California Water and Infrastructure Report

For February 6, 2020

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

patruckert@hotmail.com

"In reaffirming our heritage as a free nation, we must remember that America has always been a frontier nation. Now we must embrace the next frontier, America's manifest destiny in the stars. I am asking Congress to fully fund the Artemis program to ensure that the next man and the first woman on the Moon will be American astronauts — using this as a launching pad to ensure that America is the first nation to plant its flag on Mars."

President Donald Trump, State of the Union

A Note To Readers

President Trump made a heartfelt call for the full funding of ***Project Artemis*** in his State of the Union address on Tuesday. An article on that, and more, can be found below, under the section titled, "Onward to the Moon and Mars."

The **Feature** this week is Part II of the series on "Rebuilding the U.S. Economy," with this week's installment on restoring the Glass-Steagall banking law as the first step in doing so.

In the rest of this week's report:

January has been very dry in California, with little precipitation, a snowpack that is well below the average for this time of the year, and a general drying out of the state.

Under "The California Water Wars, Again," we have the governor's policy announcement-- full of platitudes, but nothing of thinking big, as usual. Then an update on the Groundwater Sustainability Plan from the DWR. And finally, a report on legislation to fix some of the damaged water infrastructure from the subsidence problem.

Continuing the war between PG&E and governor Newsom, PG&E has submitted a new plan to exit bankruptcy, while a legislator has introduced a bill for the state to take over the company.

Our "Real Economy" report this week features several articles. First is the statistics showing that the ongoing U.S. industry slowdown continues. That is followed by a report on Boeing and the shut down of many of its suppliers. One more report follows: "Why Life Expectancy in the United States Is Lower Than Cuba or Slovenia."

Two articles can be found in the section mentioned above, "Onward to the Moon and Mars."

We conclude with the **Feature**: "Rebuilding the U.S. Economy."

Now It Is Dry; Drought Ahead?

A few articles reporting on the very dry January, the declining snowpack and how the state is drying out.

AccuWeather Special Report: 2020 US Spring Forecast

February 05, 2020 https://lcvalley.dailyfly.com/Home/ArtMID/1352/ArticleID/54563/AccuWeather-Special-Report-2020-US-Spring-Forecast

***AccuWeather Global Weather Center –** The wait is over. For those hoping to thaw out from winter's chill, AccuWeather's annual spring forecast is here. Though Punxsutawney Phil recently declared the end of winter, AccuWeather meteorologists are calling for a delayed start to the season across much of the United States.*

The season will be split in the West as some areas will experience a prolonged winter season and others may seemingly skip the season altogether and jump ahead to summer.

West

March and April will remain active across the central and eastern Rockies this year, providing both regions with mountain snow and rainfall in the valleys.

While the Northwest also had a good season, temperatures rising quickly in the springtime may lead to the snowpack diminishing faster than normal and additional flooding around streams and river.

Temperatures will also rise quickly in Southern California, where dry conditions will dominate.

"There are some drought concerns this spring, especially for Southern California," Pastelok said. "If we don't start to see any precipitation here on the back end of the winter season, Southern California will get drier much quicker than expected."

Overall, much of the West will experience above-normal temperatures this spring, with the exception of the central and northern Rockies.

Declining Sierra Nevada snowpack levels potentially impacting state water supply

2020 is off to a dry start.

Feb 4, 2020 5:14 PM
By: Stephanie Lin
https://www.actionnewsnow.com/content/news/Sierra-Nevada-snowpack-de-567571741.html

Sierra Nevada snowpack declining after dry January

Roughly one-third of California's water supply comes from snow, which is 72% of historic average

By [Paul Rogers] | Bay Area News Group
January 30, 2020

https://www.dailydemocrat.com/2020/01/30/sierra-nevada-snowpack-declining-after-dry-january-low-rain/

All that sunny, dry weather in January is beginning to take a toll on California's water supply.

As of Thursday, the statewide Sierra Nevada snowpack — a major source of water for cities and farms across the state — stood at 72% of its historical average for that date, down from 90% a month ago.

While concerning, experts say it's no time to panic and not a sign that the state is necessarily headed toward a drought. California still has two more months of winter weather ahead. And many of the state's biggest reservoirs are currently at or near their historic averages due to wet conditions last year that filled them.

By comparison, a year ago, on Jan. 31, 2019, the statewide Sierra snowpack was at exactly 100% of normal. But after multiple atmospheric river storms — very moist systems from the Pacific commonly known as "Pineapple Express" storms — hit the West Coast, bringing rainy conditions and heavy snow into February and March, the April 1, 2019 statewide Sierra Nevada snowpack ended at 161% of normal.

Forecasts for the next 10 days, however, show mostly dry, sunny conditions across Northern and Southern California, meaning the snow pack will almost certainly get smaller in the coming weeks.

Officials from the state Department of Water Resources conducted their second monthly Sierra Nevada snowpack survey of the season Thursday, with the media in tow, at Phillips Station along Highway 50 near Sierra-at-Tahoe ski resort in El Dorado County.

At that location, the snow was 40.5 inches deep. It held an estimated 14 inches of water. That's 79% of the historic average for that location for the beginning of February, officials said.

The U.S. Drought Monitor on Thursday showed none of California in a drought, but 34% of its landscape was 'abnormally dry' due to below-normal rain and snow in January.

How much snow falls every winter is critical to California's water picture. The snow, which forms a vast "frozen reservoir" over California's 400-mile long Sierra mountain range, provides nearly one-third of the state's water supply for cities and farms as it slowly melts in the spring and summer months. The melt sends billions of gallons of clean, fresh water flowing down dozens of rivers and streams into reservoirs.

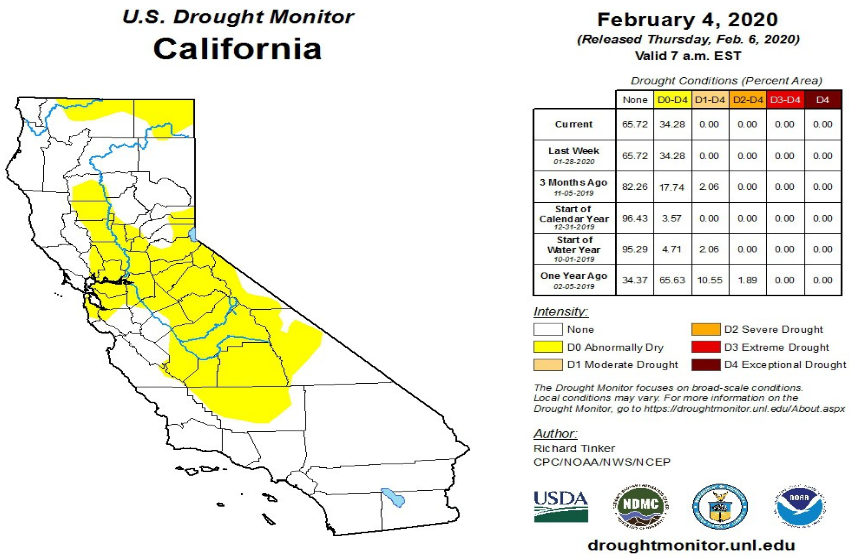
Shasta Lake, the state's largest reservoir, near Redding, on Thursday was 76% full, or 113% of normal. Lake Oroville, in Butte County, is 62% full, or 95% of normal. New Melones Lake, in the Sierra Foothills of Calaveras and Tuolumne counties, is 83% full, or 140% of its historic average. And San Luis Reservoir, near Los Banos, is 74% full, or 95% of its historical average.

None of California's landscape is currently classified as being in a drought, according to the Thursday's U.S. Drought Monitor, a weekly report put out by the U.S. Department of Agriculture, the University of Nebraska, and the National Oceanic and Atmospheric Administration.

However, Thursday's report did classify 34% of the state as being "abnormally dry," up from just 3.6% a week ago.

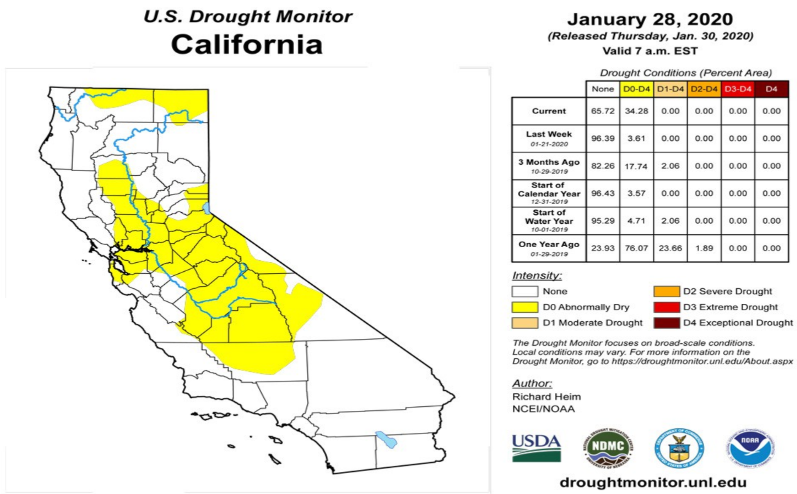
U.S. Drought Monitor-- California

As we see here, 65% of the state is now "Abnormally Dry."



	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	65.72	34.28	0.00	0.00	0.00	0.00
Last Week 01-28-2020	65.72	34.28	0.00	0.00	0.00	0.00
3 Months Ago 11-05-2019	82.26	17.74	2.06	0.00	0.00	0.00
Start of Calendar Year 12-31-2019	96.43	3.57	0.00	0.00	0.00	0.00
Start of Water Year 10-01-2019	95.29	4.71	2.06	0.00	0.00	0.00
One Year Ago 02-05-2019	34.37	65.63	10.55	1.89	0.00	0.00

Compare the above to the monitor from one year ago:



	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	65.72	34.28	0.00	0.00	0.00	0.00
Last Week 01-21-2020	96.39	3.61	0.00	0.00	0.00	0.00
3 Months Ago 10-29-2019	82.26	17.74	2.06	0.00	0.00	0.00
Start of Calendar Year 12-31-2019	96.43	3.57	0.00	0.00	0.00	0.00
Start of Water Year 10-01-2019	95.29	4.71	2.06	0.00	0.00	0.00
One Year Ago 01-29-2019	23.93	76.07	23.66	1.89	0.00	0.00

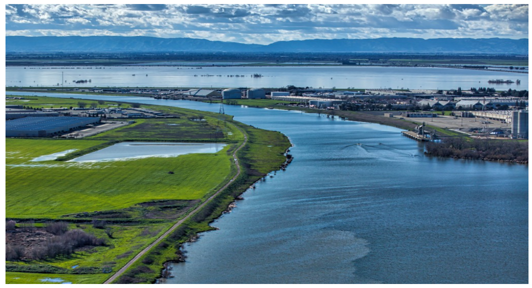
The California Water Wars, Again

Governor Newsom presents his water policy. I will just include the opening paragraphs, since the content is a kind of "feel good" about one more attempt to deal with the state water question without thinking big.

That is followed by a report from the Department of Water Resources on the groundwater sustainability plan, one of the elements the governor discusses.

Then a report on the California canals damaged by sinking soil due to groundwater pumping, and new bills to fix the damage.

Gov. Newsom: California must get past differences on water. Voluntary agreements are the path forward



The San Joaquin-Sacramento Delta provides much of the water used by California farmers and cities. But it also is habitat for salmon and smelt that are endangered by water pumping. (Photo courtesy of U.S. Fish & Wildlife Service)

By Gov. Gavin Newsom, Special to CalMatters

February 4, 2020

https://calmatters.org/commentary/gavin-newsom-sacramento-san-joaquin-bay-delta/

Water is the lifeblood of our state. It sustains communities, wildlife and our economy—all of which make California the envy of the world.

Reliably securing this vital and limited resource into the future remains a challenge, especially with a warming and changing climate.

For more than a year, my Administration has worked to find a comprehensive solution for the Sacramento-San Joaquin Bay Delta—a path to immediately improve the health of these waterways, create certainty for the 35 million Californians who depend on these water sources, and maintain the economic vitality of the Central Valley.

Historically, disputes over water, or what some call "water wars," have pitted stakeholders against one another: urban vs. rural; agriculture vs. conservation; North vs. South.

Today, my administration is proposing a path forward, one that will move past the old water binaries and set us up for a secure and prosperous water future.

Department of Water Resources

January 31, 2020 (an excerpt)

Critically overdrafted groundwater basins are required to submit groundwater sustainability plans to the state by January 31, 2020 that outline how the basins will reach sustainability over the next 20 years

> Local agencies representing 19 of the state's most stressed groundwater basins are required to submit plans to the state by midnight tonight on how they will manage their basins to achieve sustainability by 2040. Several plans were submitted early and were posted online today, starting a public comment period which closes on April 15, 2020. The remaining plans will be posted online in the coming weeks for a 75-day public comment period.
>
> Overpumping of groundwater has led to a variety of negative effects including reduced groundwater levels, seawater intrusion, and degraded water quality. It has also led to subsidence, which causes damage to critical water infrastructure. In some cases, years of overpumping have left entire California communities and farms without safe and reliable local water supplies.

"Groundwater is a critical component of the state's water supply resources," said Karla Nemeth, director of the California Department of Water Resources (DWR). "California's groundwater basins must be managed for long-term sustainability rather than for short-term need."

California's Sustainable Groundwater Management Act (SGMA), signed into law in 2014, requires locally led Groundwater Sustainability Agencies (GSAs) to develop groundwater sustainability plans outlining actions and implementation measures to halt overdraft and bring groundwater basins into sustainable conditions. Plans for critically overdrafted basins are due today, Jan. 31, 2020. High- and medium-priority basins have until 2022 to submit plans and are required to reach sustainability by 2042. SGMA allows for more than one GSP to be prepared for a single basin as long as the GSAs demonstrate the plans work together through a coordination agreement.

California canals damaged by sinking soil, groundwater pumping. New bills aim to help

By Carmen George

February 04, 2020 05:45 AM
https://www.fresnobee.com/news/local/water-and-drought/article239924363.html

Democratic congressman from Fresno introduced two pieces of legislation that aim to repair aging canals and water infrastructure in California that's been damaged by sinking ground levels – called subsidence, caused by groundwater pumping.

"The canals on the eastside and the westside are experiencing dramatic subsidence and therefore their capacity to move water has greatly diminished," said Rep. Jim Costa during a news conference Monday before the backdrop of the central San Joaquin Valley's Friant Dam, just outside Fresno.

"What does my legislation do? It provides an authorization of $400 million for repairs to the California Aqueduct and the Delta-Mendota Canal on the westside."

Additionally, Costa said, "State and local water users will be asked to contribute their fair share to match these federal dollars."

The bills are the Conveyance Capacity Correction Act, introduced by Costa, and the Western Water Storage Infrastructure Act, introduced by Cox. The second "would provide additional funding for surface storage, groundwater storage, and the supporting conveyance facilities" with $800 million between fiscal years 2020 and 2024.

Other recent water bills

Other legislative work to bolster water infrastructure was also highlighted.

California canals in need

Aging water infrastructure that stands to benefit from these bills:

- *The 444-mile California Aqueduct stretches from the Sacramento-San Joaquin Delta to Southern California. Its capacity has diminished as much as 20% since it was built in 1963, Costa said.*

- *The 117-mile [Delta-Mendota Canal] stretches from around the Delta to the Valley. Costa said its capacity has diminished 15% or more since it was built in 1951.*
- *The 152-mile [Friant-Kern Canal] stretches from Friant Dam to near Bakersfield and was built in 1951. Cox said it's lost up to 60% of its original capacity due to subsidence.*

New groundwater sustainability plans

The announcement of these new water bills comes days after a milestone moment for California water management.

The state required groundwater sustainability plans be filed Jan. 31 for the first time for California groundwater basins and subbasins identified as critically overdrafted. Eleven of these 21 overdrafted basins are located in the central San Joaquin Valley.

PG&E: The Beginning of the End?

PG&E announces new bankruptcy plan. Does it go far enough for California Gov. Newsom?

By Dale Kasler and

Sophia Bollag

January 31, 2020 09:00 PM
https://www.sacbee.com/news/business/article239837853.html

Facing threats of a state takeover, PG&E Corp. on Friday unveiled a new plan for pulling out of bankruptcy that would overhaul the utility's leadership and dedicate more executives to wildfire safety. The plan lays out a multibillion-dollar strategy for compensating victims of the 2017 and 2018 wildfires without raising customers' rates. But the important audience for the new deal was the California utility's fiercest and most powerful critic: Gov. Gavin Newsom.

A month ago, Newsom rejected its first plan for compensating wildfire victims and reorganizing its operations, PG&E submitted an amended proposal in U.S. Bankruptcy Court and the California Public Utilities Commission.

PG&E's revised proposal — which followed weeks of intensive negotiations with Newsom's top advisers — makes some concessions to Newsom. The utility said it plans at least a partial shakeup of its board of directors and will enlist an outside, independent safety monitor to oversee company operations. Officials known as chief safety officers would be deployed throughout PG&E's territory.

PG&E needs court approval for its bankruptcy plan by June 30 to gain admission to a new wildfire insurance fund worth $21 billion. The PUC must sign off on the plan, too, although it's been Newsom who has been pressing the utility for dramatic changes in how it does business.

Newsom's office had no immediate comment. As recently as Wednesday — the anniversary of the utility's Chapter 11 bankruptcy filing — the governor reiterated his threat to engineer a state takeover if PG&E didn't make dramatic changes.

"There's going to be a new company, or the state of California takes it over," Newsom said at a conference in Sacramento sponsored by the Public Policy Institute of California.

Among other things, Newsom said he was afraid the earlier plan would leave PG&E too heavily in debt and hobble its wildfire safety efforts, which includes replacing aging transmission towers, *insulating exposed power lines and trimming trees more aggressively. PG&E was driven into bankruptcy by wildfires blamed on its equipment, including the worst-in-history 2018 Camp Fire in Paradise.*

Pledge to add safety experts

The company said its plan will create "a financially stable company" capable of investing in fire prevention. Its filing with the Public Utilities Commission included written testimony from the John Plaster of Barclays, one of the utility's lenders, saying he believes the company will be able "to attract more than enough capital."

As for company governance, PG&E on Friday said it probably wouldn't replace its board with an entirely new slate of directors, as Newsom demanded in December.

PG&E has already made deals to pay its major creditor groups, including a landmark $13.5 billion agreement with lawyers representing tens of thousands of Northern California wildfire victims.

Time is running short. If the company doesn't exit bankruptcy by June 30, it won't be allowed to participate in a new state-run insurance pool that would partially shield California's major utilities against liabilities from future wildfires — a critical piece of PG&E's efforts to regain its financial viability.

The $21 billion pool is funded equally by utility shareholders and ratepayers, with the ratepayers' share coming from extending a $1.50-a-month surcharge that was due to expire this year.

It's time for California to take over PG&E, state lawmaker says

By Taryn LunaStaff Writer
Feb. 3, 2020
https://www.latimes.com/california/story/2020-02-03/its-time-for-california-to-take-over-pg-e-state-lawmaker-proposes

A state lawmaker is making a move to turn Pacific Gas & Electric into a public utility, a potentially dramatic shift that would end decades of corporate control over California's largest power company.

State Sen. Scott Wiener (D-San Francisco) said Monday that he would introduce legislation this week aimed at revoking the 115-year-old company's authority to serve its territory and directing the state to assume control.

"PG&E is a failed utility with a track record of prioritizing profits over safety," Wiener said in a statement. "It's time for a new start: A utility focused not on Wall Street and shareholder profits, but rather on safety, reliability, affordability, and ratepayers."

State officials have spent months mulling the possibility of taking over the troubled utility. But Wiener's promised bill would probably be the first formal proposal to do so.

Gov. Gavin Newsom has threatened to launch a public takeover of PG&E in response to the company's bankruptcy restructuring plan, which he said would leave the utility with too much debt to spend the billions of dollars needed to make necessary safety improvements.

Lawmakers passed a bill last year that offers PG&E a financial incentive to settle its existing lawsuits from wildfire victims, exit bankruptcy by June 30, preserve its efforts to meet the state's climate goals and establish a governance structure that prioritizes safety. If the company does all those things, it can dip into a multi-billion-dollar state wildfire fund — supported by $10.5 billion from ratepayers and another $10.5 billion from the state's three largest investor-owned utilities — to pay off claims for *damages stemming from blazes that ignited after the bill took effect last summer.*

At an event last week hosted by the Public Policy Institute of California, Newsom described the bankruptcy as a "godsend" and "extraordinary opportunity" to recreate the utility. He reiterated his willingness to turn PG&E into a public utility and said the old company "no longer exists."

"There's going to be a new company or the state of California takes it over," Newsom said.

The Real Economy

U.S. Industry Continues Slowdown, as Trade Dominates Fourth-Quarter GDP

Jan. 31 (EIRNS)—The U.S. Commerce Department's first report on U.S. GDP, with other reports, showed the slowdown in industry becoming more marked. The fourth-quarter GDP growth rate was reported to be 2.1%, resulting in a 2.3% rate for 2019 as a whole. "Fixed investment" grew only 0.01% in the fourth quarter 2019; and non-residential fixed investment, or business capital spending, declined for the third consecutive quarter.

Almost three-quarters of the reported fourth-quarter growth was "net trade"; consumer spending was the rest. The positive shift in "net trade" income, however, consisted mostly in a drop in U.S. imports, especially from China, with a small overall growth in exports. This shift resulted from the effects of tariffs combined with a change in China's trade policy toward higher industrial and household products from the United States, as reported in EIR for Jan. 24. Net trade has not had such an impact on GDP growth since 2009.

A significant drag on American exports, which grew only modestly, is the problems afflicting Boeing (see below), which normally accounts for 3.5% of all U.S. exports. President Donald Trump has stated recently his great disappointment in the company, which produced "fuel-saving" aircraft that at least some of its top engineers knew were unsafe to fly without special pilot training on simulators.

At the same time, the Chicago Purchasing Managers Index of Manufacturing, published for December, showed industrial contraction for the seventh consecutive month, at a very low 42.9 index (below 50 is contraction). This is only one of several such surveys which often disagree, but have all been in contraction in November and December.

In addition, the Labor Department published its retrospective report on "job additions and losses" for the second quarter of 2019. Contrary to the figures in some BLS monthly "adjusted" reports during the year, this shows manufacturing employment having fallen already during the second quarter, and goods-producing employment overall increasing by a small 21,000 in that Spring quarter.

Boeing's Problems Continue, While Ripple Effects Hit Suppliers

Jan. 31 (EIRNS)—Moody's credit rating agency has downgraded Boeing's senior unsecured debt ratings from A3 to Baa1. Moody's downgrade is in light of the ongoing troubles due to the grounding of the 737 MAX, the plane which Goldman Sachs believes was slated to provide a third of Boeing's revenue over the next five years. Boeing has also reported its first annual loss since 1997, as the costs associated with the 737 MAX have doubled in the recent period to $19 billion.

Boeing's troubles ultimately stem from the sad trend of accelerating financialization of the physical economy that we have seen over the recent decades in trans-Atlantic corporations. Somewhere in the intersection of green ideology and faith in information theory, Boeing decided to implement a software fix to deal with the incompatibility between their newer, more fuel efficient engines and their existing *blueprint of the 737 workhorse, rather than wait for Federal Aviation Administration (FAA) approval of a new design based on physical principles—ultimately acquiescing to shareholders' demands for immediate profits, resulting in unnecessary deaths and loss of important economic activity.*

According to Moody's, it will take Boeing three years to restore the production capabilities of the 737 MAX, which will also take additional costs. Boeing has said they will get the green light from the FAA to get the planes back into the skies by mid-spring, but even if that were true, the crisis will still result in "significant negative free cash flow near $10 billion in 2020," says Moody's. It is not clear whether the deep pockets of Boeing will help them weather this storm, but it is clear that many of their suppliers do not have those same deep pockets.

Industry experts say that Boeing has a tenfold multiplier effect for the supply chain. General Electric, which supplies the engines for the 737 MAX planes, expects its cash costs related to the aircraft's grounding to be $1.4 billion in 2019. This could in turn have an effect for GE's own aviation business. While GE may also be able to absorb these types, many of the smaller machine shops, composite material manufacturers, and the myriad warehouses that sprawl around the Boeing and GE plants, are more reliant on the constant cash flow which may now be drying up. These smaller firms also produce other things that are essential for our economy, such as medical instruments, spectrometers, and much else.

Why Life Expectancy in the United States Is Lower Than Cuba or Slovenia

https://www.healthline.com/health-news/why-is-us-life-expectancy-so-low?fbclid=IwAR0TlQyoiVAFI5Y8ZXSoqqjDOLApUJem92Y5a9X5tO77Y97h6iJ5Az78aEk#Whats-the-problem-here?

Researchers say economic disparity, obesity, opioids, and suicide are all factors in the United States' relatively low life expectancy rate. Getty Images

- ***The average life expectancy rate in the United States has declined slightly the past three years to 78.6 years old.***
- ***The average is five years lower than Japan or Switzerland.***
- ***The rate is also lower than Cuba and Slovenia's average life expectancy.***
- ***Experts say economic disparity is a chief reason for the U.S. decline.***
- ***Experts add that the opioid epidemic, a rising suicide rate, and the obesity crisis are also factors.***

Life expectancy rates around the world have been steadily rising in recent years.

However, in the United States, it's a different story.

Over the past three years, life expectancy has declined to 78.6 years old, one of the lowest rates among developed nations.

Experts say this isn't good enough.

"The U.S. continues to have lower life expectancy compared to other developed countries, which is concerning. We spend more per capita GDP on healthcare than any other country, yet we don't receive the anticipated health benefits from such spending," Dr. Ky Stoltzfus, an assistant professor in the departments of Internal Medicine and Population Health at the University of Kansas Medical Center, told Healthline.

The Organization for Economic Cooperation and Development (OECD) is a group of 36 countries, most of which are considered developed with high-income economies.

Among this group, the United States ranked [28 out of 36](#) for life expectancy, sitting just ahead of Poland, Turkey, and Estonia.

What's the problem here?

Stoltzfus said there are likely several reasons other developed nations with similar economic strength are performing better than the United States.

"When you examine OECD countries that perform well in mortality rates, infant mortality, and other health outcomes, they have strong social support systems, more equitably distributed healthcare, and concerted efforts at keeping their populations healthy," he said.

When it comes to infant mortality, the United States experiences on average 5.9 deaths per 1,000 live infant births, compared with an average of 3.9 deaths per 1,000 live births among OECD nations.

Iceland has just 0.7 deaths per 1,000 live births. The United States ranks 33rd out of 36 in this area, ahead of only Mexico, Turkey, and Chile.

The U.S. state with the highest level of infant mortality, Mississippi, experiences 8.9 deaths per 1,000 live births, more than twice the OECD average.

Onward to the Moon and Mars

White House, NASA officials visit nuclear technology company in Lynchburg

By Ashley Anne |
Posted: Wed 5:48 PM, Feb 05, 2020
https://www.wdbj7.com/content/news/White-House-NASA-officials-visit-nuclear-technology-company-in-Lynchburg--567597901.html

LYNCHBURG, Va. (WDBJ7) -- *White House and NASA officials toured BWX Technologies in Lynchburg Wednesday.*


WDBJ7 photo

The facility has been working to develop a new nuclear thermal propulsion system for NASA to help advance space exploration.

Officials say the capabilities at BWXT will help put man back on the moon and begin the exploration of Mars.

"When we plant that American flag on Mars, it is very likely that that mission is going to go through Lynchburg Virginia because of BWXT," said Jim Bridenstine, the Administrator of NASA. "Now, when we talk about what it takes to get to Mars, we're talking nuclear propulsion," he said.

Bridenstine said the faster astronauts can travel to Mars, the better, because it decreases exposure to radiation.

Implement the Artemis Moon Mission Now: It Will Heal the Nation's Wounds

An excerpt from the article

https://larouchepac.com/20200205/implement-artemis-moon-mission-now-it-will-heal-nation-s-wounds
20200205-artemis-fight-kdr.pdf

by Kesha Rogers

February 6, 2020

Tuesday night, during his State of the Union address, President Trump called for full funding of Project Artemis, his bold space vision to return to the Moon. This is the critical first step to the next level of economic development for the human species, including an interplanetary fusion economy and mankind's colonization of Mars and the rest of the Solar System.

Artist's rendition of earlier stages of the Moon's colonization.

As was demonstrated by the Apollo Moon missions, the exploration of space is the most important and effective driver of science, technology, economic growth, and cultural optimism. The Apollo Program produced profound breakthroughs in medicine, engineering, manufacturing, and other fields too numerous to list, and expanded our understanding of the fundamental laws of the universe. For every $1 spent on the manned space mission, our economy gained $10 right here on Earth, because of the technological improvements that mission demanded.

Trump sees America's return to space critical to our future:

"In reaffirming our heritage as a free nation, we must remember that America has always been a frontier nation. Now we must embrace the next frontier, America's manifest destiny in the stars. I am asking Congress to fully fund the Artemis program to ensure that the next man and the first woman on the Moon will be American astronauts — using this as a launching pad to ensure that America is the first nation to plant its flag on Mars."

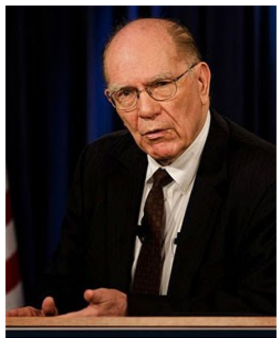
In an exchange with LaRouche PAC leader Kesha Rogers, NASA Administrator Jim Bridenstine emphasized the significance of the 2024 date for landing on the Moon: "You [Kesha Rogers] mentioned 2024, and some people have said maybe that's a partisan date. Remember what Kennedy said: 'by the end of the decade.' He gave it a date. Why? Because that's how you get results." Bridenstine continued: "Here's the important thing: NASA doesn't have a science problem or a technical problem. We can retire all the technical risk you can imagine: We're an amazing agency with amazing engineers. We have a political problem! That's why we are not at the Moon right now, that's why we are not on Mars right now."

The "political problem" referred to by Bridenstine has been the result of a sustained attack on our nation's manned space program, an attack that started long before Trump took office. The neo-

Malthusian, zero-growth attitude, coupled with deadly pragmatism has crippled our space program, robbing Americans of the optimism, scientific progress, and creative discovery uniquely associated with the exploration of space. This insanity is coupled with rabid and irrational hatred of President Trump generated by constant 24 hour a day propaganda portraying him as a monster. As a result, Congress is chipping away at Artemis, saying that if this President proposes producing a bountiful and optimistic future for you and your children, it must not happen because this President proposed it.

Feature: Rebuilding the U.S. Economy

I have presented in these reports the policy to rebuild the U.S. economy, which requires the "Four Laws of Economic Recovery" as put forward by Lyndon LaRouche.



Lyndon H. LaRouche, Jr.

This week we focus on the First Law.

For last week's report, here is the link: http://www.californiadroughtupdate.org/20200130-California-Water-and-Infrastructure-Report.pdf?_t=1580495639

So we begin again:

First, the Four Laws in summary form:

1. Re-enactment of the Glass Steagall Act, separating commercial from speculative banking and ending public bailouts of Wall Street gambling debts;

2. A new national bank or other credit-issuing mechanism, such as Lincoln's Greenbacks, capable of producing massive amounts of credit for long-term economic projects;

3. Use of this national banking mechanism to selectively fund projects that will raise national *physical productivity* and create high-paying jobs in *productive* sectors of the economy; and

4. A crash program to develop fusion power—not only providing power for the entire planet, but to end raw materials shortages and to support mankind's exploration and development of the Solar System.

1. Restore Glass-Steagall

> *(1) The immediate re-enactment of the Glass-Steagall law instituted by U.S. President Franklin D. Roosevelt, without modification, as to principle of action.*

President Franklin D. Roosevelt's Glass-Steagall Act was in force from 1933 to the mid-1990s, and was repealed in 1999 after being deliberately unenforced by regulators for several years. It must be restored now: as a matter of justice for the terrific damages wreaked on American households and businesses by the 2008 financial crash; in order to prevent another, oncoming banking crash; and in order to restore the U.S. commercial banking system as an engine of bank credit through lending, which will contribute to a national recovery of industry, productivity and productive employment.

The Casino Is Looting the Economy

The American people need a banking system which lends into the economy and participates along with national credit institutions in national rebuilding of infrastructure, industry and science: in Alexander Hamilton's words, "concentrating the savings of the citizens and placing them in the hands of those who can use them most productively."

FDR signing the Glass-Steagall banking bill

The Glass-Steagall Act protected bank depositors and the government itself from the speculative activities of Wall Street megabanks. Under Glass-Steagall separation of commercial and investment banking, securities firms and investment banks could not take deposits, and commercial Federal Reserve member banks could not:

- deal in non-governmental securities for customers,
- invest in non-investment grade securities for themselves,
- underwrite or distribute non-governmental securities,
- affiliate (or share employees) with companies involved in such activities.

The Roosevelt Administration passed Glass-Steagall in 1933, precisely because the mix of speculative and commercial banking activities resulted in the Great Depression, as failures spread like a contagion through the system. Glass-Steagall stopped this for over 60 years, during which time no major financial failure threatened to bring down other banks, or the whole banking system. Just a decade after Glass-Steagall was done away with in 1999, the collapse of Lehman Brothers in 2008 spread through the whole financial system like a weapon of mass destruction.

Now, 10 years following the bank panic and financial crash of late 2008, and the decimation of the nation's citizens, farms, and factories to bail out the banks, the American banking system has only barely increased its lending to households and businesses. Despite receiving a very large increase in deposits, and having some $14 trillion in liquidity from taxpayer institutions poured in by bailouts — more than $4 trillion of it permanently — lending to the real economy is minimal. Deposits have risen from $7.5 trillion in 2008 to $11 trillion in 2015, while the Federal Reserve put $4.5 trillion into the biggest banks by buying their securities; but loans and leases from the banks rose only from $7.3 trillion in 2008 to $8.3 trillion at the end of 2015, according to Federal Reserve data.

For the "Big 12" megabanks, instead of lending, "trading" has been their watchword for profits, including with the bailout liquidity they received from taxpayers. "Trading" means the stock and bond markets, junk bonds and commodities trading, foreign exchange trading, "securitizing" everything from subprime mortgages to auto loans to home rents, repo markets, and of course creating "financial derivatives" bets on all of it. The Wells Fargo account-fraud scandal showed that right down to the retail level where branch bankers talk to customers, all the biggest banks are driving to put customers' deposits directly into "financial products" including derivatives, rather than turning those deposits into loans to the U.S. economy. This speculative activity sucks the life out of the real economy.

Some 28% of all U.S. bank assets reported by the Federal Reserve now are securities. The average for the "Big 12" banks is about 35% securities, and that definitely does not include their financial derivatives "assets." Combine that with the looming crash of the U.S. corporate debt bubble and you have the prescription for a financial inferno.

If Glass-Steagall is not immediately re-enacted, preemptively, now, a crash will happen with even greater devastation of Americans' livelihoods than that of September 2008.

How Dangerous Are the Too-Big-To-Fail Banks?

Until Glass-Steagall was abandoned in the mid-1990s, there also were no "megabanks" based in the United States; no bank held more than 6% of total assets in the banking system as a whole. Starting in the late 1990s the largest Wall Street banks exploded in size, and this has continued since the 2008 crash, so that now just six banks hold two-thirds of the deposits and two-thirds of the assets in the entire banking system.

Once Glass-Steagall was repealed, the derivatives markets exploded in size, from nominal values totaling about $70 trillion in 1998, to more than $700 trillion a decade later. In 2008, the size of this derivatives market threatened to bring down all of the biggest banks at once, had the government not bailed most of them out. And after the crash, the six biggest Wall Street banks accumulated, on average, 30% more derivatives exposure, according to FDIC vice chairman Thomas Hoenig in 2014. That derivatives exposure was $232 trillion then; it is $265 trillion now. This is about 12 times the nominal value of the entire U.S. economy. Even the entire economic output of the U.S. would not be enough to pay up on these bets.

Since 2008, the indebtedness of the systemically important financial institutions has only grown, while the measures taken to address the collapse have made the system even more bankrupt, creating a situation where the rest of the economy collapses at an increasing rate to keep up. The $14 trillion "eased" into the system to keep the "globally systemic" banks afloat went to purchase toxic assets of the financial institutions and create stock market and other financial bubbles. Much of the money loaned went straight into these bubbles. Much of the $4.5 trillion created by the Fed to buy banks' securities, was put back into the Federal Reserve by those very banks as interest-earning "excess bank reserves," never entering the real economy.

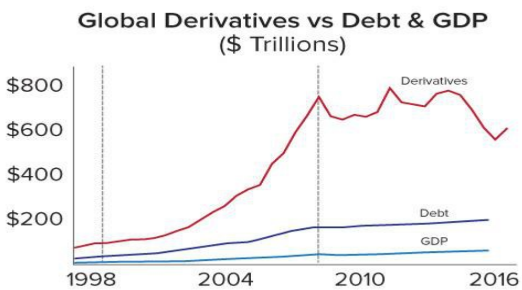
And now, corporate debt levels, along with derivatives world-wide, edge toward another implosion. The debt of U.S. non-financial corporations has more than doubled, reaching over $14 trillion: $11 trillion owed to banks and the rest to "shadow banks" such as money market mutual funds, pension funds, and similar funds. Figure 1 shows the extraordinary rate at which the banks' portion of that debt bubble grew, both leading into the 2008 crash and after it, up through mid- 2015.

Feeding the explosion of corporate debt has been the vast money-printing of the central banks of the United States, the UK, Japan, and the Eurozone: their $15 trillion in lending facilities to big banks, with effective zero interest rates, has been combined with roughly $14 trillion in capital and liquidity infusions by buying bonds from the big private banks.

Since 2013, some 80% or more of this borrowing has been used by larger corporations for "financial engineering"; that is, buying their own stock to drive it up, or buying other companies' stock in mergers and acquisitions which have the same effect. Some $4 trillion has gone into driving up stock market indices while betting on them; another $4 trillion has gone into dividends to stockholders. But total nonfinancial corporations' profits have not increased since 2011; and in the three years 2013-5, they fell.

Therefore, debt leverage has jumped up. Morgan Stanley bank itself published a detailed research note on April 20, 2017 which reported that the ratio of non-financial corporate debt to cash-from-operations is at an all-time high of 3.2:1 (2.7:1 is the highest it has ever been before, the bank reported). Companies have low and falling "interest coverage," or ability to even pay interest from earnings—coverage levels like those in the 2001 recession and the 2008 crash.

The IMF 2017 Global Financial Stability Report found that in the United States, the ratio of debt service to income for non-financial corporations had risen quickly from 37% in 2014, to 41% in 2016. With debt flying up relative to operating cash, and with profits declining, companies can keep servicing debt only by borrowing more. Those corporations have $7 trillion more debt than they had at the 2008 crash, but $3 trillion less equity invested in them.



In that report, the IMF made the startling forecast that any sudden interest rate rise in the United States economy would result in at least 20% of American non-financial corporations being brought to default—a default rate higher than any reached in the mortgage sector prior to the 2008 bank panic.

Total debt securities in the U.S. economy are now at 220% of GDP, whereas in 2007 at the height of the last (mortgage-centered) bubble, they reached 180% of GDP.

As the corporate debt bubble in the United States reached its peak and threatened to begin the collapse, its composition shifted strongly in 2017 toward "junk debt"—that is, junk bonds and leveraged loans, or loans to already over-indebted companies essentially allowing them to pay interest—with this junk or subprime component of corporate debt growing by $800 billion in 2017 alone. A further shift was away from commercial and industrial lending to real estate debt. At the same time, consumer debt suddenly started growing rapidly after generally shrinking since the 2008 crash. Subprime auto debt, for example, has higher default rates in 2017 than subprime mortgage debt did in 2007.

But the rates at which these categories of the debt bubble were growing, were not as fast as the rates at which they were being securitized by the major banks, and the new debt securities sold to mutual funds, pension funds, individual investors, and so on. Here too, the biggest banks were trying to get out and dump the debt on other investors. They did the same thing with mortgage securities and derivatives during 2007 and 2008. The return of these practices is a sure sign that the huge debt bubble is nearing a crash.

The only means to stop this world-wide dumping of financial toxic waste — the hallmark of the 2007-08 crash — to create the space for an orderly bankruptcy reorganization of these worthless debts, and to create a lending-oriented commercial banking system, is to re-enact Glass-Steagall now.