino, Calif., use backfires to help contain the County fire along Highway 129 near Lake Berryessa in Yolo County, Calif., on Tuesday, July 3. The wildfire has spread to 86,000 acres and is at 30 percent containment, fire officials said on Thursday. Randall Benton/Sacramento Bee/TN*

*The Yolo County fire in Sacramento, California, has grown to 86,000 acres, fire officials [said](#) on Thursday. The California Department of Forestry and Fire Protection (Cal Fire) said there are over 3,400 fire officials working on the fire and have contained about 30 percent of the blaze.*

*Firefighters fighting the blaze have been working aggressively to build containment along the county line, according to a statement released Thursday from Cal Fire. As the weather becomes drier and hotter as the weekend approaches, the department said there is a chance the fire could grow.*

*There are currently 309 engines, 73 hand crews, 73 dozers, 41 water tenders and 21 helicopters working to fight the blaze from spreading, Cal Fire said.*

## **Water Markets? Nah. Let's Build NAWAPA**

And here we have, once again, an ideological fool proposing “water markets” for dealing with California's water problems. Noteworthy, he does state something true, that “the state has allocated five times the amount of water available in an ordinary year.” So what would a “water market” do to alleviate or solve the fundamental problem that no matter what prices some would be able to pay, the state is desperately short of the water required for urban areas, industrial use and for agriculture? As the writer says, it would allow those who can pay the most get the water they need, and, what he does not say, to hell with those who cannot pay.

Until such idiots can lose their stupid ideological obsessions, they will continue to have nothing useful to contribute to actually solving the problem.

And, the solution, as I have said many time, is, as Presidents Franklin D. Roosevelt and John Kennedy, along with Governor Pat Brown knew and acted on, build great water projects like the North American Water and Power Alliance and dozens of nuclear-powered desalination plants. But, hey, that means the government must do it. And, of course, no ideological free-trader would accept that. Well, too bad for them, for that is what we shall do.

I include just a few excerpts from the article below. The link is there, so read it all if you like.

### ***California should turn to markets to solve its water woes***

*By Jonathan Wood, opinion contributor — 07/02/18*

<http://thehill.com/opinion/energy-environment/395103-california-should-turn-to-markets-to-solve-its-water-woes>

*Instead of doubling down on politics, the state should be agnostic about where water savings come from. If agriculture can economize more easily than urban users, great. Ditto if the reverse. Let market prices steer water conservation efforts to where they are most cost-effective, rather than dividing water users up into discrete constituencies and having them fight each other in the political and regulatory process.*

*Unfortunately, the state's arcane water laws make it difficult for competing users to bargain for water rights. Trading water is very expensive and requires time-consuming approvals from multiple government bodies.*

*Removing unnecessary barriers and streamlining the process to conserve water and transfer the savings to a higher value use could give California the nimble water market it needs to respond to the complex challenges it faces. A [recent report](#) by the Property and Environment Research Center and R*

*Street Institute proposes several reforms California could pursue, most notably giving up its obsession with controlling which types of users get which water.*

## **High On Speculation? A Sobering Moment Is Coming**

### **Corporate Debt Crash Threatens Trump's 'Recovery,' and the World**

July 2 (EIRNS)—A surprising admission appeared in the headline story of the Wall Street-oriented CNBC this afternoon: “Companies Buying Back Their Own Shares Is the Only Thing Keeping the Stock Market Afloat Right Now.” The story opened, “Stocks right now are hanging by a thread, boosted by a bonanza of corporate buying unrivaled in market history and held back by a burst in investor selling that also has set a new record.”

The wave is juiced by the large Republican tax cut that went into effect Jan. 1, and is reaching astonishing levels: \$242.1 billion in the first quarter; \$433.6 billion in the second quarter. CNBC quotes one market strategist as saying: “Corporate cash is going to find a home, and it’s either going to be in buybacks, dividends or M&A activity. Where it’s not going to be is in capex [business capital investment].... Individuals are looking at the turbulence we’ve seen this year that we had not seen last year. That creates its own sort of exit sign for investors who don’t want to deal with that.”

New reports have been issued, including by the global giant McKinsey Consulting Co. on June 28 (“Rising Corporate Debt; Peril or Promise?”), on the gigantic rise in corporate debt since the 2008 crash. McKinsey shows that the explosion of corporate debt by \$11.7 trillion has been dominated by debt growth of \$7.4 trillion in the United States and Europe—not by China’s companies’ debt increase of \$2 trillion.

Tariffs by the United States, China, Canada, Mexico, and Europe all take effect this week and are being blamed for the immediate fear of “recession.” But it is the central banks’ debt bubble and rising interest rates, not President Trump’s tariffs, which are threatening a crash.

Nonetheless, the GOP tax cut has made the debt bubble more dangerous, even while postponing its explosion and generating more economic growth in the United States this year.

In *Rolling Stone* July 2, well-known journalist Matt Taibbi calls for a financial transaction tax and the Glass-Steagall Act; his subhead is, “As the country sits atop a giant debt-bomb, measures are needed to rein in excess speculation.”

## **Feature: So, It is Time For Serious Study**

### **LaRouche's Economics in an 8-Week Course**

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<https://discover.larouhepac.com/>

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### **Class #1: On LaRouche's Discovery (June 22/23)**

[https://discover.larouchepac.com/1\\_on\\_larouche\\_s\\_discovery\\_june\\_22\\_23](https://discover.larouchepac.com/1_on_larouche_s_discovery_june_22_23)

Introduction based on the original scientific discovery made by Lyndon LaRouche during the years 1948–52, refuting the concept of entropy advocated by Norbert Wiener and developing a concept of physical economy based on a study of Heraclitus, Plato, Riemann and Georg Cantor, which he later supplemented through a study of Nicolaus of Cusa. This study led LaRouche to oppose all monetarist theories associated with the British East India Company system of Free trade, globalization and post-industrial society and to embrace the physical economic approach of Gottfried Leibniz (Society and Economy) that later became the American System of Economics of Alexander Hamilton, from his more advanced scientific basis. This class will be given by Will Wertz.

### **Class #2: Potential Relative Population Density and Energy Flux Density (June 29/30)**

[https://discover.larouchepac.com/2\\_potential\\_relative\\_population\\_density\\_and\\_energy\\_flux\\_density\\_june\\_29\\_30](https://discover.larouchepac.com/2_potential_relative_population_density_and_energy_flux_density_june_29_30)

In this class we will discuss LaRouche's concept of potential relative population density and the associated idea of the necessity of increasing the rate of increase of potential relative population density through scientific discoveries and the implementation of new technologies based on those discoveries which increase the energy flux density of production. This concept represents a scientific refutation of the British Empire push for reducing the world's population and restricting technological progress as reflected in the false ideologies of "Limits to Growth" and "Post-Industrial Society." This class will be given by Dennis Speed.