



California Water and Infrastructure Report

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

For January 24, 2019

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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“This is everything FDR dreamed about, the New Deal to put America back to work. Think of LBJ, he gave people food stamps & welfare. Donald Trump’s giving them a job. He’s got a lot of good things to talk about. News stories do not accurately cover him, should correct.”

A tweet from President Donald Trump

January 24, 2019

A Note To Readers

President Trump clearly understands the difference between a Democrat like President Franklin D. Roosevelt and his driving policy of building, developing and putting Americans to work productively, and the Democrats of the post-John Kennedy era. FDR built the greatest infrastructure projects ever, and they are still the greatest today. Projects like the Grand Coulee Dam, the Tennessee Valley Authority, rural electrification, the California Central Valley Project, and many many more, still are the backbone of the productive U.S. economy.

In this week's report

We begin the report with the weather, the snowpack, the drought and El Nino. And look at the map of

Oregon, still 100 percent in drought.

Near the top of the report this week is the Colorado River. When, not if, Lake Mead falls just seven more feet, then begins the first of a series of more and more severe cutbacks and rationing of water to 40 million people. The report, which I excerpt this week, presents the dynamic process of how and why we are now near a very serious problem.

The project to raise the height of Shasta Dam has begun preliminary construction. The dam will be raised by 18.5 feet, which will increase the amount of water that can be stored in Shasta Lake by 630,000 acre-feet, or 14 percent. The federal government, which owns the dam and the U.S. Bureau of Reclamation has begun the project, though the damn state environmentalist mentality is out to stop the project.

Sort of related is how the federal government is now rushing to repair the Whittier Narrows Dam to prevent a breach that would flood one million residents.

Under my title, "The Parasites Smell Blood," you will find a couple of stories about how, whether it is the hedge funds holding PG&E stock, or those wishing to speculate on California's water shortages, vultures, lice, maggots, magpies and other parasites from Wall Street, flock to the feast.

Nuclear power developments are reported under the title of "Infrastructure." There you will find a commentary asking why, if Democrats are so concerned about CO2, why don't they support nuclear power. The commentary is written by a Democrat. Two new laws passed by Congress and signed by the President will facilitate both procedures for moving forward with nuclear projects, and open the door more widely for exciting new nuclear technologies.

The "Feature" this week is LaRouche PAC's new proposal to the Congress, "The Way Forward," which has been delivered to every Congressional and Senate office this week. Ending the partisan insanity now can be accomplished based on the principles set forth in that document. Here is just a short quotation from that document:

"After the mid-term election results, it should have become clear to all concerned, as indeed expressed by President Donald Trump in his press conference at that time, that with the Republicans in control of the U.S. Senate and the Democrats in control of the House of Representatives, either the nation and thereby the world will suffer self-destructive inaction, as a result of an escalating attack on the Presidency or bipartisan action will need to be taken 'in order to form a more perfect union, establish justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity.'"

Drought, El Nino, Snowpack and Rain

The U.S. Drought Monitor this week should make clear to all that even days of drenching rain and many feet of snow in the Sierras does not end a drought, nor does it mean that the rest of the winter will be like the last two weeks. In fact, the forecast now is for little or no precipitation for the next month.

El Nino has its grips on the region through spring

January 22, 2019 4:15 am

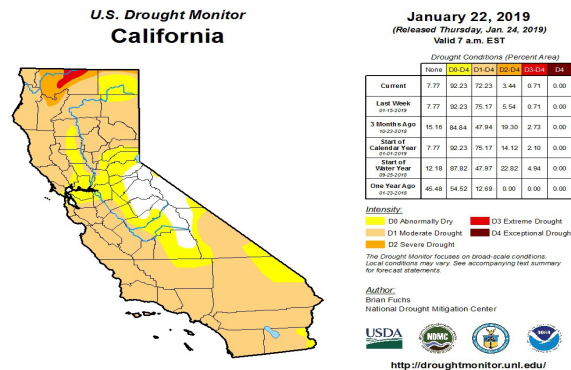
<http://www.mycolumbiabasin.com/2019/01/22/el-nino-has-its-grips-on-the-region-through-spring/>

PENDLETON, Oregon – The National Oceanic and Atmospheric Administration’s Climate Prediction Center has released the forecasts for February through April. Meteorologist Dennis Hull says it’s clear that the warmer, drier conditions of an El Nino have taken hold.

“NOAA’s Climate Prediction Center calls for above-normal temperatures and near-normal precipitation for February,” Hull said. “The spring outlook continues with the prediction of above-normal, but it’s coupled with near- to below-normal rainfall.”

The center says that drought conditions that already exist in Oregon and Washington state will persist. Meanwhile, it’s considered likely that northeastern Oregon and southeastern Washington, which are currently just categorized as abnormally dry, will return to a drought status.

U.S. Drought Monitor



Sierra snow pack is four times the size it was at this time last year

By [Amy Graff](#), SFGATE

January 22, 2019

<https://www.sfgate.com/weather/article/Sierra-snow-pack-size-percent-of-average-2019-13552288.php>

A barrage of storms at the start of January dumped impressive amounts of snow over the Sierra Nevada mountain range, pushing the statewide snow pack to 115 percent of average as of Tuesday, according to data from the [California Department of Water Resources](#).

Both the Northern Sierra and the Central Sierra, stretching from the Trinity Alps to Yosemite National Park, stand at 115 percent of average. The southern region, which includes Kings Canyon and Sequoia National Parks, is at 110 percent.

At the same time last year, the statewide snowpack was 26-percent of normal.

The Sierra snowpack is one of California's most important water sources, with its spring and summer runoff feeding rivers and reservoirs, watering crops, filling bathtubs and water glasses. Mountain snowpack provides about 30 percent of the yearly fresh water supply for California, according to NASA.

State water managers and farmers are dependent upon knowing the amount of water the snowpack holds. Their plans for the year ahead are based on the results of a snowpack survey conducted around April 1, when snow levels peak.

High-pressure ridge settled along coast keeping California dry

By [Amy Graff](#), SFGATE

January 23, 2019

<https://www.sfgate.com/weather/article/High-pressure-ridge-California-dry-weather-SF-13553172.php>

There's no sign of rain for Northern California including the San Francisco Bay Area through the end of January, meteorologists say.

A weather system known as a "high-pressure ridge" is parked along the California coast, acting like a wall and blocking Pacific storms from reaching the state.

The wet start to January, marked by one especially big storm known as an atmospheric river, [boosted precipitation totals](#) for the state. As of Jan. 21, data pulled from eight stations in the Northern Sierra Nevada indicated snowfall totals are 105 percent above average. At this same time last year, the number was much lower at 41 percent of average.

While most reservoirs aren't at capacity, many are at or near historical averages for this time of year. During heavy rainfall, reservoir managers often release water to create space for the next storm event and this is why reservoirs often aren't filled to the rim in the winter.

Dry weather could last for month or more

By [Amy Graff](#), SFGATE

January 21, 2019

<https://www.sfgate.com/weather/article/high-pressure-ridge-dry-weather-dipole-SF-13549587.php>

After more than a week of [stormy weather](#) marked by [heavy rainfall](#), the San Francisco Bay Area will see a dry spell for at least two weeks with temperatures warming up through the week and reaching the low-70s in some areas on Saturday.

"We're forecasting a ridge of high pressure to build over the West Coast that's shifting the storm track to the north and will prevent us from seeing any active weather as far as rainfall goes," says Roger Gass, a meteorologist with the National Weather Service's Monterey office. "It's looking like at least the next two weeks will be dry and there's no way of knowing what will happen after that."

Daniel Swain, a climate scientist at the University of California, Los Angeles, agrees the second half of January will be dry and writes in his [Weather West](#) blog, "There are currently indications this pattern could persist for 4 weeks or more."

Rain returns to region, yet Oregon's drought continues

By: [Kelley Bayern](#)

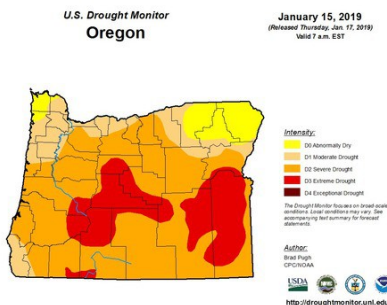
Jan 17, 2019

<https://www.koin.com/weather/rain-returns-to-region-yet-oregon-s-drought-continues/1708259124>

PORTLAND, Ore. (KOIN) - It's the start of the New Year, yet the same drought continues across Oregon. Little improvement to the statewide drought has been made over the past three months. According to the U.S. Drought Monitor, 100 percent of the state is in some category of drought. Counties in central and southeastern Oregon, making up roughly a quarter of the state, have been experiencing severe drought since the warm late-summer months.

The current status of snow pack is low for the western portion of the Cascade Mountains with snow

water equivalent levels at 58 percent of normal. “Snowpack is really the money in the bank. It’s our frozen reservoir of water that people and wildlife depend on to sustain streams throughout the spring and summer;” said NRCS snow hydrologist Julie Koeberle. Last winter also produced below average snow pack at the Mount Hood SNOTEL site. “If it had not been for mid-February return of winter, the state would have been approaching 2015 snow levels.” said Koeberle.



The effects of drought after two years of below normal snowpack and consistent statewide drought could be mean trouble heading into the year. Trouble will be felt particularly by ranchers and farmers from all around the state. “Water they rely on from rain just isn’t there,” said Oregon State University climate scientist Kathie Dello. “Two years in a row would be tough and water rights may become regulated.”

The Colorado River: This is Not a Drill

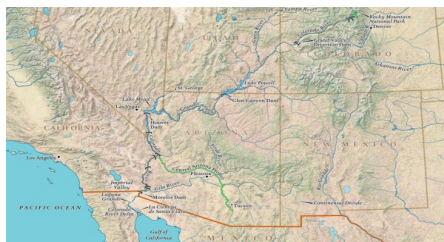
This is Part II of a two-part series from the Yale School of Forestry & Environmental Studies. I included excerpts from Part I in last week’s report. The link to Part I can be found below. The level of the water in Lake Mead is just seven feet above the level at which mandatory cutbacks and rationing begin. That may occur this year. A short excerpt from the following report should and is alarming the water managers from seven states who are responsible for providing water to 40 million people:

“There are three levels of cutbacks. When Lake Mead falls to 1,050 feet, a Tier 2 crisis occurs, and Tier 3 at 1,025. At each level, states in the lower basin have to give up more of their water. Lake Mead would have already hit 1,075 feet and a First Tier declaration if it weren’t for the fact that farmers, ranchers, and many others have been working to avoid an emergency by keeping more water in the river through conservation efforts.”

As I stated in the introduction to Part I last week, it is time for the *North American Water and Power Alliance*. It is time to think big. The item begins on page 8:

<http://www.californiadroughtupdate.org/pdf/20190117-California-Water-and-Infrastructure-Report.pdf?t=1547831806>

On the Water-Starved Colorado River, Drought Is the New Normal



The Colorado flows 1,450 miles from its source in Colorado to the southwest, ending just short of the Gulf of California. MAP BY DAVID LINDROTH

With the Southwest locked in a 19-year drought and climate change making the region increasingly drier, water managers and users along the Colorado River are facing a troubling question: Are we in a new, more arid era when there will never be enough water? [Second in a series.](#)

By [Jim Robbins](#) / [Photography by Ted Wood](#) • January 22, 2019

Published at the [Yale School of Forestry & Environmental Studies](#)

<https://e360.yale.edu/features/on-the-water-starved-colorado-river-drought-is-the-new-normal>

The planning was that of the states that share the water of the Colorado River. Worried that a burgeoning California would take most of the water before it was fairly divvied up, representatives from the other Colorado River Basin states, presided over by U.S. Secretary of Commerce Herbert Hoover, came together in 1922 to develop an equitable apportionment. They looked at flow measurements and figured that the river contained an average of 15 million acre-feet. They divided the Colorado River states into two divisions – the upper basin and the lower basin, with the dividing line in northern Arizona near the Utah border. The upper basin states — Utah, Wyoming, Colorado, and New Mexico — agreed not to take more than a total of 7.5 million acre-feet and to allow the other half to flow south to the lower basin. The agreement they signed was called the [1922 Colorado River Compact](#), also known as the Law of the River.



After two decades of drought, Lake Mead in Nevada is just 40 percent full. Ted Wood

The 1922 compact, though, is based on a premise that the tree rings in the University of Arizona lab now show is false. The river’s long-term average flow is [about 12 to 15 million acre-feet](#), in a good year. Meanwhile, the lower basin states — Arizona, California, and Nevada — use 7.5 million acre-feet, and in 1922 no one factored in evaporative losses from the desert sun at the yet-unbuilt Lake Mead reservoir, which amount to another 1.2 million acre-feet, or the water taken up by plants. Nor did anyone factor in a subsequent 1944 treaty that requires the United States to provide 1.5 million acre-feet to Mexico. A conservative estimate on how much Colorado River water is actually used is 20 million acre-feet.

This over-appropriation is problem enough, but in recent years the river’s flow has been dwindling. The region is locked in a [19-year-long drought](#), the [most severe in 1,250 years](#). And it may continue much longer. The tree ring data shows that there [have been numerous](#) multi-decadal or mega-droughts in the basin in the last 1,000 years. The prospect that drought could be the new normal for the region is creating a good deal of anxiety along the Colorado.

Never has the question of “what will the winter be like?” loomed larger than it does this year in the Colorado River Basin. If it is anything like last year (when about two-thirds of the usual snow fell) and many other low snow years since 2000, it will trigger the [first emergency declaration](#) in the basin, which could force states to deal with cutbacks in the water they are appropriated. And even if it is a big snow year, it will likely only delay what now seems inevitable.

The last time Lake Mead was full was 1983. Since then it has slowly declined. It is now 40 percent full:

1,082 feet above sea level. It may never be full again, experts say. If it drops 7 feet, to 1,075 feet, it will trigger the first Tier 1 water cutbacks. A flyover reveals a giant white ring all the way around the lake's 112-mile-long perimeter, dramatically showing how far water levels have dropped.

There are [*three levels of cutbacks*](#). When Lake Mead falls to 1,050 feet, a Tier 2 crisis occurs, and Tier 3 at 1,025. At each level, states in the lower basin have to give up more of their water. Lake Mead would have already hit 1,075 feet and a First Tier declaration if it weren't for the fact that farmers, ranchers, and many others [*have been working*](#) to avoid an emergency by keeping more water in the river through conservation efforts. For example, in 2017, state, federal, municipal, and private entities funded [*the purchase of*](#) 40,000 acre-feet from the Gila River Indian Community to be left in Lake Mead in perpetuity as part of a system conservation agreement.

Last August, the U.S. Bureau of Reclamation issued a report on the water future of the region. The agency's predictions were sobering. By May of this year, the bureau forecast the level will dip just below 1,075 feet, and at the beginning of 2020, the level is expected to drop to 1,070. By the summer of 2020, the prediction is 1,050 feet, almost Tier 2. If these predictions come true, users will have to begin giving up their water allotments, starting with the most junior.

If water levels continue to drop, sinking below 1,050 feet, Hoover Dam — which impounds Lake Mead and provides power to millions of people in Southern California, Nevada, and Arizona — will stop generating electricity, as water levels will be too low to flow through it. And should Lake Mead keep dropping all the way to 895 feet, it will fall below the level at which water can be piped out — the dreaded "[*dead pool*](#)." Moreover, because Lake Mead is funnel-shaped, the lower it gets the faster it drops. At some point there is the likelihood that the lower basin will force the upper basin to send water to meet its obligations — a compact call — something that's never happened before.

Here is Part I:

The West's Great River Hits Its Limits: Will the Colorado Run Dry?

Crisis on the Colorado: Part I

<https://e360.yale.edu/features/the-west-s-great-river-hits-its-limits-will-the-colorado-run-dry>

As the Man Said, “At Least They Are Doing Something”

Yes, doing something is better than nothing, as long as you are also doing what is required. And that is, as I always say, think big, like President Franklin D. Roosevelt did when he initiated the Central Valley Project, of which Shasta Dam is the center-piece. So it is with the raising of Shasta Dam by 18.5 feet, which will increase the amount of water that can be stored in Shasta Lake by 630,000 acre-feet, or 14 percent. The federal government, which owns the dam and the U.S. Bureau of Reclamation has begun the project, though the damn state environmentalist mentality is out to stop the project. The first article below focuses on that problem. The second article below focuses on the project itself.

Shasta Dam raising project runs into legal, congressional roadblocks

By [*Damon Arthur*](#),

Redding Record Searchlight Published

Jan. 17, 2019

<https://www.redding.com/story/news/2019/01/17/shasta-dam-raising-project-runs-into-legal-congressional-roadblocks/2585338002/>

At least one state agency has indicated it will not issue necessary permits to allow federal officials and a Fresno-based water district to begin construction to raise the height of Shasta Dam.

In addition to facing opposition from the state, the project could also face fresh hurdles from Congress, which this year came under control of Democrats.

In a letter to the Fresno-based Westlands Water District, the State Water Resources Control Board says raising the height of Shasta Dam would violate state law.

The letter refers to a law that prohibits state or local agencies from participating in planning for projects that “could have an adverse effect on the free-flowing condition of the McCloud River, or on its wild trout fishery.”



The U.S. Bureau of Reclamation, which operates Shasta Dam, has proposed raising the height of the dam 18.5 feet. (Photo: Record Searchlight photo)

The U.S. Bureau of Reclamation wants to raise the height of the dam 18½ feet, which would increase the amount of water that could be held in Lake Shasta by about 14 percent.

Shasta Dam proposal: On-again, off-again

The proposal has been on-again, off-again for decades, but last year Congress approved \$20 million for preconstruction and design work on the project. Designs were drawn up and [core samples were taken from the concrete in the dam](#) to see if it could withstand the extra weight of a taller dam.

The bureau has said it will only pay 50 percent of the \$1.4 billion project. The rest of the money would have to be raised from “nonfederal” partners, the bureau said.

The Westlands Water District, which provides water to farmers in the western San Joaquin Valley, has stepped up as one partner. Last year, [the district began an environmental review of the project and asked the public and various government agencies for comments](#) to help focus the direction of its study.

Westlands and bureau officials have said they plan to complete environmental review, obtain full funding from nonfederal partners and get the necessary federal and state permits in time to issue the first construction contracts by the end of this year.

Erin Curtis, a spokeswoman for the bureau, said the agency officials feel they can persuade the state the dam raise is not against the law.

Work Begins on \$1.5B Shasta Dam Raising

January 16, 2019 - West Edition #2

Lori Tobias – CEG Correspondent

<https://www.constructionequipmentguide.com/work-begins-on-15b-shasta-dam-raising/43437>

*Twenty million dollars of pre-construction work is under way at the **Shasta Dam** and reservoir in advance of a \$1.5 billion project to raise the dam 18.5 ft. Shasta Dam is the largest reservoir in*

California and second largest in the United States after Grand Cooley (sic).

Talks to raise the dam have been ongoing since the 1980s. The feasibility and environmental impact statement were sent to Congress in 2015, with approval for the project and \$20 million for the preliminary work coming in March 2018 from the Water Infrastructure for Improvements to the Nation (WIIN) Act.

According to a Reclamation Fact Sheet, enlarging the reservoir will:

- Provide an additional 630,000 acre-feet of stored water for the environment and for water users.*
- Improve water supply reliability for agriculture, municipal and industrial, and environmental uses.*
- Reduce flood damage.*
- Improve water temperatures and water quality in the Sacramento River below the dam for anadromous fish survival.*

Crews currently are performing exploratory drilling and concrete coring to gather strength data for designers to complete the design, said Don Bader, area manager of Northern California Area Office for Reclamation. The office also is working with stakeholders on the reservoir who will be impacted and conducting environmental assessments.

The project will require moving homes, a railroad and a marina, with the dam scheduled to be finished and storing water by February 2024.

The dam is currently 602-ft. high and 883 ft. thick. The raise will add two stories to the existing structure and increase the water storage from 4.5 million-acre-ft. to just over 5 million acre ft.

"It took six years, nine months for construction. It was constructed during the recovery of the Great Depression and through WWII. It employed 4,700 people, who worked around the clock, day shift, swing shift and night shift."

Shasta Dam is considered the "keystone" of the Central Valley Project, a 500-mi. area that starts at Shasta and runs all the way to Bakersfield.



The Shasta Dam was constructed from 1938 to 1945, Harral said.

"It is one of the largest water storage and transport systems in the entire world," Harral said. "The CVP comprises 20 reservoirs and 500 mi. of canals. It provides water to use for irrigation for more than three million acres of agricultural land and the reservoir stores almost 12-million-acre-ft. of water.

"The whole reason for the CVP is basically the hydraulic conditions of California. They vary greatly from year to year, season to season and place to place. Northern California, where Shasta is located, gets the majority of the state's precipitation and we get it during the winter. But most of the central and

southern portions get it in the spring and summer and they get snowmelt. Shasta is probably one of the rarest reservoirs we own because 90 percent of what fills Shasta Lake is the rainfall and 10 percent is snowmelt. All our other dams are snowmelt.

"The CVP is the seventh largest economy in the world because of the agricultural economy. We're bringing more economy in California than entire countries. Just California itself. The premise was to take the rain and flooding and send it to where it is needed. The main thing, the dam was constructed first and foremost for flood control, water storage, and fish and wildlife, which is now at the top. It's also for hydroelectric power, drinking water, municipal and industrial use and navigation of and recreation on the Sacramento River."

When It Comes To Safety, Money Is Irrelevant

Not quite the disaster of Oroville Dam, but Like Oroville Dam, when something serious must be done, we can do it.

Feds rush Whittier Narrows Dam fix to prevent breach that would flood 1M residents from Pico Rivera to Long Beach

By [Steve Scauzillo](#)

San Gabriel Valley Tribune

January 17, 2019

<https://www.pasadenastarnews.com/2019/01/17/feds-rush-whittier-narrows-dam-fix-to-prevent-breach-that-would-flood-1m-residents-from-pico-rivera-to-long-beach/>

Because of the potential of massive flooding, the Army Corps of Engineers is rushing to begin a \$500-million repair project for Whittier Narrows Dam, classified as the highest priority of any of the 13 "high risk" dams in the country.

Nearly three years ago, the Army Corps of Engineers [elevated the risk](#) of failure from "high urgency" to "very high urgency" after a re-inspection revealed a greater threat of erosion and breach that would cause massive downstream flooding to one million Southern California residents in the event of a severe storm event.

Inspectors also were alerted to the increased likelihood of spillway gates opening by themselves without prompting.

The possibility of an accidental release caused the Corps to order emergency repair work on gates and locks that began last year and is expected to be completed by the end of this year, said George Sunny, project manager, during a public meeting Wednesday in Alhambra.

An aerial view of the Whittier Narrows Dam in the area between Montebello and Pico Rivera. (courtesy of Army Corps of Engineers)

Work on dam gates underway

The most severe flooding would occur during a 1 in 10,000-year storm, said Col. Aaron Barta, commander of the Los Angeles District.

However, erosion is already occurring, weakening the 62-year-old dam, he said. Some improvements are needed to prevent further malfunctions and possible seepage during lesser events, such as a 100-year storm, Sunny said.

“The communities along these rivers are at risk because of these large flows that happen during rare (storm) events,” Sunny said.

If a storm were to bring the reservoir to its capacity, then the water would overflow the concrete spillway and send up to 276,000 cubic feet per second of water downstream, overflowing the San Gabriel and Rio Hondo river banks and affecting the communities of: Artesia, Bell Gardens, Bellflower, Carson, Cerritos, Commerce, Compton, Cypress, Downey, Hawaiian Gardens, La Palma, Lakewood, Long Beach, Lynwood, Montebello, Norwalk, Paramount, Pico Rivera, Rossmoor, Santa Fe Springs, Seal Beach, South Gate and Whittier.

High priority

The final Environmental Impact Statement is expected to be released in May, with a Record of Decision published in June. This would complete the environmental review and allow for the project design, he said, with construction starting in 2021. Completion is expected in 2025.

The Parasites Smell Blood

Whether it is the hedge funds holding PG&E stock, or those wishing to speculate on California's water shortages, vultures, lice, maggots, magpies and other parasites from Wall Street, flock to the feast.

Tens of millions of people will lose money or face added costs

by Sean Williams

([TMFUltraLong](#))

Jan 18, 2019 at 9:21AM

<https://www.fool.com/investing/2019/01/18/pges-bankruptcy-will-be-costlier-than-you-realize.aspx>

Nothing in the business world can be taken for granted.

***Sears Holdings**, once the greatest retailer in the U.S., filed for bankruptcy protection in 2018 and is just a [stone's throw away from possible liquidation](#). Washington Mutual, a savings and loan powerhouse, succumbed to the pressures of the financial crisis and sought bankruptcy protection in 2008. And WorldCom, once one of the largest telecommunications providers in the U.S., sought bankruptcy protection in 2002.*

*The list of brand-name companies who aren't or weren't assured of tomorrow is a mile long -- and it may soon have another addition: California gas and electric utility **PG&E** ([NYSE:PCG](#)).*

PG&Eek! Facing massive claims, a bankruptcy filing is imminent

PG&E, which had a market cap of around \$35 billion as recently as August 2017 but has lost around 90% of its value, announced in a filing on Monday, Jan. 14, that it [plans to file for bankruptcy protection](#) on Jan. 29. What could bring such a presumably steady and cash flow-positive business model that relies on electricity and natural gas sales to its knees? The answer lies in culpability.

Nasdaq launches California water pricing index

January 14, 2019

<https://waterfm.com/nasdaq-launches-california-water-pricing-index/>

Nasdaq, along with Veles Water and WestWater Research, has announced the launch of the Nasdaq

Veles California Water Index (NQH2O), the first of its kind water index that benchmarks the price of water in a way that supports price discovery and enables the creation of a tradable financial instrument.

While existing water indexes track companies active in the extraction and delivery of water, the Nasdaq Veles California Water Index sets a weekly rate for the price of water in California, enabling important price discovery and the launch of financial instruments. The index is calculated weekly, using a proprietary water index methodology developed by Nasdaq and Veles Water.

Key points on the [Nasdaq Veles California Water Index](#):

- *Value is based on the volume-weighted average of the prevailing prices in five specific California water markets*
- *Prices adjusted for market-specific pricing factors specific to each of the eligible markets and transactions*
- *Pricing algorithm provides a benchmark price for water transactions across California.*

“Water is our most important commodity and until now, there were no financial risk management instruments available in the global financial markets. We see the Nasdaq Veles California Water Index as an important first step to understanding water as a commodity, which means a more transparent and accessible marketplace for all,” said Lance Coogan, CEO of Veles Water. “Our collaboration with Nasdaq and WestWater Research will yield meaningful results for the entire financial ecosystem.”

Infrastructure

Nuclear power is the focus this week, with first a commentary by Michael Shellenberger, who was a Democratic candidate for California governor last year. The focus of his campaign was nuclear power and the important role it can play in combating climate change. The second item is a report on two new federal laws facilitating nuclear power development and opening up a smoother path to new nuclear technologies.

If Progressive Democrats Care So Much About The Climate, Why Are They Trying to Kill Nuclear Power?

[Michael Shellenberger](#) Contributor

Jan 17, 2019

https://www.forbes.com/sites/michaelshellenberger/2019/01/17/if-progressive-democrats-care-so-much-about-the-climate-why-are-they-trying-to-kill-nuclear-power/?fbclid=IwAR3N34jTxjG-DaSZ6koJBaSWxU-GHdj35e298WPzqcFCqAqRxs_1PJ3wt18#34006640588d

Since taking office earlier this month, Congressperson Alexandria Ocasio-Cortez (D-New York) has captured the public imagination with her proposal for a “Green New Deal” to create millions of good jobs while accelerating the transition to clean energy.

Now, a [debate](#) has broken out among environmentalists and Democrats over whether a Green New Deal will include or exclude nuclear energy.

Ocasio-Cortez, 29, says “It’s not something that we’ve just ruled out” while her colleague and Green New Deal supporter, Chellie Pingree, 63, (D-Maine), [says](#) “I think on nuclear energy, we all have a

general resistance to it,” and pointed to the 2011 accident in Fukushima, Japan, and nuclear waste. Pingree is not alone. Progressive heavyweights like [Sen. Bernie Sanders](#), 77, (I-VT) and [Sen. Ed Markey](#), 72, (D-MA), are vehemently anti-nuclear and have supported closing nuclear plants in their home states.

They are backed by Democratic mega-donors like Tom Steyer, 61, who made his fortune investing in coal, natural gas, and renewables, and [financed](#) a failed effort to close a large nuclear plant in Arizona.

Indeed, from [Illinois](#) and [New York](#) to [South Korea](#) and [Taiwan](#) to [France](#) and [Germany](#), progressive politicians ostensibly committed to aggressive action on climate change have sought to shut down nuclear plants, which would be replaced almost entirely by fossil fuels.

What gives? Are nuclear plants really so dangerous? Or is something else going on?

The Truth About Nuclear Danger

A decade ago, when I was [rethinking my views about nuclear energy](#), I read the United Nations [scientific reports](#) on Chernobyl and was shocked.

As an anti-nuclear activist, I had been told that the accident had killed [one million people](#).

But scientists reporting to the U.N. [found](#) that a total of 28 people who responded to the accident died from acute radiation syndrome within a few months, and concluded that around 160 people will eventually die from thyroid cancer over their lifetimes.

That's it. There was no increase in any other cancer rates — including among the firefighters and “liquidators” who cleaned up the accident.

President Signs Pro-Nuclear Legislation

[James Conca](#) Contributor

January 24, 2019

<https://www.forbes.com/sites/jamesconca/2019/01/24/president-signs-pro-nuclear-legislation/#63e0d89e3e7e>

Two bipartisan pieces of [legislation modernizing America's nuclear future](#) have recently become law. The Nuclear Energy Innovation and Modernization Act (NEIMA) directs the Nuclear Regulatory Commission to make regulations move more quickly with respect to new nuclear reactors and to establish a better and faster licensing structure for advanced [nuclear reactors](#). It was [signed by the President](#) and became law last week on January 14th.

The 361 to 10 vote to approve in the House indicated a pretty high level of bipartisanship, as did the unanimous consent with a voice vote in the Senate.

NEIMA also imposes a cap on the NRC's annual fees for existing reactors, with adjustments for inflation, to ensure the operating fleet is not unjustly impacted as reactors go offline.

The other law is the [Nuclear Energy Innovation Capabilities Act](#) (NEICA) that became law last September. NEICA updates the mission and objectives of the Department of Energy's civilian nuclear energy programs, particularly supporting the deployment of advanced reactors and developing a reactor-based fast neutron source for the testing of advanced reactor fuels and materials.

“There are some truly transformative advanced nuclear technologies being developed in America right now and this bill just reinforces this Administration's continued efforts to revitalize the nuclear industry,” said Ed McGinnis, Principal Deputy Assistant Secretary for the Office of Nuclear Energy.

Indeed, the latest designs for nuclear energy are pretty cool – [small modular reactors](#), [molten salt reactors](#) using both uranium and thorium, fast reactors like [Bill Gates is designing](#), [high-temperature reactors](#), and even [fusion reactors](#), none of which can melt-down and all of which can load-follow renewables as well as natural gas can.

New 5-part Class Series

The Creative Powers of the Human Mind Reflect a Principle of the Universe as a Whole

Class #1: How You Think the Universe Works is How You Behave

January 5, 2019

[https://www.youtube.com/watch?](https://www.youtube.com/watch?v=ljdhX7d0anI&fbclid=IwAR0azdwZuKokR2ttwKGWkOdsRYH7YPH4V2jbW9qgdV8w2cWyf8XBFN3i3o)

[v=ljdhX7d0anI&fbclid=IwAR0azdwZuKokR2ttwKGWkOdsRYH7YPH4V2jbW9qgdV8w2cWyf8XBFN3i3o](https://www.youtube.com/watch?v=ljdhX7d0anI&fbclid=IwAR0azdwZuKokR2ttwKGWkOdsRYH7YPH4V2jbW9qgdV8w2cWyf8XBFN3i3o)

Class #2: Science — not Mathematics! — is Key to the Economy

January 12, 2019

[https://discover.larouhepac.com/2019_nbw_class_2?](https://discover.larouhepac.com/2019_nbw_class_2?utm_campaign=2019_nbw_2_recap&utm_medium=email&utm_source=larouhepac)

[utm_campaign=2019_nbw_2_recap&utm_medium=email&utm_source=larouhepac](https://discover.larouhepac.com/2019_nbw_class_2?utm_campaign=2019_nbw_2_recap&utm_medium=email&utm_source=larouhepac)

Class #3: Why Do We Need Nation-States?

January 19, 2019

https://discover.larouhepac.com/2019_nbw_class_3

Feature

The following is an excerpt from a LaRouche PAC proposal presented to every office of both the House and the Senate this week. The intent, as the introduction stresses, is to provide the policy required to overcome the insane partisan paralysis that now grips the government. I urge you to read the full document found in the link below.

The Way Forward

<https://larouhepac.com/sites/default/files/20190115-the%20way%20forward-updated.pdf>

A proposed basis for bipartisan agreement and action on domestic and international economic policy

After the mid-term election results, it should have become clear to all concerned, as indeed expressed by President Donald Trump in his press conference at that time, that with the Republicans in control of the U.S. Senate and the Democrats in control of the House of Representatives, either the nation and thereby the world will suffer self-destructive inaction, as a result of an escalating attack on the Presidency or bipartisan action will need to be taken “in order to form a more perfect union, establish justice, insure domestic tranquility, provide for the common defense, promote the general welfare, and

secure the blessings of liberty to ourselves and our posterity.” Only the latter course can serve the interests of the citizens of this nation of ours and the interest of humanity as a whole. Such bipartisan action, however, will not succeed if it is merely based on practical compromise and horse trading. It must be based on principle, the principle established in the U.S. Constitution and reflected in the economic principles of the American System of Economics espoused by Alexander Hamilton and implemented in the best moments of the history of both the Republican Party under Abraham Lincoln and the Democratic Party under Franklin D. Roosevelt.

A New Bretton Woods System

Besides the domestic actions indicated above, there is also an urgent need for action on the international policy front. The President is clearly committed to the principle of national sovereignty and opposed to globalization; he has expressed his desire to improve relations with Russia and China; but he has not yet addressed the need for a New Bretton Woods system, as part of his economic agenda.

And yet the greatest obstacle to ensuring the full economic revival of our nation, and ensuring world peace based on the economic development of the entire planet is the fact that on Aug. 15, 1971, President Nixon abandoned the Bretton Woods system, including fixed exchange rates and the gold reserve system, all introduced by Franklin Roosevelt before he died. The Bretton Woods system, like the Glass Steagall act, was based on American System economic methods, as opposed to the British System imperial methods which were put forward by John Maynard Keynes, and which were rejected by Roosevelt.

The principles, upon which such a system must be based, are as follows:

1. All forms of imperialism, including so-called globalist institutions, must be rejected. Instead, the unconditional sovereignty of each and all nation-states must be adhered to. Furthermore cooperation among sovereign nation-states must be facilitated to the effect of promoting unlimited opportunities to participate in the benefits of technological progress, to the mutual benefit of each and all.
2. Contrary to the policy of outsourcing to take advantage of cheap labor, the progress of the productive powers of labor throughout the planet must be regarded as in the vital strategic interests of each and all.
3. Technology is understood to be the indispensable means not only for increasing the potential relative population-density of societies, but as also indispensable to maintaining even any present level of population potential.
4. The general advancement of the productive powers of labor in all sovereign states, most emphatically so-called developing nations, requires global emphasis on: a) increasing globally the percentiles of the labor force employed in scientific research and related functions of research and development; b) increasing the absolute and relative scales of capital-goods production and also the rate of turnover in capital-goods production; and c) combining these two factors to accelerate technological progress in capital goods outputs.
5. High rates of export of such capital-goods output to meet the needs of developing nations are indispensable for the general development of so-called developing nations: Our common goal, and our common interest, is to promote both the general welfare and promote preconditions of durable peace.
6. By supplying increased amounts of high-technology capital goods to developing nations, the exporting economies foster increased rates of turnover in their own most advanced capital-goods sectors of production. As a by-product of such increased rates of turnover in that sub-sector of the exporting nation's production, the rate of improvement of technology in such categories of goods is increased, with great benefits to the internal economy of the exporting nation.

7. The import of such advanced capital goods increases the productive powers of labor in the economy of the importing nation. This enables the importing nation to produce its goods at a lower average social cost, and enables it to provide better-quality and cheaper goods, as goods of payment to the nations exporting capital goods.

8. The only equitable and workable relations in financing world trade among sovereign states with different economic and social systems is a system of credit based on fixed parities of national currencies, parities fixed by aid of a gold-reserve monetary order among sovereign nation-states.

9. To prevent a gold-reserve system of fixed parities from becoming subject to disabling inflationary spirals, it is necessary to limit the extension of credit within the monetary system to “hard-commodity” categories of lending for import and export of physical goods.

The Choice before Us

We are at a punctum saliens in world history. The issue before us is: Will we act on principle in behalf of the people of the United States and our posterity or will we be a dupe of a foreign, British plot against the President of the United States?

Now is the time to come together to forge a future we can be proud of. Are you willing to step back, reflect and then act on this proposal?

In his lecture on Universal History, the German poet Friedrich Schiller wrote that in contrast to the bread-fed scholar, the philosophical mind “has always loved truth more than his system, and he will gladly exchange the old insufficient form for a new one, more beautiful. Indeed, if no blow from the outside shatters his edifice of ideas, he himself will be the first to tear it apart, discontented, to reestablish it more perfected.”

From 1618 to 1648, Europe was torn asunder by the Thirty Years War. That war was only ended by the Treaty of Westphalia. The operative principle of that treaty was that each party must further the “advantage, honor and benefit of the other.”

Article II of the Treaty stipulates that “On both sides, all should be forever forgotten and forgiven.... [The fact that] each and every one, from one side and the other, both before and during the war, committed insults, violent acts, hostilities, damages, and injuries, without regard of persons or outcomes, should be completely put aside, so that everything, whatever one could demand from another under his name, will be forgotten to eternity.”

We do not have to tear ourselves asunder as a nation. Instead we can create a bright future for our grandchildren and for other’s grandchildren throughout the world.