

California Drought (and Flood) Update



For April 27, 2017

by Patrick Ruckert

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<http://www.californiadroughtupdate.org>

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

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The person in whom this power resides, may often, as far as regards many portions of their nature, have little apparent correspondence with that spirit of good of which they are the ministers. But even whilst they deny and abjure, they are yet compelled to serve, that power which is seated on the throne of their own soul. They measure the circumference and sound the depths of human nature with a comprehensive and all-penetrating spirit, and they are themselves perhaps the most sincerely astonished at its manifestations; for it is less their spirit than the spirit of the age.

From Percy Shelley's essay: In Defence of Poetry

A Note To Readers

Moments of great turmoil in the course of human affairs make us long for such a leadership as described by Shelley. It is not what that leader does today or yesterday, but what he will do tomorrow that history will judge.

And tomorrow, or more precisely May 14-15, President Trump must be in Beijing for the international heads of state summit of the Belt and Road Forum for International Cooperation. Then, through cooperation with China, the President will get on the right pathway. Again and again, President Xi has offered the invitation, including once again yesterday: “China invites US to join Belt and Road.”

http://usa.chinadaily.com.cn/epaper/2017-04/26/content_29095624.htm

Meanwhile, the other side of the necessary policy required to even begin to repair our damaged nation, the reinstatement of the Glass-Steagall banking law is moving forward, and the Wall parasites are screaming. “Momentum For Glass Steagall Driving Wall Street Hysteria, as Momentum for the Belt

And Road Forum Accelerates:” <https://larouhepac.com/20170427/momentum-glass-steagall-driving-wall-street-hysteria-momentum-belt-and-road-forum>

There is no more clear example of why the President must adopt the Four Laws of Lyndon LaRouche than the state of the California water management system. The Oroville Dam disaster is just the most visible element of that breaking-down system that provides water to almost 40 million people and grows half of the vegetables, fruits and nuts for the entire nation.

Just to remind people of those necessary policies of LaRouche's Four Laws, and to note that President Trump is now moving forward on three of them:

- 1) Restore the Glass-Steagall banking law.
- 2) Establish a national banking and credit system modeled on that created by Treasury Secretary Alexander Hamilton.
- 3) Rebuild and put the nation to work once again by a massive infrastructure building program and the required re-industrialization.
- 4) That rebuilding is to be focused on the frontiers of science and technology in order to uplift the power of the economy to a new and higher productive level. That means an aggressive space program and fusion power.

With the President, we see motion on Glass-Steagall, infrastructure, re-industrialization and the space program. In his discussion with the astronauts on the International Space Station just three days ago, he made the important point that the U.S. needs an expanded NASA policy for the psychological impact of it on peoples' outlook on the future: https://www.youtube.com/watch?v=M_D4i3CLNqU

In this week's report:

The drought, the reservoirs and some weather begin our slog this week. But it does get more interesting.

Back in the news is the proposal by the State Water Resource Control Board (SWRCB) for the unimpaired flows of the Stanislaus, Tuolumne and Merced Rivers. The state would demand releasing water from key reservoirs in both wet and drought years and take 40–70 percent of the water flowing in the Stanislaus, Tuolumne and Merced Rivers. The new flow increases would be on top of nearly 30 percent already required to “aid” endangered Chinook salmon migration. I like the opening paragraph or two of the piece by Aubrey Bettencourt especially on the topic. Her piece and another on the topic are excerpted below.

Then comes our report on Oroville Dam.

Two other topics follow. The first is on the continuing fear by farmers of losing up to 40 percent of their field workers if the President's actions on illegal immigrants does not take that into consideration.

Finally, while the drought may be history, the damage will be with us for years. One hundred million dead trees promises insects, fires and damage to watersheds.

The Drought Must Be Over

The governor's office and the State Water Board, late as usual, has made it official: The drought is over.

State Water Board Rescinds Mandatory Conservation Standards

Reporting Requirements and Prohibition on Water Waste Remain

April 26, 2017

From the State Water Resources Control Board:

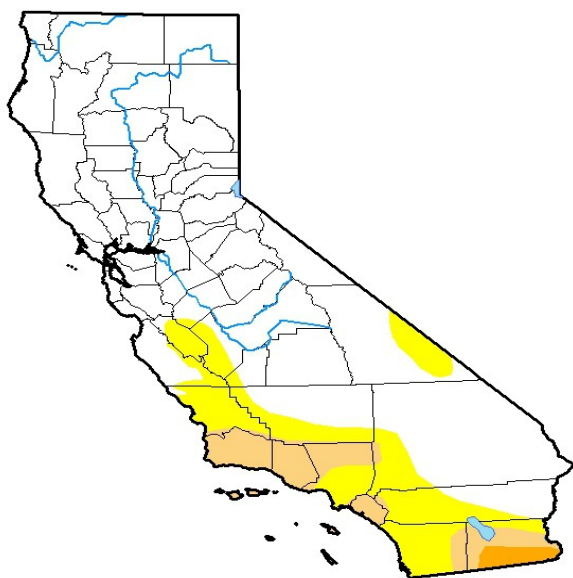
Today the State Water Resources Control Board rescinded the water supply “stress test” requirements and remaining mandatory conservation standards for urban water suppliers while keeping in place the water use reporting requirements and prohibitions against wasteful practices.

The action by State Water Board Executive Director Tom Howard was in response to Governor Brown’s announcement earlier this month ending the drought state of emergency and transitioning to a permanent framework for making water conservation a California way of life.

The Governor’s April 7 executive order directs the State Water Board to lift the specific conservation provisions of its drought emergency regulations but to keep in place the temporary requirements for monthly water use reporting and prohibitions against wasteful water use practices while the Board works to develop permanent reporting and wasteful use regulations. The temporary requirements will remain in effective until Nov. 25, when the emergency regulation expires.

U.S. Drought Monitor

U.S. Drought Monitor California



April 25, 2017

(Released Thursday, Apr. 27, 2017)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	76.54	23.46	8.24	1.06	0.00	0.00
Last Week 04-18-2017	76.54	23.46	8.24	1.06	0.00	0.00
3 Months Ago 01-24-2017	38.73	61.27	51.40	26.46	2.16	0.00
Start of Calendar Year 01-03-2017	18.07	81.93	67.61	54.02	38.17	18.31
Start of Water Year 09-27-2016	0.00	100.00	83.59	62.27	42.80	21.04
One Year Ago 04-26-2016	4.24	95.76	90.09	74.37	49.15	21.04

Intensity:

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

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

Author:

Eric Luebbehusen
U.S. Department of Agriculture



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

Here are two postmortems on the rainy winter we just experienced. Imagine 46 atmospheric rivers hit the state. The second article mentions the number 7, but only the first was of interest for our report.

Atmospheric Rivers Hit California

April 25, 2017

<https://californiaagtoday.com/atmospheric-rivers/>

By Patrick Cavanaugh, Farm News Director

California needs an average of three atmospheric rivers annually to reach its average yearly rainfall. So far this year, the state has seen an incredible 46 atmospheric rivers. This intense rainfall has pushed much of California out of longstanding drought conditions.

Johnson noted that these unpredictable storms were caused by an anomaly in the Pacific Ocean that is a remnant of last year's El Nino. "The predominant reason that we kept getting these atmospheric rivers has been the fact that the sea surface temperatures across the Pacific Ocean have been in a very unusual anomaly," he said. "They've been cold in the Gulf of Alaska, and we have a leftover bit of warmth from last year's record-setting El Nino that has spread north to just west of the California coast – very warm waters that go all the way over to Japan."

"If you take a look at the differentiation between the cold water in the Gulf of Alaska versus the warm water, the anomalies between Japan and California, that has created a zonal flow since October.

"Those atmospheric rivers have been grabbing a lot of moisture coming up from that warm water off the California to the Hawaii coast, and then coming into California. It's just been one right after another," Johnson said.

7 Interesting Things We've Seen With the Weather So Far in April

By Linda Lam

Apr 19 2017 02:00 PM EDT

weather.com

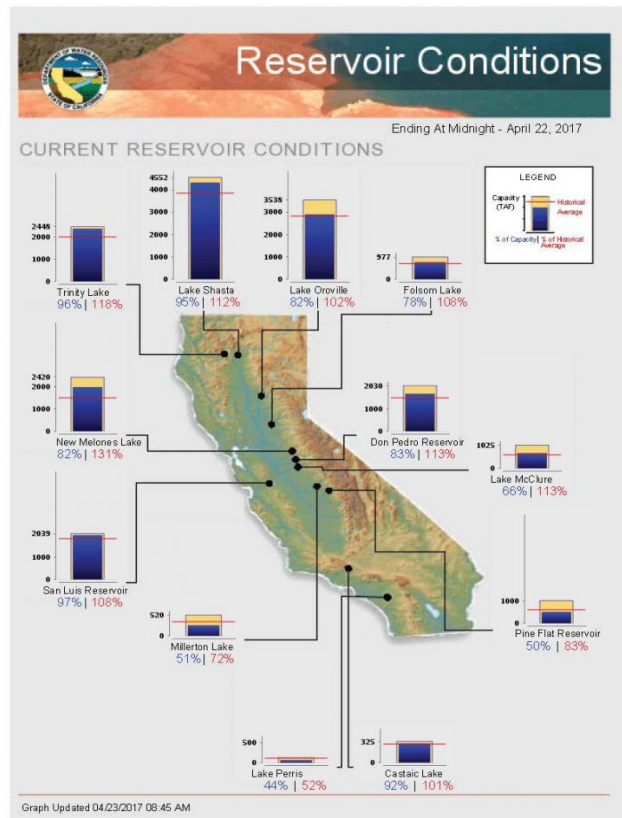
<https://weather.com/news/weather/news/april-2017-record-sierra-seattle-caribou-drought-tornado-texas-wildfires>

1) California's Northern Sierra Nevada Set Record For All-Time Wettest 'Water Year'

On April 13, California's northern Sierra Nevada set a new record for its all-time wettest water year with an accumulated average of 89.7 inches of water. The previous record of 88.5 inches was set during the 1982-83 water year. To put it in perspective, the average water year sees 50 inches of precipitation.

The water year runs from October through September, but most precipitation falls from November through March. By April, the storm track typically shifts reducing the chance for additional precipitation. This year, however, has been different with rain and mountain snow continuing to fall this month, allowing records to topple.

Reservoir Conditions



Retarded Evolution

Aubrey Bettencourt's commentary has the right measure of polemic and irony in her attack on the criminally mindless policy of saving a couple of thousand fish by shutting down 240,000 acres of farmland. Her excerpted piece and the one that is excerpted that follows, explains. The second one by Dennis Wyatt of the *Manteca Bulletin*, is also good in its discussion of the history and functioning of the state's water management system.

Let Science Speak



By [Aubrey Bettencourt](#)

Executive Director, California Water Alliance

Thursday, April 20th, 2017

<http://www.foxandhoundsdaily.com/2017/04/let-science-speak/>

No matter the crisis, the State Water Resource Control Board (SWRCB), Governor Brown and the Democratic super-majority-controlled Legislature — despite their best efforts — are no match for nature itself as has been demonstrated during six years of drought and now three and a half months of

flooding and massive infrastructure failures.

While species continue to evolve and adapt to survive, it seems our elected and appointed water policy makers and managers do not. Continuously throwing good water after bad for nearly thirty years in flawed programs has resulted in a record of failure: Threatened and endangered species dwindle and die, water quality continues to decline (especially in rural and impoverished communities) and ignored and aging infrastructure crumbles alarmingly.

Take for example the case of the unimpaired flows proposal by the SWRCB: The state would demand releasing water from key reservoirs in both wet and drought years and take 40–70 percent of the water flowing in the Stanislaus, Tuolumne and Merced Rivers. The new flow increases would be on top of nearly 30 percent already required to “aid” endangered Chinook salmon migration.

SWRCB’s sister state agency at Cal-EPA, the California Department of Water Resources (DWR), testified in January that the board’s SED proposal was “without evidence, [contained] incomplete scientific information, [was] ill-suited for real-time operations, and [based on] unverified assumptions.”

Aubrey Bettencourt is the executive director of the California Water Alliance, a statewide water policy non-profit that advocates for the water needs of California families, cities, businesses, farmers and the environment. Follow @AubBettencourt and visit CaliforniaWaterAlliance.org for more information.

Nature’s drought is over but not the ‘real’ drought

By Dennis Wyatt

April 26, 2017

<http://www.mantecabulletin.com/section/38/article/143243/>

The drought — or more precisely — the scarcity of water to support 39.8 million people as well as grow over a third of the nation’s vegetables and more than two thirds of our country’s fruits and nuts is still on. Then there is the issue of the state’s plan to commandeer 250,000 acre feet of water in a normal year and 500,000 acre feet in dry years from the Stanislaus, Tuolumne, and Merced rivers to increase the salmon population by 1,103 fish based on the best case outcome as outlined by Sacramento bureaucrats .

Should the state plan go through as presented it means big water cutbacks for Manteca, Lathrop, and Tracy as new state rules won’t allow them to make up the difference by shifting to pumping more groundwater. It will — by the state’s own admission — fallow 240,000 acres of farmland — and devastate the Northern San Joaquin Valley economy. But no worries. There might be 1,103 more salmon in any given year swimming toward the Delta where they can feed non-native bass that typically decimate their numbers before they reach the San Francisco Bay.

Shall We Call It “The Saga of the Oroville Dam?”

Maybe Orlo Guthrie or Johnny Cash would memorialize this story. As I stressed last week, the most important revelation, if we can call it that, of the Oroville Dam disaster is how fast the repair job is moving. One week to put out the bids and award the contract, ignoring all regulations, environmental studies and bureaucracy, and construction to be completed in 200 days. When something really must

be done, we can do it.

Otherwise, my reports on the dam in the weeks to come will provide those who want to follow it closely with plenty of material. Links will be provided for you. My commentary will be limited.

The first item reports on when Bill Croyle, acting director of the Department of Water Resource, told Assembly members that the emergency spillway “worked,” they were incredulous that he could say such a thing. That the emergency spillway almost caused a catastrophe seems to not be part of measuring whether something worked or not. Croyle, we are happy to say, does not work for NASA.

All of the following articles are excerpted.

State’s Water Chief: Despite Crisis, Oroville Dam’s Emergency Spillway ‘Worked’

By [Jonathan J. Cooper](#)

Associated Press April 25, 2017

<https://ww2.kqed.org/news/2017/04/25/states-water-chief-despite-crisis-oroville-dams-emergency-spillway-worked/>

SACRAMENTO — The head of California’s water agency on Tuesday repeated his assertion that an emergency spillway at the Oroville Dam worked, drawing an incredulous response from a state lawmaker who represents tens of thousands of people ordered to evacuate when it was feared erosion at the spillway could lead to catastrophic flooding.

Bill Croyle, acting director of the Department of Water Resources, faced lawmakers for the first time since the evacuations in February. Authorities feared a concrete wall at the top of the emergency spillway was on the verge of collapsing and sending a wall of water rushing uncontrolled through downstream communities.

“In my opinion it didn’t work at all,” said Assemblyman James Gallagher, a Republican who represents many of the nearly 200,000 people who were ordered to evacuate. “When it started flowing and we had that erosion cut back, to me that’s a failure. It didn’t work as designed.”

Croyle has controversially maintained since the days after the evacuation that the spillway did its job, though he’s acknowledged that the erosion was more severe than anticipated. He told lawmakers that experts did not expect water to cut through rock.

“I believe the emergency spillway worked,” Croyle said. “It performed an emergency function with the broken (main) spillway.”

Disaster expert says spillway emergency ‘developed and propagated by DWR’

By [Dan Reidel](#), *Chico Enterprise-Record*

04/19/17

<http://www.chicoer.com/general-news/20170419/disaster-expert-says-spillway-emergency-developed-and-propagated-by-dwr>

Berkeley >> A disaster expert’s review of the Oroville Dam spillway emergency says the Department of Water Resources could have prevented everything with better design, better construction and better maintenance.

Robert Bea prepared the report published Monday.



Photo: Rich Pedroncelli, Associated Press

In this Feb. 28, 2017, file photo, construction crews clear rocks away from Oroville Dam's crippled main spillway in Oroville, Calif.

Water under Oroville spillway probably caused February collapse, state consultants say

By Bettina Boxall

Los Angeles Times

April 24, 2017

<http://www.latimes.com/local/lanow/la-me-oroville-spillway-20170424-story.html>

Official reports released Monday say the catastrophic damage to [Oroville Dam](#)'s main spillway probably stemmed from swift water flows under the concrete chute, which was cracked and of uneven thickness.

The observations, contained in consultants' reports prepared for the state Department of Water Resources, echo much of [an independent assessment](#) made for UC Berkeley's Center for Catastrophic Risk Management.

But a Board of Consultants reviewing the state's repair plans noted several problems with the spillway's original design and construction.

The failure, the board said in one of two reports the state released Monday, "likely occurred as a result of high velocity flow ... penetrating under the slab, causing a strong uplift force and causing the slab to lift, eventually causing all or part of the slab to break away. Subsequent erosion of foundation material caused progressive failure both upstream and downstream."

Experts: Oroville Dam's crippled spillways can't be fully repaired this year

By Peter Fimrite

San Francisco Chronicle

April 25, 2017

<http://www.sfchronicle.com/news/article/Experts-Oroville-Dam-s-crippled-spillways-11098395.php>

A pair of crippled spillways at Oroville Dam can be repaired in part by November, but a good deal of the work will probably have to be done after the next rainy season, according to reports by an independent panel of experts.

The five-member panel, hired by the California Department of Water Resources, found during three reviews in March that reconstruction of the spillways at the nation's tallest dam — the badly mangled main chute and the eroded emergency spillway — will likely take more time than is available this year.

But there is at least enough time, the panel said, to make fixes that ensure Lake Oroville doesn't spill over and flood the region.

Power industry consultant proposes dual design Oroville Dam spillway

By Risa Johnson

KCRA - Sacramento, CA

04/26/17

<http://www.oroillemr.com/article/NB/20170426/NEWS/170429816>

Oroville >> A power industry consulting firm has proposed a design for the Oroville Dam spillways which involves not repairing the current one, but building a new, wider spillway.

The designer says the structure's capacity would handle flows of 300,000 cubic-feet per second.

Kenneth Viney, manager of CoastalGen Inc., based in Napa, filed suggestions Monday with the Federal Energy Regulatory Commission, or FERC. He said he first shared his ideas with engineers with the state Department of Water Resources about a month ago and was encouraged by FERC and DWR spokespeople to submit his plans through a FERC filing. He has not heard back from either agency since.

Upon seeing Viney's design proposal, Robert Bea said he wished it could have come sooner.

Experts review DWR secret memos

By Dan Reidel

Chico Enterprise-Record

04/26/17

<http://www.chicoer.com/general-news/20170426/experts-review-dwr-secret-memos>

Two experts weighed in on the memos that the [Board of Consultants](#) assessing the current operations and future spillway options sent to the Department of Water Resources.

The [formerly-secret memos](#) call a plan to have "the entire lower section of the chute training walls and

flip bucket be rebuilt” to be questionable.

However, the consultants looked at DWR’s [proposed plans released to the public April 6](#) and think replacing the concrete of the unbroken upper main spillway and filling the holes in the hillside with roller compact concrete as something that can be accomplished by Nov. 1, when the rainy season begins.

Coalition Asks Feds to Lift Secrecy Shrouding Oroville Spillway Project

By [Dan Brekke](#) April 21, 2017

<https://ww2.kqed.org/news/2017/04/21/coalition-asks-feds-to-lift-secrecy-shrouding-oroville-spillway-project/>

State kept these Oroville Dam documents secret at first. Now they’ve partially released two of them

By Dale Kasler and Ryan Sabalow

Sacramento Bee

April 24, 2017

<http://www.sacbee.com/news/state/california/water-and-drought/article146509604.html#storylink=cpy>

Responding to [criticism about secrecy](#) around the Oroville Dam repair effort, California officials released two redacted reports Monday from outside engineers consulting on plans to fix the dam’s battered spillways.

The consultants’ first report, which was made public in March, provided the earliest insights into the enormity of the problems facing DWR. For the first time, it became clear that the repair of Oroville’s two spillways likely would take two years to complete. DWR officials said the report shouldn’t have been made public and sealed follow-up documents, triggering a bipartisan outcry from elected officials, environmentalists and others.

The second and third reports, released Monday, provide more analysis as DWR’s repair plan took shape in the last two weeks of March. In some cases, the consultants question the direction DWR has taken, although Gutierrez said the consultants and DWR are largely on the same page. The state has hired Omaha, Neb., contractor Kiewit Corp. to handle the \$274 million repair job.

Fixing Oroville Dam will cost hundreds of millions. Who should pay the bill?

By Jim Miller

Sacramento Bee

<http://www.sacbee.com/news/politics-government/capitol-alert/article146429894.html#storylink=cpy>

The damage has been done and the [repair contract awarded](#). Yet more than two months after damaged spillways at the Oroville Dam prompted authorities to order the evacuation of 188,000 people, the question of who will ultimately pay the bill remains murky.

How much will be the responsibility of homeowners, businesses, farmers and other customers of the

more than two dozen local and regional agencies that contract with the State Water Project? The 700-mile network of canals, pipelines and lakes, including Lake Oroville, brings water mostly from Northern California to parts of the San Francisco Bay Area, Central Valley and Southern California.

What will be the cost to state taxpayers, who have approved billions of dollars in borrowing to pay for flood prevention and dam-related work, most of which has already been spoken for? Will the federal government have a role after the Trump administration's [recent approval](#) of \$274 million to cover emergency repair costs from mid-February through May?

Illegal Immigrants and Agriculture

The Associated Press article below is excerpted.

Farmers fear losing immigrant workers under Trump crackdown

By ANDREW SELSKY
Associated Press

April 24, 2017

http://hosted.ap.org/dynamic/stories/U/US_IMMIGRATION_CRACKDOWN_FARMS?SITE=AP&SECTION=HOME&TEMPLATE=DEFAULT

Fruit and vegetable growers, dairy and cattle farmers and owners of plant nurseries and vineyards have begun lobbying politicians at home and in Washington to get them to deal with immigration in a way that minimizes the harm to their livelihoods.

Some of the farm leaders are Republicans who voted for Trump and are torn, wanting border security but also mercy toward laborers who are not dangerous criminals.

Farming uses a higher percentage of illegal labor than any other U.S. industry, according to a Pew Research Center study.

Immigrants working illegally in this country accounted for about 46 percent of America's roughly 800,000 crop farmworkers in recent years, according to an Associated Press analysis of data from the U.S. Departments of Labor and Agriculture.

Stepped-up deportations could carry "significant economic implications," a 2012 U.S. Department of Agriculture study said. If America's unauthorized labor force shrank 40 percent, for example, vegetable production could drop by more than 4 percent, the study said.

The American Farm Bureau Federation says strict immigration enforcement would raise food prices 5 to 6 percent because of a drop in supply and because of the higher labor costs farmers could face.

What To Do With 100 Million Dead Trees

The following excerpted article and interview is quite extensive and worth reading for those who follow these developments.

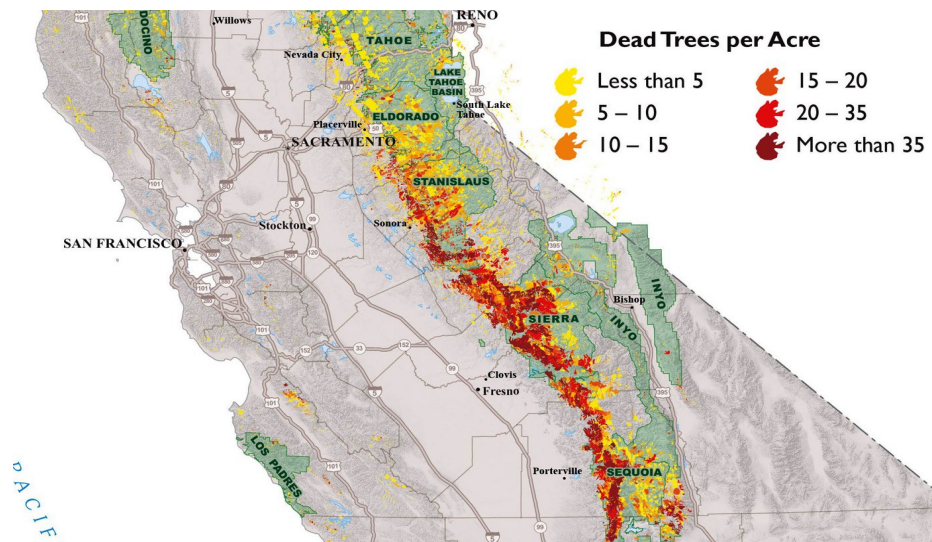
100 Million Dead Trees: A Danger That Persists Long After the Drought

By Matt Weiser

April 27, 2017

<https://www.newsdeeply.com/water/community/2017/04/27/100-million-dead-trees-a-danger-that-persists-long-after-the-drought>

An aggressive prescribed burning program is needed to manage the massive number of trees killed during the California drought. U.C. Berkeley fire scientist Scott Stephens says there's limited time to tackle the problem.



This map released in November by the U.S. Forest Service shows the concentration of trees killed in national forests between 2014 and 2016. (Image courtesy U.S. Forest Service)

The drought in California may be officially over, but that doesn't mean all the problems are fixed.

One of the biggest lasting problems from the state's five-year drought is a vast quantity of dead trees. In November the U.S. Forest Service, based on aerial surveys, estimated the drought killed more than 102 million trees on national forests in California, with the greatest concentration in the southern Sierra Nevada. New surveys set to begin in June may raise that number even higher.

Scott Stephens, U.C. Berkeley professor of fire science, says that prescribed burns are necessary to deal with California's dead trees.

Scott Stephens: The sad part is, mostly the larger trees are dying versus the smaller ones. The trees that get us most concerned are the ones that are 200, 300 years old. A lot of these are very old pines, like ponderosa and sugar pine, which aren't regenerating as well because of our management practices. So, it's taking out the linchpins of the forest ecosystem. Of course, the forest is going to continue, but it will be different.

With most of the dead standing trees, there is no plan for removal. That means in about 10 to 15 years, probably 80 percent of them will be on the ground. That's when, from a fire perspective, at least in areas of high mortality where 25 to 50 percent of the trees have died, having that much biomass on the ground available to burn ... that worries me more even than what happens in the next couple years.