

**BAY AREA WATER SUPPLY AND CONSERVATION AGENCY
BOARD POLICY COMMITTEE MEETING**

January 19, 2017

Correspondence and media coverage of interest between December 16, 2016 and January 12, 2017

Media Coverage

Regional Water System

Date: January 2, 2017
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Article: Hetch Hetchy Mountain Tunnel To Close for 2-Month Inspection And Repairs

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Source: Sacramento Bee
Article: California's water policy at potential tipping point

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Source: Triple Pundit
Article: How California Plans to Make Water Conservation a 'Way of Life'

Date: December 31, 2016
Source: Modesto Bee
Article: SF gets its turn to critique river flow plan

Date: December 31, 2016
Source: Washington Post
Article: California Officials say a new plan will make water conservation 'a way of life'

Date: December 28, 2016
Source: New York Times
Article: California Today: A Battle Over the San Joaquin River

Water Supply:

Date: January 12, 2017
Source: Sacramento Bee
Article: Northern California has escaped the drought. Can it carry the state?

Date: January 12, 2017
Source: Mercury News
Article: Is California's long drought finally coming to an end?

Date: January 12, 2017
Source: NPR
Article: As Rains Soak California, Farmers Test How to Store Water Underground

Date: January 12, 2017
Source: SF Gate
Article: Officials: More than 40 percent of California out of drought

Date: January 11, 2017
Source: Water Deeply
Article: Why Record Precipitation May Not Be a Cure-All for California Water Issues

Date: January 11, 2017
Source: The Ceres Courier
Article: What drought?

Date: January 11, 2017
Source: Fresno Bee
Article: Reservoirs starting to fill in California, but nobody's saying the drought is over

Date: January 10, 2017
Source: And Now U Know
Article: California Reservoirs see 350 Billion Gallons of Water in Storm Succession

Date: January 10, 2017
Source: San Jose Mercury News
Article: Bay Area storm: More rain and snow leave drought farther behind

Date: January 10, 2017
Source: Capital Press
Article: California storms help fill reservoirs but slow ag work

Date: January 10, 2017
Source: Fresno Bee
Article: Farmers and water districts hope storm runoff can help replenish underground supplies

Date: January 8, 2017
Source: San Francisco Chronicle
Article: Too soon to call an end to California's drought

Water Projects:

Date: January 12, 2017
Source: Sacramento Bee
Article: Lawmakers tour location of proposed Sites Reservoir

Water Projects, cont'd.:

Date: January 4, 2017
Source: The Press Democrat
Article: Obama administration aids giant California water project

Date: January 4, 2017
Source: YubaNet.com
Article: Secretary Jewell Lays out Strategy to Address Impacts of Drought and Climate Change in California

Date: December 16, 2016
Source: Maven's Notebook
Article: President Obama signs the Water Infrastructure Improvements for the Nation (WIIN) Act

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San Francisco's main water supply shut down for 60 day inspection

Officials are cutting off the Hetch Hetchy flow to San Francisco's main water supply for a 60 day inspection, altering where over 2 million residents will get their drinking water. (KGO-TV)

ABC 7 News | January 2, 2017 | Katie Utehs

SAN FRANCISCO, Calif. (KGO) -- Access to San Francisco's main water supply is being shut down for 60 days to inspect a nearly 100-year-old tunnel.

Hidden in the Sierra Nevada is an 18 mile long mountain tunnel that streams water into the Bay Area.

"Just walking through a mountain and the walls are granite, that's what the unlined portion looks," said Charles Sheehan of the San Francisco Public Utilities Commission. "So if you think of driving through a tunnel it looks more like that."

Sheehan says the nearly 100-year-old Hetch Hetchy system shows some wear. "In our last inspection we noted that there was some deterioration of the lining of the tunnel," he told ABC7 News.

Officials are cutting off the Hetch Hetchy flow to inspect the tunnel Tuesday. The 60 day shut down is twice as long as usual inspections.

Five regional reservoirs are already in service and have been for a few weeks. The 2.6 million people served by Hetch Hetchy shouldn't notice a difference at the tap. This inspection is different. It determines the fate of the mountain tunnel.

The shutdown ends in early March then the SFPUC will make a decision in the coming months.

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To watch: <http://abc7news.com/news/sfs-main-water-supply-shut-down-for-60-day-inspection/1683421/>

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Hetch Hetchy Mountain Tunnel To Close For 2-Month Inspection And Repairs

CBS SF Bay Area | January 2, 2017 | Cate Cauquiran

SAN FRANCISCO (KPIX) — On Tuesday, inspections to Hetch Hetchy Mountain Tunnel, a century-old artery connecting water from the Sierra reservoir to San Francisco taps, will begin.

The San Francisco Public Utilities Commission says that, typically, the pipeline is closed for about a month of maintenance work every other year. This time, it will close for 60 days. “We’ve known that some of the lining (in the tunnel) is deteriorating and it’s now time to go in there and make that assessment and begin repairs,” SF PUC spokesman Charles Sheehan told KPIX.

The inspection should let PUC experts know whether Mountain Tunnel can be repaired or if it needs to be supplemented with a new conduit.

“It would be close to the original one but, once that went into service, you would have two tunnels and we are looking at that as an advantage because redundancy in your water system is always a good thing,” Sheehan said.

A new tunnel would cost \$620 million to build and would take years.

For the next two months, water to the peninsula will be coming from four local reservoirs and two treatment plants in San Bruno and Half Moon Bay.

“Customers shouldn’t notice a difference,” Sheehan assured us. “We’re always using different parts of our system and all our reservoirs are high-quality water sources,” he added.

The PUC began the switchover from Hetch Hetchy about two weeks ago but will be completed on Tuesday.

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To watch: <http://sanfrancisco.cbslocal.com/2017/01/02/hetch-hetchy-reservoir-mountain-tunnel-closure/>

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San Francisco will have to do without Hetch Hetchy water for the next 2 months

KTVU | January 2, 2017 | Tara Moriarty

SAN FRANCISCO (KTVU) - The main water supply for San Francisco and other Bay Area cities will be cut off for the next two months starting today due to safety inspections.

Officials have drained Mountain Tunnel and are now ready to survey and make necessary repairs to the 100-year old artery. It connects Bay Area faucets to the Hetch Hetchy Reservoir in Yosemite National Park, which provides San Francisco and the Northern Peninsula with 85 percent of its water. The 19 mile artery is at risk of collapsing.

Typically San Francisco receives 15 percent of its water from local reservoirs, including the San Andreas and Crystal Springs Reservoirs. KTVU's Tara Moriarty visited the Harry Tracy

Water Treatment Plant in San Bruno where normally the facility treats and cranks out 40 million gallons of water but today, it was producing twice that amount.

"This is where the 80 million gallons is coming in right now," said Betsy Lauppe Rhodes, a spokesperson for the SF Public Utilities Commission, as she pointed to an underground mini Niagara Falls of sorts. The plant has been preparing for months for the Mountain Tunnel closure by upgrading its filter systems.

"We've got plenty of water in our local reservoirs and so customers are going to turn on their tap and they're really not going to notice a difference," explained Charles Sheehan of the SFPUC. "We're going to be conducting an assessment [of the Mountain Tunnel] to see if we need to build a new tunnel in the future or if we need to periodic shutdowns each year to do repairs and upgrades,"

The inspection to the Mountain Tunnel is critical as a collapse in the system could take \$270 days and cost more than \$100 million to repair. To replace the artery entirely, it would cost \$620 million.

The pipeline normally closes for maintenance for one month each year, but the last time it closed for two months was in 1980. That time the shutdown was also due to an inspection and things went smoothly.

For now, SFPUC officials say treatment plants in San Bruno, Sunol and Half Moon Bay will pump out 150 million gallons of clean water each day to compensate for the loss of Hetch Hetchy's stores.

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To watch: <http://www.ktvu.com/news/226912880-story>

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Combatting The Water Board's Plan

Water Diversion Could Cause Businesses to Leave, Group Says

California Ag Today | January 10, 2017 | Brian German

The State Water Resources Control Board recently held a public hearing to receive input on its Bay-Delta Water Quality Control Plan. The proposal would force the Modesto and Turlock irrigation districts to dedicate 40 percent of unimpaired flows along the Tuolumne River to benefit fish and wildlife. David White is the CEO of Opportunity Stanislaus, a company that is all about improving the economic vitality of Stanislaus County. He noted how the proposal will negatively impact the local economy.

"We're going to lose at least 14,000 jobs, good paying jobs. ... They didn't take into consideration all the processors we have here," White said.

The Bay-Delta Plan is required to be updated every three years by the State Water Board. The purpose is to identify the best use of water supplies and set quality objectives for the Bay-Delta. The Plan also establishes a system of implementation for achieving those water quality objectives. The effects of the proposal would be detrimental to some of the major operations in the area.

"You talk about E. & J. Gallo. You think about Del Monte, Seneca, Stanislaus Food Products. We have multi-billion dollar companies here that depend on water as their life blood. If they don't have their water ... they might have to leave. They're going to have to go where they can find that natural resource," White said.

Historically, Modesto and Turlock irrigation districts have managed surface water and groundwater in a natural, interdependent manner to keep groundwater quantity and quality sustainable. Because of their policies, both districts' groundwater sub-basins are the only ones in the San Joaquin Valley that not listed in conditions of critical overdraft. The current proposal from the State Water Board would make it nearly impossible for the region to establish groundwater sustainability. It will also cause some operations to consider relocating.

"You can't process food without water, and you can't build an economy, you can't sustain an economy like we have here, without water. It's a vital resource," White said.

Opportunity Stanislaus is an economic development organization that provides services to businesses that will help them expand and succeed. "Our job is to help local businesses grow, help attract new businesses and help really drive a workforce, helping to improve the workforce here locally," White explained.

Fighting back against proposals like the one from the State Water Board is exactly what the organization stands for. "We're totally behind defeating this. ... Our board, our investors, we're all about trying to sustain our local economy," White said.

For more information go to <https://worthyourfight.org>

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California's water policy at potential tipping point

Sacramento Bee | January 10, 2017 | Jay Ziegler

Recent rain and snowfall conditions have us all hoping 2017 may be a wet year and offer a break in our six-year drought.

But whether the drought is broken or not, Californians must act this year to achieve more sustainable long-term water management. California operates at a water deficit. Even in wet years, we use more surface and groundwater than is replenished by rainfall. It is not sustainable.

The recently enacted federal California drought bill and the arrival of a Trump administration will place additional pressure on California's ability to manage water for the benefit of all the things we care about including wildlife, agriculture and cities.

The federal drought bill is designed expressly to "maximize water exports" from the Sacramento-San Joaquin Delta while maintaining minimal standards for river flows under the Endangered Species Act. Whether this formula can stabilize endangered salmon runs is a fundamental question, one likely to be decided in court.

Amid the turmoil, what happens in California in 2017 and 2018, during Gov. Jerry Brown's remaining years in office, may go a long way to determining whether our state has the resolve to manage its limited water resources more sustainably.

Under Brown and the Legislature's leadership, California has made important progress. The state has enacted reforms to encourage conservation and reduce reliance on the Delta as a source of Central Valley, Southern California and Silicon Valley water.

We achieved critically important groundwater management reforms, erasing California's legacy as being the last state in the West to manage its groundwater. Californians approved a \$7 billion water bond to help improve water supplies for people and nature and develop alternative water supplies via recycling and storm water capture and water storage among other pathways.

In response to the drought, the State Water Resources Control Board enacted short-term drought conservation measures and is undertaking a path to establish long-term conservation standards to improve water use efficiency. The board is also driving an updated plan to improve water quality in the Sacramento and San Joaquin rivers and the San Francisco Bay-Delta.

The challenge ahead is that all of these measures must advance beyond where we stand today.

California has an opportunity to realistically embrace and address our water management challenges with practical solutions. Critical benchmarks include:

- Establishing a meaningful update of the Bay-Delta Water Quality plan that includes additional flows in our rivers to San Francisco Bay and enhanced habitat requirements.
- Increasing monitoring of the flows in our rivers and streams and groundwater to better understand our actual water conditions.

- Developing water financing reforms to protect and fund water quality in streams and aquifers, develop alternative water supplies from stormwater and recycling, and to clean up contaminated groundwater.

Finally, the twin tunnels water conveyance is expected to receive permits from state and federal regulatory agencies this year. But questions remain, not the least of which is whether those permits would ensure that the project is operated in a manner to reduce water exports from the Delta consistent with California law.

The reality of climate change is upon us. There will be longer and more severe droughts, and wetter and warmer winters.

If we don't act now, we will face greater scarcity, more uncertainty and more pitched battles. Solutions for our water, groundwater and flood management won't come easily, and they will require significant investment. We will need more creativity, more technology and more resolve. In the balance is whether California can find a sustainable path to manage water in a way that benefits all of us.

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How California Plans To Make Water Conservation a ‘Way of Life’

Triple Pundit | January 9, 2017 | Gina-Marie Cheeseman

California is in the midst of its sixth straight year of drought, so conserving water must become a daily practice for Golden State residents. Enter the state’s draft plan to make water conservation a “way of life.” Put forth at the behest of Gov. Jerry Brown, the plan aims to achieve long-term efficient water use and meet drought preparedness goals.

The plan builds on the executive order Gov. Brown issued last May that requires the state to do several key things, including use water more wisely. It “represents a shift from statewide mandates to a set of conservation standards applied based on local circumstances, including population, temperature, leaks, and types of commercial and industrial use,” wrote the state agencies behind the framework.

The Department of Water Resources (DWR) and the State Water Board will now require urban water suppliers to report monthly on water use, conservation and enforcement. Both the DWR and State Water Board will develop new water-efficiency targets as a framework for urban water agencies. The targets will be customized to fit the conditions of each urban water supplier.

The executive order also required the following:

Eliminate water waste. Wasteful practices like hosing off sidewalks and driveways, washing cars with hoses lacking a shut-off nozzle, and watering lawns in a way that causes run-off will be permanently prohibited. Those practices have been temporarily prohibited since emergency water conservation efforts began in July 2014.

For its part, the State Water Board and the DWR will take actions to minimize water system leaks across the state which continue to waste large amounts of water. Over 700,000 acre-feet of water a year are estimated to be lost due to leaks. That is enough water to supply 1.4 million homes for a year.

Strengthen local drought resilience. The DWR will strengthen the standards for local water shortage contingency plans, which are part of the management plans that water districts are required to submit every five years. Districts will plan for droughts lasting at least five years, plus more frequent and severe periods of drought under the new, strengthened standards.

Improve agricultural water efficiency and drought planning. The existing requirements for agricultural water management plans will be updated so irrigation districts are able to quantify their customers’ water use and plan for water supply shortages. Under current law, agricultural water districts serving 25,000 acres or more are required to file water management plans, but the executive order requires irrigation districts serving 10,000 acres or more to file plans as well.

The water reductions Californians achieved during drought must continue

Californians have greatly reduced water use since Gov. Brown issued mandatory statewide water restrictions in April 2015.

The state cumulatively cut water use by 22.6 percent from June 2015 to November of last year, compared with the same months in 2013. That totals 2.35 million acre-feet of water, enough to supply over 11 million people — or over a quarter of the state’s population — for a year. Despite

the lifting of the mandatory water restrictions last May, some water suppliers actually saw increased conservation levels.

Although California received more rainfall last year, snowpack levels are still low. The DWR's snow survey at Phillips Station in the Sierra Nevada range found a snow-water equivalence of six inches, which is 5.3 inches less than the average for early January. Electronic readings from 105 stations throughout the Sierra Nevada found that the water content of the northern Sierra snowpack is 7.2 inches, which is only 68 percent of the multi-decade average for this time of the year. The readings for central and southern Sierra are 65 percent and 73 percent of average, respectively. Statewide snowpack was 30 percent below average as of Jan. 3.

The current snowpack conditions might just become routine because of climate change, a new study by UCLA researchers found. The study predicted that during April snow-covered areas could be reduced by 48 percent by the end of the century, making the state's plans to make water conservation a way of life that much more important.

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SF gets its turn to critique river flow plan

Modesto Bee | December 31, 2016 | John Holland

Bay Area users of the Tuolumne River will get their chance Tuesday to weigh in on the state's plan to increase stream flows.

A hearing in Sacramento will be the last in a series on the State Water Resources Control Board's proposal for the Tuolumne, Stanislaus and Merced rivers.

The board already has heard from hundreds of opponents, many of them farmers, at hearing sessions in Modesto, Merced and Stockton. Environmental and fishing groups made the case for even higher flows than the state proposed.

Tuesday's agenda includes the San Francisco Public Utilities Commission, which runs that city's water system and provides wholesale supplies for parts of San Mateo, Santa Clara and Alameda counties. About 85 percent of the water comes from the Tuolumne.

The managers oppose the state plan, which would reduce supplies by an estimated 14 percent in average years and 38 percent in "critically dry" years on the three rivers overall.

"We can't conserve our way out of this," said a guest column in the San Francisco Chronicle by PUC General Manager Harlan Kelly and Nicole Sandkulla, CEO and general manager of the Bay Area Water Supply and Conservation Agency. "Water is our lifeblood. The consequences of these cutbacks potentially could cripple our Bay Area economy."

The Tuolumne River Trust already has testified before the state board about the Bay Area water use. The group argued that demand has dropped thanks to conservation efforts and there is potential for more. It also noted that the region's economy has boomed during this time.

San Francisco diverts its share of the Tuolumne far upstream of Don Pedro Reservoir, the main storage for the Modesto and Turlock irrigation districts.

The state board will take public comment until March 17 and could make a final decision later in 2017.

Tuesday's agenda includes scheduled presentations by other water suppliers, fishing groups, and state and federal agencies involved with the rivers. Members of the general public can speak for up to three minutes each.

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California officials say a new plan will make water conservation ‘a way of life’

Washington Post | December 31, 2016 | Darryl Fears

SANTA MONICA, Calif. — Here in the land of beauty and make-believe, it's important to keep up appearances. Tracy Quinn sees it whenever she walks her dog: sprinklers irrigating pretty green lawns and wasted water bleeding across sidewalks during the state's driest spell in centuries.

"It drives me crazy," said Quinn, a water policy analyst for the Natural Resources Defense Council.

But now California is preparing for a dramatic change in how its residents use water. A water management plan that could be finalized in January is designed to make conservation "a way of life."

"I think it's a really great way to go," Quinn said.

California is entering its sixth year of extreme drought, and it has enacted water restriction plans before. In 2015, Gov. Jerry Brown (D) declared that watering grass every day was "going to be a thing of the past." He issued an executive order that forced the state's 410 water agencies to cut up to 36 percent of their water use, compared with 2013.

The new plan would instead give each water agency a budget for how much water its customers are allowed to use. Each agency's allowance would be based on estimates from state officials of its demographics — population, economy, outdoor temperature, tree canopy and even the rate of water evaporation — to determine its need.

Many agencies will be forced to purchase costly technology that detects even the smallest leaks in water lines and to hire data analysts to record and report water use. An association that represents California water agencies said it has yet to examine the overall cost but predicted it would easily surpass \$1 billion.

For the first time, farms in the state would be required to account for nearly every drop of water they pull from aquifers they are depleting, often to grow thirsty cash crops such as almonds and rice that require extensive irrigation in naturally dry conditions.

The proposal, "Making Water Conservation a Way of Life," must overcome a slew of public and legislative debates over the next three years before implementation, but it is being embraced by strange bedfellows: the Association of California Water Agencies and environmental groups such as California Coastkeeper Alliance that often battle the association over water.

"It's sweeping change that builds on the lessons learned during the drought," said Max Gomberg, the climate and conservation manager for the state Water Resources Control Board, which governs water agencies. "We are setting new water efficiency targets for suppliers that serve 34 million people."

"We're not telling them how to meet their budgets. We're just telling them they have to stay within their budgets," he said. "If you stay under budget, kudos. If you go over budget, the state steps in."

Irrigation water runs along a dried-up ditch between rice farms in Richvale, Calif. (Jae C. Hong/Associated Press)

The penalty for going over budget is one of the many things that state water officials, lobbyists and lawmakers will have to negotiate. What's important now, Gomberg said, is that there is a new path forward.

During the state's emergency drought response two years ago, "we realized . . . we didn't have a regulatory structure dealing with leaks" in cities, Gomberg said, and "we didn't know how much water was being lost" in rural areas, where farmers were never required to report their groundwater use.

Scientists say there is no end in sight for California's drought. The dry stretch that started in 2011 has killed more than 100 million trees, increased the chances of wildfires, wiped out dozens of farms, dried sections of rivers and threatened the state's salmon fishery, killed unknown quantities of wildlife and left entire communities without running water.

San Diego County built the largest desalination plant in the nation, pulling salt water from the ocean. Santa Barbara is following suit, seeking to restart a mothballed desalination plant as a reservoir that serves the county, Lake Cachuma, goes almost dry. In East Porterville, near Fresno, residents couldn't bathe or flush their toilets after their wells stopped pumping.

Setting water budgets will involve a lot of technical work in the nation's most populous state — and, before the drought, one of the most irresponsible when it came to water management.

For example, until recently even major cities, including the capital, Sacramento, did not require homes and businesses to have water meters. Now California will require thousands of sophisticated meters and will combine satellite technology and aerial flight data to study the state's topography to see which areas have the most pavement, grass and even the most shade to determine how much irrigation they need.

Foggy San Francisco's water budget will be different from dry and highly populated Los Angeles's, Gomberg said. Bakersfield, near the relatively wet Sierra Nevada, will have a budget that differs from Riverside, near dry desert mountains.

"I'm not going to say it's perfect," said Quinn of the Natural Resources Defense Council, "but the framework the governor put out is smart, and the potential implementation is smart for the way we manage water in California."

The executive director of the Association of California Water Agencies, Tim Quinn (who is not related to Tracy Quinn), was equally positive. "We're fully supportive of this effort," he said.

Association members are not of one mind on the proposal, but "one reason a lot of our members like this budget-based approach is . . . we believe it allows agencies to adapt to their own circumstances" rather than facing a one-size-fits-all solution.

But some smaller agencies that lack money for pricey gadgets and new staffers are worried. In webinars held by the association, member agencies that serve few customers have wondered aloud whether the old order — reducing a percentage of water use — would allow them to sidestep the costs.

“No one is looking for a way out; we’re just having a discussion . . . about what’s the best way to do it,” Quinn said.

At the Moulton Niguel Water District in south Orange County near Laguna Beach, which already monitors nearly every drop of water, the cost of new meters, leak detection equipment, a consulting analyst and increased staff work hours amounted to \$78,000 yearly.

But the investment was worth it, said Joone Lopez, the district’s general manager. Leaking water is money down the drain. “It’s not only the water loss but also loss in revenue, so it makes sense to do water audits for a variety of reasons,” Lopez said.

That is why big agencies that fought the executive order to cut at least a quarter of their water use in many cases prefer the new approach. Cutting water use hurt revenue and profit margins, sometimes resulting in losses. A budget based on their needs and their ability to monitor and account for water puts destiny in their own hands.

Californians should expect a drier future, said Sara Aminzadeh, executive director of the California Coastkeeper Alliance, based in San Francisco. “We’re going to be experiencing more drought, and more severe drought with less rain and snow.”

Scientists at Stanford University predicted that the state’s temperatures will keep rising as precipitation falls, and scientists at NASA and Columbia University said that if the climate continues to warm without decreases in greenhouse-gas emissions, California and the Southwest will face a megadrought — extreme dry conditions that last 30 years.

The proposal, Aminzadeh said, “is a new ethic for our state, that water conservation is part of our way of life. We’re not just lurching from one drought to the next. We’re putting in place a long-term plan. It just feels like things are coming together.”

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California Today: A Battle Over the San Joaquin River

New York Times | December 28, 2016 | Mike McPhate

The San Francisco Bay estuary is in crisis.

Half a dozen fish species are inching toward extinction, scientists at the Bay Institute say. Higher up the food chain, whales, seals and pelicans are going hungry. At the same time, thousands of fishing jobs have vanished.

Now, after a decade of work, California water officials are finalizing a more than 3,000-page plan to tackle the problem.

But the so-called Bay-Delta plan is shaping up to be among the most contentious battles of California's long-running water wars.

At the heart of the conflict is control over the San Joaquin River and its three main tributaries. Originating in the Sierra Nevada, the rivers eventually drain into the Bay estuary, feeding its unique ecosystem.

But along the way, they snake through the drought-hit farm communities of the San Joaquin Valley and a gantlet of dams and diversions for crop irrigation.

In dry years, frequently less than 20 percent of the rivers complete the trip toward the Bay estuary, straining fish populations including the storied chinook salmon runs.

The State Water Resources Control Board wants to raise the flow of the San Joaquin and the tributary Merced, Stanislaus and Tuolumne Rivers to 40 percent of their natural flow during the critical spring months.

But that target seems only to have angered both sides in the debate. Environmental groups say it's too low; farmers and leaders in the valley say it would cripple their economies.

"You are the grim reaper," Assemblyman Adam Gray, whose district includes Merced, told members of the board at one of a series of public hearings in the San Joaquin Valley this month.

"Water is life in this region, and you appear to have no other purpose than to take that life away."

No matter the final shape of the plan, state officials acknowledge it will have major consequences for wildlife, businesses and jobs. (The state has estimated a \$64 million hit to the farming economy; agricultural leaders say it would be much higher.)

"We're dealing with this very complex puzzle," said Felicia Marcus, chairwoman of the water resources board. "There's no sweet spot here."

At the public hearing in Merced this month, a standing-room-only crowd showed up to hear from the board and voice their concerns. Outside, about 30 tractors paraded through the streets in protest with signs that read: "Farmers Fed-Up".

Louie Bandoni, an almond farmer, was among them. Speaking by phone outside the hearing, he said it felt as if state leaders were trying to put farmers out of business over a few fish.

"In California, we're being bombarded with regulations," Mr. Bandoni said.

He cited new minimum wage and overtime rules and caps on methane emissions from livestock.

“And now they’re going after our water,” he said. “We’re just to the point as farmers — we’re just fed up. We don’t know which way to turn.”

The water board plans to make its final decision by summer.

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Northern California has escaped the drought. Can it carry the state?

Sacramento Bee | January 12, 2017 | Dale Kasler, Phillip Reese and Ryan Sabalow

After five years, is the drought over? The feds seem to think so, at least as far as Sacramento and most of Northern California are concerned.

Thanks to an unusually wet winter, the closely watched U.S. Drought Monitor reported Thursday that 42 percent of California now is considered free of drought. That includes Northern California from the Bay Area to the Oregon border. When the “water year” began in October, only 17 percent of the state was drought free, and a year ago the figure was 3 percent.

Several other experts agreed that considerable progress has been made in alleviating the drought.

Gov. Jerry Brown, however, sees the rain gauge half empty.

Despite the heavy rainstorms of the past week, Brown’s administration stressed Thursday that because the state’s water needs are inextricably linked, the drought can’t be considered over as long as the southern half of the state remains seriously depleted.

“Drought conditions persist in a majority of the state, and the governor’s emergency drought declaration is a statewide declaration,” said spokeswoman Nancy Vogel of the Natural Resources Agency. Vogel added that the Drought Monitor “doesn’t give the full picture in California” and overlooks chronic problems such as the rampant pumping of groundwater in recent years. “They take a short-term view of how drought is defined.”

In scientific terms, California’s drought began more than five years ago, when the state endured the first of a series of severely dry winters. In terms of official state policy, it began in January 2014, when Brown issued his first drought emergency proclamation. A year later, he used his authority to impose significant cutbacks in urban water use and other conservation measures. There’s no official standard for declaring the drought over, Vogel said. And as long as it’s in place, the governor retains broad power over water use.

The Drought Monitor’s update Thursday touched off a debate over the effects of this winter’s precipitation. State officials argue that the cumulative years of dry weather in much of California have left impacts too great to overcome with a few weeks of rain and snow.

“In some of these areas, the (water) deficits are so large,” said state climatologist Michael Anderson of the California Department of Water Resources. “On the whole, we gained ground ... but did it solve all our problems? No.”

Officials with the Drought Monitor, which is updated weekly by the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the National Drought Mitigation Center at the University of Nebraska, said their analysis squares with the facts on the ground. The monitor’s results are based on precipitation volumes, depth of the Sierra Nevada snowpack, water levels in the key reservoirs, groundwater conditions and strength of river flows.

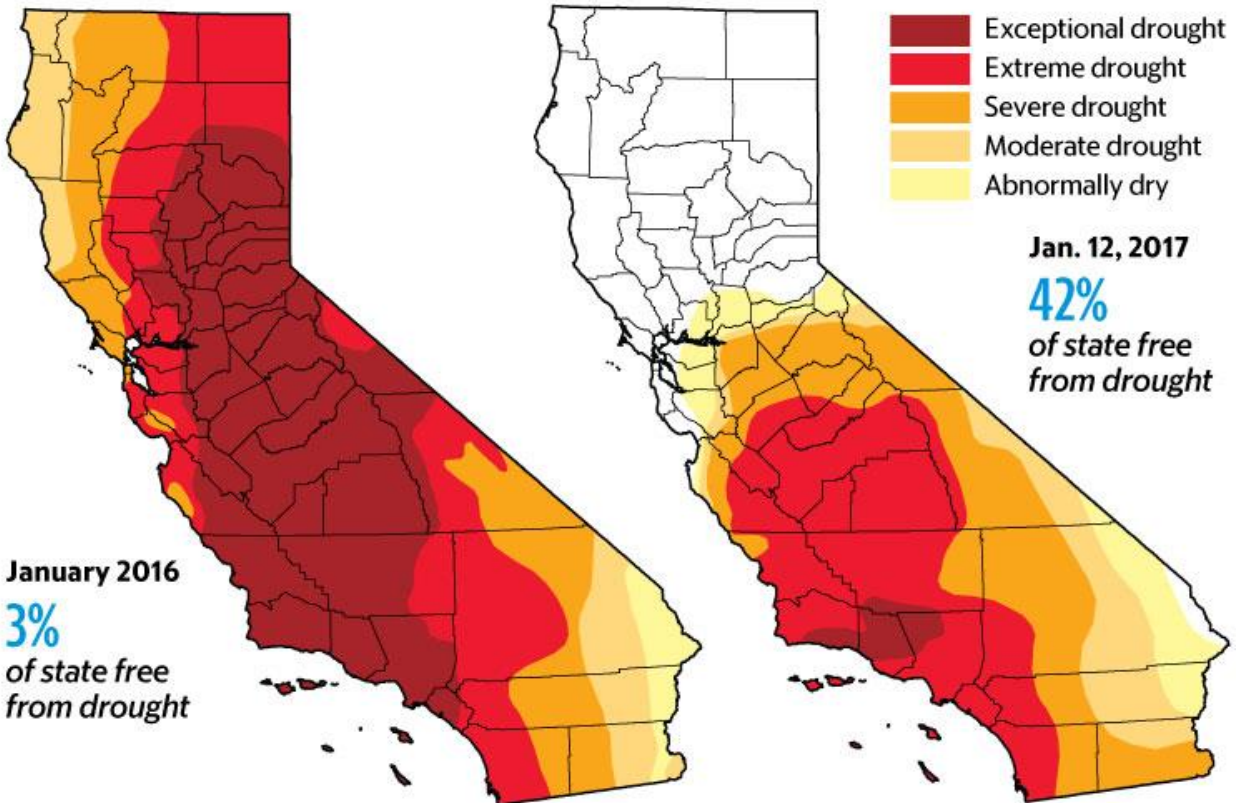
David Miskus, a senior meteorologist at the U.S. Climate Prediction Center, said that most of California’s major reservoirs hold above-average amounts of water, that Sierra snowpack levels

are well above normal and that the Northern Sierra is on pace for its wettest water year in recorded history. Miskus prepared the drought monitor analysis this week.

“Overall, a very good picture in California,” Miskus said. “From L.A. northward, there are improvements.”

The state’s drought status

Almost all of northern California is out of drought conditions, according to a new report. How conditions compare to one year ago:



Source: U.S. Drought Monitor

The monitor doesn’t claim California’s water problems have ended. Several counties such as Sacramento, while drought-free, are still considered “abnormally dry.” Drought persists in much of Southern California and the San Joaquin Valley, which are home to 26 million people.

With so much of the state still dry, Michelle Mead of the National Weather Service in Sacramento said it’s too early to declare victory. “Keep in mind it’s a whole state picture,” she said.

That’s because California’s plumbing is interwoven. Northern California needs enough water not only for its own needs but to buoy the arid southern half of the state.

Vogel and others noted that the rains can stop abruptly, cutting short a wet season that's supposed to run into April. "It's early in the water season, and we know from experience that storms can cease," Vogel said.

Even so, many experts say there's no question the state's water situation has improved as a whole because of the storms.

A substantial amount of the Northern California storm runoff is being captured by huge pumps in the Sacramento-San Joaquin Delta, the hub of California's north-to-south water delivery network. The U.S. Bureau of Reclamation's pumps are running at full capacity. The larger and more powerful State Water Project pumps, though somewhat limited because of concerns over the effects on migrating fish, are expected to reach full capacity by the weekend, said Ted Thomas, a spokesman for the state Department of Water Resources.

Bill Patzert, a climatologist at the NASA Jet Propulsion Laboratory near Pasadena, said: "We're well on our way to being out of this drought." Even normally dry Southern California is getting decent rainfall this winter, with Los Angeles receiving almost four-tenths of an inch Wednesday.

Around 40 percent of Southern California's water supply comes from local sources. The rest comes mostly from the Colorado River and Northern California.

Deven Upadhyay of the Metropolitan Water District of Southern California said the local rains that have fallen in the south state have started to boost local reservoirs and groundwater recharge centers. Combined with a strong start to Northern California's winter and above-average snowpack in the vast area that supplies the Colorado River, he's optimistic that 2016 could allow Southern California to erase some of its water deficit.

"We're just starting to turn the tide," he said. "We had multiple years where we were pulling out of storage and we had storage declines, and it's going to take us a while to chip away at that and get more water back into reserves and into groundwater basins. It doesn't happen instantaneously, but this is certainly a good trend for us."

Patzert also cautioned, however, that California's water problems are an ever-present issue. Over the long haul, "it's a 17-year drought, with one or two good wet years thrown in," he said. "Drought and water issues are always lurking over the horizon."

To that end, the head of the State Water Resources Control Board pledged to continue a campaign to make conservation a way of life. Although the board has relaxed its urban conservation rules this year, Chairwoman Felicia Marcus said she hopes "this drought has been big enough to make a dent in the drought-denial cycle."

The drought is clearly a major calamity in some parts of the state. Vogel said Santa Barbara's main water source, Lake Cachuma, is just 8 percent full.

"Santa Barbara County is still within extreme conditions, as far as the drought is concerned," said Ray Stokes of the Central Coast Water Authority, which serves the region.

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Is California's long drought finally coming to an end?

Mercury News | January 12, 2017 | Patrick May

Go ahead. Google "California" and see what that auto-fill brings you.

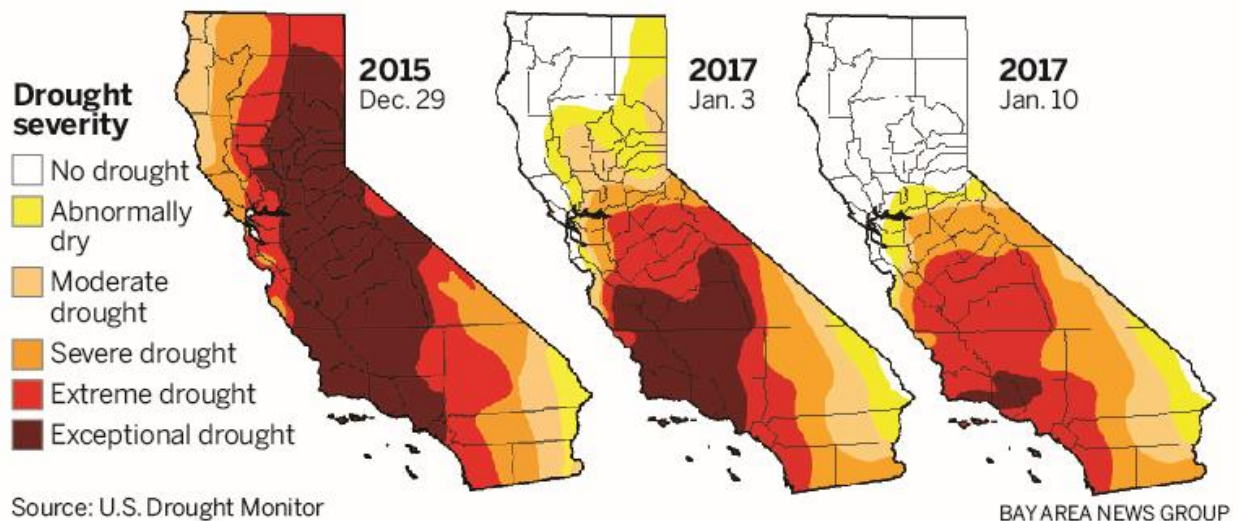
You guessed it . . . "California drought."

After five long years of Google searches, parched throats, yellowed lawns and having to listen to an endless mantra of water-conservation warnings from every branch of government imaginable, we are now finally out of drought land.

Kinda, sorta, but not really.

CALIFORNIA'S DROUGHT WEAKENS

Because of this winter's intense storms, 42 percent of California is no longer in drought, up from just 3 percent a year ago.



Yes, the 20 inches of rain and 10 foot of snow we've received since the new year began helped put us back into the black, meteorologically speaking. As the National Weather Service's office in Reno tweeted, "Bye bye drought ... Don't let the door hit you on the way out."

But hold on. It turns out we are only partially drought-free. According to the U.S. Drought Monitor, nearly 60 percent of the state (think LA and the Central Valley) remains in that dire state. And while that other 40-percent drought-free swath is certainly welcome, considering drought covered 97 percent of the state early 2013, we are, in fact, still there.

To be sure, good signs abound. Since the fall, total precipitation in the Sierra Nevada has been on a real roll, climbing to rates that rival some of the wettest winters on the books. Parched reservoirs have recently gotten a 350-billion-gallon boost thanks to our winter storm of 2017. Lake Shasta, which is the mother of all California reservoirs, now has so much water — at 81 percent of capacity and climbing — that managers are obliged to release some of the water to make room for the other water they're expecting in the future. And the reservoir in Oroville, which provides water to the State Water Project, is almost three-quarters full.

But about that “drought’s over” thing? Merriam-Webster defines drought as “a period of dryness especially when prolonged; specifically one that causes extensive damage to crops or prevents their successful growth”

Yup, much of the state is still there. Or, as Northern California is thinking right now about Southern California: Why can’t you get your act together and get out of drought like we have?’

Drought opinions are all over the map, nuanced at times, contradictory at other times, and always fun to listen to as the water experts talk circles around the subject. Just listen to what they’ve been telling reporters this week:

Deven Upadhyay with the Metropolitan Water District of Southern California: “We can’t say that we’re no longer feeling the impacts of the drought. Later this year, we may be able to say that we’ve really turned the tide and the drought’s over. But we’re not there yet.”

Michael Anderson, a climatologist with the California Department of Water Resource: “We’re getting better in places, but not in others. We’ve got a mixed bag of conditions going on right now.”

Jay Lund, director of the Center for Watershed Sciences at the University of California at Davis: “It’s hard to say we have a drought here right now.”

Steve Anderson, a meteorologist at the National Weather Service office in Monterey: “Everything is on the way down.”

Maury Roos, the state hydrologist with the Department of Water Resources: “The situation in the north is good. We’re very blessed with these storms and the water they have added. But there are still a lot of water problems in the south, and the southern end of the Central Valley.”

David Miskus, a senior meteorologist at the U.S. Climate Prediction Center: “Overall, a very good picture in California.”

And Mark Finan, chief meteorologist for KCRA in Sacramento: “There is no way this could be considered a drought year. But then you get into politics and you get into other agencies — who knows what sort of criteria they might be using. But meteorologically, there is no way we can say we are in a drought.”

Had enough?

OK, one last thing. Apparently Gov. Jerry Brown will get the final word on when the drought is really, truly, cross-your-heart-and-hope-to-die over. California will remain in a drought emergency until Brown lifts or tweaks the formal declaration he issued several years ago. And officials said this week that the governor will likely hold off on doing anything until he’s got the final numbers from the state’s winter snow and rain season — meaning probably not for a couple more months.

###

As Rains Soak California, Farmers Test How To Store Water Underground

NPR | January 12, 2017 | Dan Charles

Six years ago, Don Cameron, the general manager of Terranova Ranch, southwest of Fresno, Calif., did something that seemed kind of crazy.

He went out to a nearby river, which was running high because of recent rains, and he opened an irrigation gate. Water rushed down a canal and flooded hundreds of acres of vineyards — even though it was wintertime. The vineyards were quiet. Nothing was growing.

"We started in February, and we flooded grapes continuously, for the most part, until May," Cameron says.

Cameron was doing this because for years, he and his neighbors have been digging wells and pumping water out of the ground to irrigate their crops. That groundwater supply has been running low. "I became really concerned about it," Cameron says.

So his idea was pretty simple: Flood his fields and let gravity do the rest. Water would seep into the ground all the way to the aquifer.

The idea worked. Over four months, Cameron was able to flood his fields with a large amount of water — equivalent to water three feet deep across 1,000 acres. It all went into the ground, and it didn't harm his grapes.

These days, Cameron's unconventional idea has become a hot new trend in California's water management circles — especially this week, with rivers flooding all over the state.

"This is going to be the future for California," Cameron says. "If we don't store the water during flood periods, we're not going to make it through the droughts."

Helen Dahlke, a groundwater hydrologist at the University of California, Davis, is working with a half-dozen farmers who are ready to flood their fields this year. "We have test sites set up on almonds, pistachios and alfalfa, just to test how those crops tolerate water that we put on in the winter," she says.

There are two big reasons for these experiments.

The first is simply that California's aquifers are depleted. It got really bad during the recent drought, when farmers couldn't get much water from the state's surface reservoirs. They pumped so much groundwater that many wells ran dry. The water table in some areas dropped by 10, 20, or even 100 feet. Aquifers are especially depleted in the southern part of California's Central Valley, south of Fresno. Flooding fields could help the aquifers recover.

The second reason to put water underground is climate change.

California has always counted on snow, piling up in the Sierra Nevada mountains, to act as a giant water reservoir. Water is released gradually as the snow melts.

But because of a warming climate, California now is getting less snow in winter, and more rain. The trend is expected to intensify. But heavy rain isn't as useful because it quickly outstrips the capacity of the state's reservoirs and just runs into the ocean. Meanwhile, the state gets very little rain during the summer, when crops need water.

"We really have to find new ways of storing and capturing rainfall in the winter, when it's available," says Dahlke.

There's no better place to store water than underground. Over the years, California's farmers have extracted twice as much water from the state's aquifers as the total storage capacity of the state's dams and man-made lakes. In theory, farmers could replace that water.

Peter Gleick, a water expert and co-founder of the Pacific Institute, says that after winter storms, there is enough water available to recharge those groundwater aquifers.

The hard part, he says, will be getting the state's farmers and irrigation managers to go along with the plan. Because it will require flooding hundreds of thousands — and possibly millions — of acres.

"I'm cautiously optimistic that we can do this," he says. But it's going to require a different way of thinking. It's going to require a lot of farmers and owners of ag land to be willing to flood land when the water's available."

And Gleick says, even if this large-scale flooding can be accomplished, it won't be enough, by itself, to protect groundwater supplies. It will have to be accompanied by strict limits on how much water farmers can pump from aquifers. Groundwater — which until recently was almost completely unregulated — will have to be managed so that water is there when farmers really need it, when the rains don't fall.

###

Officials: More than 40 percent of California out of drought

SF Gate | January 12, 2017 | Ellen Knickmeyer, Associated Press

SONOMA, Calif. (AP) — More than 40 percent of California has emerged from a punishing drought that covered the whole state a year ago, federal drought-watchers said Thursday, a stunning transformation caused by an unrelenting series of storms in the North that filled lakes, overflowed rivers and buried mountains in snow.

The weekly drought report by government and academic water experts showed 42 percent of the state free from drought. This time last year, 97 percent of the state was in drought.

Southern California, also receiving welcome rain from the storms, remains in drought but has experienced a dramatic reduction in the severity. Just 2 percent of the state, a swath between Los Angeles and Santa Barbara, remains in the sharpest category of drought that includes drying wells, reservoirs and streams and widespread crop losses. Forty-three percent of the state was in that direst category this time a year ago.

California will remain in a drought emergency until Gov. Jerry Brown lifts or eases the declaration he issued in January 2014, while standing in a bare Sierra Nevada meadow that one of the state's driest stretches on record had robbed of all snow.

State officials said this week that Brown will likely wait until the end of California's winter snow and rain season to make a decision on revising the drought declaration.

For Northern California, at least, the onslaught of storms that brought the Sierras their heaviest snow in six years and forced voluntary evacuations of thousands of people as rivers surged will likely make it a much clearer call for the governor, water experts said.

"It's hard to say we have a drought here right now," said Jay Lund, director of the Center for Watershed Sciences at the University of California at Davis, an area near Sacramento that was awash after its heaviest rain in 20 years.

Lund spoke on his way back from taking students to see flood gates on the Sacramento River, opened by state officials Tuesday for the first time in 12 years to ease pressure on river banks and levees.

The opened gates were spilling a 2-mile torrent of excess water onto public lands in the Sacramento Valley, alongside the equally raging Sacramento, the state's largest river.

More storms Thursday raised fears of mudslides in Southern California and clogged commutes statewide. The Russian River in Northern California's wine region was among the tributaries still in flood. Residents in the resort town of Guerneville used canoes and kayaks to get around flooded areas, and even inside their inundated homes.

Forecasters said rain and snow would continue into Thursday afternoon. But the heaviest of the back-to-back systems fueled by an "atmospheric river" weather phenomenon had passed after delivering the heaviest rain in a decade.

"Everything is on the way down," said Steve Anderson, a meteorologist at the National Weather Service office in Monterey.

The past week's storms were enough to double the snowpack in parts of the Sierras, runoff from which provides Californians with much of their year-round water supply. Stations up and down the mountain chain were reporting twice the amount of normal rain and snow for this time of year.

The state's reservoirs were brimming above average for the first time in six years.

"It's been so wet in some places this winter we would do pretty well even if it tapered off right now," said Daniel Swain, a fellow at the University of California at Los Angeles whose weather blog has been a closely watched chronicle of the drought.

Water experts look at factors including soil moisture, stream levels and snow pack in determining drought, said Claudia Faunt, a San Diego-based hydrologist with the U.S. Geological Survey.

At the peak of the drought in 2014 and 2015, urban Californians were under a mandatory 25-percent water conservation order from Brown. Dozens of threatened native species suffered as waterways shriveled. More than 100 million trees in the Sierra Nevadas died, foresters said.

California's underground water reserves have been so depleted by extra pumping in the drought that they would take decades, at a minimum, to replenish, experts said.

In a state as sprawling and varied as California, "where we are in a drought is complicated," Faunt said.

#

Why Record Precipitation May Not Be a Cure-All for California Water Issues

California could be on track for a record wet year if precipitation persists throughout the rest of the rainy season. We talk to experts about what that will mean for the state's five-year-and-counting water shortage.

Water Deeply | January 11, 2017 | Tara Lohan

Californians may be getting all the precipitation they wished for, and then some. A wet October followed by a series of big rain- and snowstorms kicking off the new year has made for one of the wettest rainy seasons so far in California's record-keeping. "It's undoubtedly in the top five," said Doug Carlson, an information officer with the state's Department of Water Resources.

As of Tuesday, the rainfall for Northern California was just over 200 percent of average, according to the Department of Water Resources. And the water content of the snowpack statewide was 135 percent of average.

After five years of drought the precipitation is needed, but it has also caused problems.

"We are navigating both flood and drought at the same time here," said Michael Anderson, the state's climatologist.

The state is still taking stock of the extent of damage, but so far homes have been affected; flooding, landslides and heavy snow have closed roads; several rivers have flooded their banks; and some levees in the Sacramento-San Joaquin Delta are showing weakness and need to be repaired. For the first time in more than a decade, the floodgates of the Sacramento Weir were opened to funnel Sacramento River water to the Yolo Bypass.

"So far, we've been pretty lucky: quite a bit of water has managed to fall on California over the past couple of months without seeing highly damaging flooding," said Daniel Swain, a NatureNet postdoctoral fellow at UCLA's Institute of the Environment and Sustainability. "This week, we're seeing the first signs of tipping too far in the other direction – quite a few rivers and streams in Northern California have already flooded or will flood shortly. This is a pretty typical feature of California's 'feast or famine' climate: it often takes a flood to break a longstanding drought in this part of the world."

There is no denying that recent precipitation will make a good dent in the state's water deficit, especially when it comes to filling reservoirs. But it's still too soon to fully take stock of the drought impact with the peak of the snowpack still about three months away and two more months left of the heaviest precipitation time, said Carlsen.

"The question will be whether this wet pattern can persist for the rest of the winter, and whether temperatures will be cold enough to maintain a healthy snowpack into the spring," said Swain. Last year, warm temperatures quickly reduced accumulated snowpack in the northern Sierra. "In parts of Southern California, the severity of long-term drought remains quite high, and we would still need to see a prolonged streak of above-average precipitation in that region to bring things back closer to where they should be."

Although recently Southern California has finally been getting some rain, too. "This has been one of the most productive storms over a large area of California that we have probably seen in the last five years," said Jan Null, a meteorologist with Golden Gate Weather Service. Last year, the central and southern Sierra really lagged behind, he said.

Anderson said that although Los Angeles and San Diego both have gotten rain from recent storms, a swath of central California stretching from Santa Barbara County to Tulare County is still missing out.

While the amount of surface water in streams, rivers and reservoirs is promising right now, California will still need years to recoup the over-pumping of groundwater.

“We’re still playing the wait-and-see game,” said Carlsen. “The rain indexes are remarkably good, the water you can see is looking pretty good, the water you can’t see and really wonder about is the groundwater – that’s another kettle of fish altogether.”

And while the storms may be welcomed now, it’s also something the state may need to start getting used to. Swain said that there is still uncertainty about how precipitation in California may change as the climate warms, but the research is stronger when it comes to understanding atmospheric rivers, the kind of storms that have just walloped the state.

“It now appears likely that California will see stronger atmospheric rivers in the future, with an increased risk of extreme precipitation events and flooding,” said Swain. “But that doesn’t necessarily mean that we’re likely to get wetter overall; there’s also increasing evidence that we’ll actually experience wider swings between drought and flood.”

#

What drought?

Tuolumne River continues to rise because of Don Pedro releases

The Ceres Courier | January 11, 2017 | Jeff Benziger

There were fears late last week that the stepped-up flows released from Don Pedro Reservoir - ordered to ensure enough water storage for a series of storms hitting the higher elevations - would cause flooding in the Ceres-Modesto area. The Tuolumne River has widened greatly in some areas but so far there is not the eminent threat of flooding like 20 years ago this month when Don Pedro crested and trailer parks along River Road were forced to evacuate. It's going to be close this go-around.

The water level on the Tuolumne River at the Ninth Street Bridge was 49.9 feet early Tuesday, said the California Department of Water Resources, and may reach 52.2 feet tomorrow or Friday. That leaves only about a safety margin of 33.6 inches before flooding occurs. With weather, nothing is truly predictable but it looks like winds will be more of a problem than rain the next few days. The sun is expected to come out Friday and remain for the weekend. As of 2 p.m. on Jan. 4 the flow of the river was around 3,000 cubic feet per second at the Ninth Street Bridge. It reached 4,670 CFS Tuesday morning.

The increased releases allow Don Pedro to continue filling without being overfilled. The lake is currently at 84 percent of capacity and tops out at the 830-foot mark. On Dec. 12 Don Pedro was at 772.89 feet; as of Monday was at 802.6 feet and climbing. Releases from Don Pedro peaked at 10,668 CFS on Jan. 6 while reservoir inflow was measured at a rate of 15,398 CFS. Releases from the dam were scaled back but will continue to fluctuate in response to any future storms.

Heavy rainfall has caused a number of rock slides in the area. One was reported on Highway 132 near La Grange Road. The Highway 140 route into Yosemite Valley was blocked by a slide of boulders onto the roadway near El Portal on Thursday. The valley had been evacuated because of flooding but reopened yesterday.

Gov. Jerry Brown's declaration of the state being in a drought has yet to be rescinded even though the recent storms have resulted in approximately 350 billion gallons of water being dumped into the state's biggest reservoirs. Jay Lund, a professor of engineering and director of the Center for Watershed Sciences at UC Davis, said while California will normally be a dry state, there is certainly no drought now and cautioned lawmakers about crying wolf.

"You have to maintain credibility with the public when there are critically dry years, so you have to call it like it is when conditions improve," he told the San Jose Mercury News.

Other local lakes have a way to go before they look remotely filled. New Melones Reservoir on the Stanislaus River is only 31 percent of capacity. The lake tops out at 1,135 feet but on Tuesday had another 230 feet left to be filled.

The Exchequer Reservoir on the Merced River is only 57 percent of capacity.

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Reservoirs starting to fill in California, but nobody's saying the drought is over

Fresno Bee | January 11, 2017 | Lewis Griswold

As a result of the nearly weeklong deluge, water is flowing into California lakes and reservoirs, prompting dam operators to release supplies in advance of a storm expected next week.

But it's too early to say if the series of storms is a drought-buster.

"Very generally, the storms are very beneficial to reservoir storage," said Ted Thomas, spokesman for the California Department of Water Resources.

But dam operators are watching the skies, he said.

"They are required to keep a certain amount of empty space for incoming water," he said. "It's always a balancing act. You want to conserve water for the hot summer and have room for flood flows."

After a dry weekend, the National Weather Service is forecasting another storm next week.

San Luis Reservoir west of Los Banos is about 67 percent full, and more water is going into the reservoir, Thomas said.

"That's 94 percent of the historical average for today's date," he said.

The balancing act is being felt in Madera County.

For the first time in six years, water is flowing in the Fresno River in Madera County after the Army Corps of Engineers began releases from Hensley Lake to make room for storm runoff.

Wednesday, about 2,000 cubic feet per second of water was being released into the Fresno River. (One cubic foot per second is 448 gallons in a minute.)

That's up from 45 cubic feet per second on Friday. Releases will continue through at least Sunday, said Joe Forbis, chief of water management for the Army Corps' Sacramento district.

The corps is also releasing water from Lake Kaweah and Lake Success in Tulare County, but not from Pine Flat Dam on the Kings River.

Pine Flat can hold about 1 million acre-feet. It was at about 430,000 acre-feet as of Wednesday. It would have to be at 643,000 acre-feet for the corps to start releasing water for flood control.

It's too early to say if the storms that brought an "atmospheric river" into the state can be called drought-busters, said Shane Hunt, spokesman for the U.S. Bureau of Reclamation.

"They're definitely helping, but we need to end the snow season with at least an average snowpack and good storage levels in the reservoirs," he said.

Water is also being released from Millerton Lake, managed by the Bureau of Reclamation. It captures San Joaquin River water.

Millerton Lake can hold more than 520,000 acre-feet, but the bureau's goal is to keep it at about 351,000 acre-feet to leave room for incoming runoff. As of Wednesday, the lake held about 407,000 acre-feet.

"We're a little bit over the conservation level," Hunt said. "We'll walk our way back to that conservation target."

The lakes upstream in the upper San Joaquin River basin, such as Shaver and Mammoth Pool, have a total capacity of about 1.1 million acre-feet and are holding a little under 800,000.

Some water at Millerton Lake is being shunted into the Friant-Kern Canal for irrigation districts to take. The canal had been closed for maintenance and a construction project, but water started flowing into it Saturday night or Sunday, said Duane Stroup, deputy area manager for the Bureau of Reclamation in Fresno.

When the storms end and the ground starts to dry, irrigation districts and farmers will take some water from the canal, said Dan Vink, executive director of Lower Tule River Irrigation and Pixley Irrigation districts in Tulare County.

The two districts have been taking excess water out of the Tule River for recharge basins, he said.

"There is a lot of pent-up demand for recharge basins and water-banking programs," he said. "All our recharge basins are full."

Many irrigation districts have waited years for the chance to put water into recharge basins.

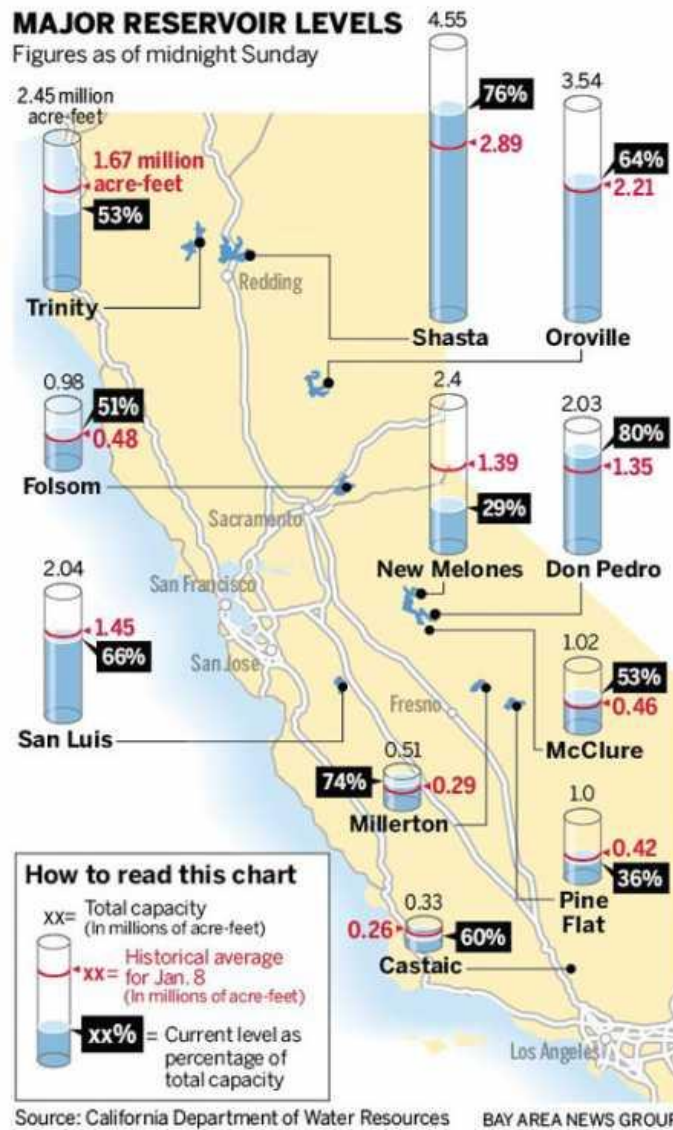
"It looks like it won't be a dry year," he said, "but I don't know if it wipes out the impact of ... years of drought."

#

California Reservoirs see 350 Billion Gallons of Water in Storm Succession
 And Now U Know | January 10, 2017 | Melissa De Leon

NORTHERN CALIFORNIA - While the rains continue for Northern California, mudslides and flooding have not been the only product of the uncharacteristically wet weather.

Our reservoirs have also seen a significant boost to water content, according to Mercury News, with upwards of 350 billion gallons accounted for as of the last round of storms.



We are now seeing the upstart of yet another pattern. As we reported yesterday, Northern California's coastal ranges are expected to receive up to a foot of cumulative rainfall, and between two and eight inches of rain are expected throughout the inland Sacramento and San Joaquin Valleys, as the result of what weather experts described as "torrential" rainfall.

While there have been dangerous conditions, the news for the record drought is optimistic.

The report noted that the Sierra Nevada snowpack is currently at 70 percent of historic average, a 126 percent leap from this time of the year, despite weekend concerns that the weather would remove recent progress.

The 154 largest reservoirs tracked by the state Department of Water Resources added 1.1 million acre feet of water from Jan. 1 to Monday, longtime state hydrologist Maury Roos told Mercury News, boosting their capacity to 97 percent of historic average.

California's second-largest reservoir, Oroville, has risen 35 feet since New Year's Day. It has added 250,000 acre-feet of water over last weekend, now standing at 64 percent full—102 percent of historic average.

"It's excellent news," said Roos. "I don't make the decision on the official drought, but from the Bay Area north we are in good shape for this time of the season."

Roos, however, did hold on to caution, stating that it's still early yet and precipitation patterns could dry up at any time.

The drought does not officially come to a close until Governor Jerry Brown gives the word, and while the northern half of the state is seeing significant water additions, the southern half's reservoirs are still low, particularly Santa Barbara and surrounding areas.

The report noted that Governor Brown should soon update the drought declaration to include recent regional differences.

AndNowUKnow will continue to report from our home at the state's capital on this and all other issues affecting the produce industry.

#

Bay Area storm: More rain and snow leave drought farther behind

San Jose Mercury News | January 10, 2017 | Paul Rogers

Northern California continued to roar out of its prolonged drought Tuesday as yet another powerful storm blew in from the Pacific Ocean, drenching an already saturated Bay Area, filling some local reservoirs beyond capacity and creating dangerous white-out conditions in the northwestern Sierra Nevada.

Shortly after noon, water began coursing down the Lexington Reservoir spillway for the first time since March 2011. As the water surged into Los Gatos Creek, the National Weather Service issued a flash-flood warning for areas adjacent to the stream in Los Gatos and Campbell. Flood warnings also were issued for southern Santa Clara County amid reports of several feet of standing water in Gilroy, San Martin and Morgan Hill.

The latest storm also brought the threat of more mudslides just days after Highway 17 was closed. It briefly shut Highway 880 in the East Bay on Tuesday and toppled trees and power lines.

At higher elevations, the storm turned into a treacherous blizzard. Caltrans shut down nearly 90 miles of Interstate 80 between Colfax and the Nevada state line Monday night. It was not expected to reopen until Tuesday night.

The storm was expected to ease up late Tuesday before giving way to a weaker system that may linger into Thursday. After that, forecasters predicted several days of sunny weather, including a rain-free weekend.

Combined with last weekend's more powerful system and some heavy rainfall in December, the latest storm put several years of punishing drought farther in the rear-view window, though state officials plan to wait until the end of the season before deciding whether to end California's emergency drought declaration.

Reading this on your phone or tablet? Stay up to date on Bay Area and Silicon Valley news with our new, free mobile app. Get it from the Apple app store or the Google Play store.

In the northern Sierra Nevada region, the average precipitation at eight weather stations monitored by the state Department of Water Resources reached 203 percent of normal for the current water year, which runs from Oct. 1 to Sept. 30. That's the highest total on record for those stations for this time of the season, putting the region on pace to exceed the wettest recorded water year of 1982-83.

"No doubt about it, that's an encouraging sign for people concerned about the drought, which is everybody," said Doug Carlson, spokesman for the Water Resources Department. "To be 203 percent of average as of Jan. 10 is quite encouraging. The north is where we have our major reservoirs."

So much water is flowing up north that the U.S. Bureau of Reclamation announced Tuesday it will increase releases from Shasta Lake, the state's largest reservoir, from 14,000 cubic feet per second to 36,000 cubic feet per second by Thursday. The goal is to free up space in the swelling reservoir to capture more water as future storms come.

The cumulative rainfall hasn't been quite as eye-popping in many parts of the Bay Area, but still above average. San Jose has received about 6.5 inches of rain since Oct. 1, which is 109

percent of normal, while Oakland has gotten about 11.6 inches, good for 127 percent of normal, according to the National Weather Service.

On Tuesday, Mineta San Jose International Airport got 0.31 inches of rain in the 24-hour period ending at 4 p.m. Concord soaked up 1.45 inches, Oakland International Airport received 1.15 inches, and Redwood City got 1.37 inches.

In the North Bay, San Rafael got 2.56 inches as the Russian River continued to rise and flooding worsened in the area of Guerneville. The level of the river was expected to exceed 38 feet on Wednesday, more than 6 feet above the flood stage.

The recent storms have loaded up many of the region's reservoirs. Four of the reservoirs within the Santa Clara Valley Water District, including Lexington, were above capacity Tuesday. The reservoirs managed by the East Bay Municipal Utility District reached 82 percent of capacity on average, with Briones Reservoir in western Contra Costa County at 99 percent.

One of the state's top environmental officials, Natural Resources Secretary John Laird, said Tuesday that, despite the welcome rain, the administration is likely to wait until March or April to decide whether to lift the emergency drought declaration that Gov. Jerry Brown signed three years ago.

Although there is flooding in Northern California, he said, some parts of the state, particularly in the San Joaquin Valley, have badly overdrawn groundwater basins because of heavy pumping during recent dry years.

"That is nowhere near recovering, even with the rains," he said.

The resources secretary did not specify what sort of recovery the Brown administration would like to see in those basins before it considers the current drought to be over.

In Los Gatos, David Quevado was happy to see Lexington Reservoir full, but the general manager of The Cats, a popular restaurant off Highway 17, wasn't bothered by the weather conditions that have caused major headaches over the past several days in the Santa Cruz Mountains.

"It's heavy rain," he said, peering out of his office window, "but nothing out of the normal."

Up in the state capital, something more unusual was afoot. For the first time in 11 years, the state Department of Water Resources opened a set of flood-control gates on the Sacramento River. Letting water course through the gates, known as the Sacramento Weir, is designed to calm the raging waters at the confluence of the Sacramento and American rivers.

All the water in Northern California's rivers and streams is a welcome sign for Chinook salmon and the fishermen who catch them. Baby salmon will survive at much higher rates as they head out to the ocean over the next several months, likely delivering a bounty to coastal trawlers when the fish return to spawn in a few years.

And the snow in the Sierra Nevada will ensure a long and enjoyable ski season, said Sam Kieckhefer, spokesman for Squaw Valley and Alpine Meadows near Lake Tahoe.

The resort got 27 inches of snow in a 24-hour period ending Tuesday morning, and another 10 inches or so came down by the afternoon, bringing the total for January to well above 10 feet,

he said. The resort was closed Tuesday but hoped to open some chair lifts Wednesday, depending on weather conditions.

“It is dumping like I haven’t ever really seen, to be honest,” said Kieckhefer.

“We have our hands full, that’s for sure,” said Caltrans spokesman Bob Haus. “All our maintenance folks are working 12-hour days.”

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California storms help fill reservoirs but slow ag work

The two “atmospheric river” storms that deluged California this week have boosted snowpack and reservoirs but slowed citrus harvests and caused little reported crop damage.

Capital Press | January 10, 2017 | Tim Hearden

SACRAMENTO — Big rains in California have dumped more than a million acre-feet of water into the state’s reservoirs since Jan. 1 but this week stalled the Central Valley’s navel and mandarin orange harvests, state and industry officials say.

The storms had added 1.1 million acre-feet of water to California’s reservoirs by Jan. 9 with more to come, according to state officials, while prompting the opening of the Sacramento Weir — a flood-control bypass around the city — for the first time since 2006.

Shasta Lake, the Central Valley Project’s main reservoir, was at 81 percent of capacity as of Jan. 11 while Lake Oroville, the chief reservoir for the State Water Project, was at 74 percent of capacity, according to the Department of Water Resources.

As of Jan. 11, California’s snow-water content had vaulted to 158 percent of normal statewide after being just 70 percent of normal a week earlier. The southern Sierra Nevada’s snowpack was at 187 percent of normal for this time of year, according to the DWR’s California Data Exchange Center.

This week saw a one-two punch of “atmospheric river” mega-storms aimed at California, with the first on Jan. 7-8 bringing rain, heavy winds and local flooding and the second on Jan. 10-11 expected to pile as much as 6 feet of snow on the mountains, according to the National Weather Service.

But the rain wasn’t all good news for farmers.

More than 2 inches of rain in the Central Valley’s prime citrus growing region has made the ground too wet to move equipment and increased the risk that wet fruit could be blemished, said Joel Nelsen, president of the Exeter, Calif.-based California Citrus Mutual.

While the rain is welcome after four years of drought, the timing has been a little frustrating for growers, Nelsen acknowledged.

“We’re in the middle of a good harvest,” he said. “This is when we start our exports to Korea and Japan, and the international scene is quite attractive right now. It (the weather) affects volume.”

Another concern for citrus growers is if temperatures suddenly drop after the rains clear out and water still on the fruit freezes, causing surface blemishes that force growers to destroy the fruit, Nelsen said. But that wasn’t in the forecast as of Jan. 10, he said.

Most of California has been soggy since New Year’s Day, with some valley areas getting as much as 5 inches of rain in the first week of 2017 and as much as 14 inches of rain falling in some mountain communities, according to the National Agricultural Statistics Service.

On farms, the rain has helped the growth of planted grains and field crops continue at an excellent rate, NASS reports, but it has brought field work to a standstill.

At Shasta College in Redding, Calif., frequent storms have prevented the farm from planting some of its grain fields, farm manager B.J. Macfarlane said. The farm grows all of its hay and grains to avoid having to purchase feed for its livestock.

“We’re not complaining, but it’s messed up our farming, the water coming like it has,” Macfarlane said. “But I’ve planted grain in January and February and been just fine.”

Fruit and nut growers have been pruning orchards and shredding the brush as the weather has allowed, but vineyard operations had to stop most post-harvest field activities because of the rain, NASS reported.

But no major damage to fruit and nut orchards because of high winds or flooding had been reported, local Farm Bureau and University of California Cooperative Extension officials said.

“The water, so far, is a good thing here,” Fresno County Farm Bureau executive director Ryan Jacobsen said in an email.

Many orchardists took steps ahead of time to prevent large-scale orchard damage from wind and flooding, including applying zinc in the fall to help drop the leaves and making sure they have good drainage, said Dani Lightle, a UCCE farm adviser in Orland, Calif.

The biggest worry for nut growers is developing root rot from standing water, she said.

“Still water is worse than moving water,” she said.

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Farmers and water districts hope storm runoff can help replenish underground supplies

Fresno Bee | January 10, 2017 | Robert Rodriguez

While some farmers lament the release of thousands of acre-feet of water from Friant Dam, others are putting it to good use: recharging groundwater supplies.

Last week, the U.S. Bureau of Reclamation began releasing water from Millerton Lake to make room for a deluge of storm runoff. The move frustrated some farmers, who say spilling water into the river and eventually the ocean is a prime example of why the state needs to build a dam at Temperance Flat. Farming advocates are pushing for state and federal funding to build the \$2.8 billion project.

But other farmers and irrigation districts are taking a different tack. They are sinking the excess water into the ground as a preventive measure against future droughts.

Madera Irrigation District began taking some storm runoff from Friant Dam and using it for groundwater recharge in its region. The district will be taking water through the Madera Canal through mid-February.

Landowners within the district are being encouraged to sign up at the district office and begin taking the water. The district's board was scheduled to meet Tuesday to discuss what price, if any, it will charge district landowners who want to use the surface water.

In other parts of the central San Joaquin Valley, the recent storms have allowed other districts to deposit water into recharge basins.

Depletion of the region's groundwater has been a major outcome of the state's five-year drought. Without a regular supply of surface water, farmers turned to pumping groundwater, causing the levels to plummet in some areas.

Water districts hope to put some of that water back.

"We are trying to capture everything we can for recharge," said Gary Serrato, general manager of the Fresno Irrigation District.

The district has 300 acres of groundwater recharge basins between Fresno and Kerman that it is using.

Although the district has not formally told its growers that the water is available, Serrato said it is there for the taking. All growers have to do is ask.

Scott Sills, general manager of the Laguna Irrigation District in Riverdale, said his district has about 160 acres of ponds for recharging the groundwater, including a 52-acre project in south Fresno County.

The recharge basin will direct flood water from the nearby Kings River and add approximately 2,600 acre-feet, or nearly 850 million gallons of water, a year to the aquifer.

Project organizers say that is enough water to irrigate about 1,300 acres of farmland for the growing season.

Sills said that with the recent release of water from Friant Dam, some of that water is being dumped via canals into the Kings River, where the district will be taking it.

“Once that water arrives we will try and fill as many ponds as we can,” Sills said.

Researchers also are welcoming the recent rains. Gabriele Ludwig, director of sustainability and environmental affairs at the Almond Board of California, said these are exactly the types of storm events that will test how effective projects aimed at groundwater recharge are working.

The Almond Board of California is working with several farmers, University of California scientists and a San Francisco-based group called Sustainable Conservation.

The plan is to apply water from the Kings River to several orchards to see how well it recharges the aquifer without damaging trees or vineyards. Researchers say recharge could reduce overdrafting – when more water gets pumped from an underground basin than gets replenished – by 12 percent to 20 percent.

Questions that remain are: Does the flooding of orchards cause leaching of nitrates or salts into the groundwater? Are there systems in place to take advantage of major rain events?

“These are exactly the kind of storms that this concept is set up for,” Ludwig said.

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Too soon to call an end to California's drought

San Francisco Chronicle | January 8, 2017

With the mother of all storms rolling across California over the weekend and more rain expected this week, can we declare the drought over? Not by a long shot.

Granted, the landscape is looking greener, the reservoirs fuller and the Sierra snowpack deeper (it was at 103 percent of normal for this time of year Friday). But we are not even three weeks into winter. Deluge quickly can turn into a dry spell. Remember 2012, when we saw our last rain for a year in January? A few storms — even doozies like these — are not enough to make up for five years of drought (especially when there was only one wet year between this and the last).

Rain drenched the north part of the state but until last month only dribbled a few drops in the south. Central Coast reservoirs are nearly empty, most notably in Santa Barbara, where outdoor irrigation is completely banned. A few small Central Valley communities continue to truck or pipe in water because well pumps are still sucking sand.

Water managers — and the rest of us — can't relax until the groundwater levels are restored. Desperate farmers spent millions of dollars to sink deeper wells as the drought dragged on, over-drafting the supply. Then the rain came, but the water is percolating slowly into the earth. We won't know how the aquifers are recovering until the spring groundwater report.

The state relaxed the water conservation rules in May. The State Water Resources Control Board will discuss them Jan. 18 and vote in February. The governor certainly won't lift the drought emergency order before the end of our rainy season (April), if he lifts it all.

So while we've tired of timing our showers, it's too soon to say the drought is over. Californians can comfort themselves with the fact that we've made it this far and we're learning how to live with drought.

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Lawmakers tour location of proposed Sites Reservoir

Sacramento Bee | January 12, 2017 | Taryn Luna

As Northern California skies begin to clear, California lawmakers are using the storm that pelted the region over the last week as a catalyst to talk about the state's water management system.

Assemblyman James Gallagher, R-Yuba City, is leading a troupe of lawmakers today on a tour of the Sites Reservoir, a \$4.4 billion proposed water storage project four decades in the making.

Unlike most of California's reservoirs, Sites would be off-stream and collect water from the Sacramento River via a 14-mile pipeline. Backers of the project say Sites could add 500,000 acre-feet of water to the state's system per year, which Gallagher says is enough to serve 1.2 million families.

The project may have gotten a boost last month when President Barack Obama signed a long-contested water bill that included funding for water storage projects in the west.

Sites' funding, at least in part, may also be tied to Gov. Jerry Brown's Delta tunnels. Sacramento Valley irrigation districts intend to fund Sites and were appealing to the state for additional support through Proposition 1. Backers were also tapping water agencies outside the Sacramento Valley for support, but some of those agencies may be unlikely to invest until Brown's tunnel project moves forward ensuring the water can reach their districts south of the Delta.

Gallagher and a dozen other lawmakers will begin their tour of the site, located in Maxwell, at 10:30 a.m.

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Obama administration aids giant California water project

The Press Democrat | January 4, 2017 | Associated Press

SAN FRANCISCO — The outgoing Obama administration on Wednesday tried to nudge forward Gov. Jerry Brown's proposal to build two giant north-south water tunnels for California.

In an executive order, U.S. Interior Secretary Sally Jewell directed federal wildlife officials on Wednesday to release by Jan. 17 a preliminary environmental opinion that directs the U.S. Fish and Wildlife Service and U.S. Bureau of Reclamation to assist as the \$15.7 billion project seeks state and federal permits and other approvals.

Brown welcomed Jewell's move, saying in a statement "it commits the federal government to a timely review" of the proposed tunnels.

Brown wants a handful of California water districts to build the twin, 35-mile-long water tunnels to pipe Northern California's water to central and Southern California. The Obama administration also has supported the project.

Brown says the tunnels would ensure a more reliable water supply for central and Southern California farms and cities. Environmental groups disagree with Brown over whether the giant tunnels would hurt endangered state species.

Senior attorney Doug Obegi at the Natural Resources Defense Council described Wednesday's order as no more than a work plan for remaining action on the project, and not binding on the Trump administration. "It's certainly not a green light for the tunnels," Obegi said.

Final decisions on the tunnels will be made under the incoming administration of President-elect Donald Trump, who has called for more water for California farmers but has not specifically addressed the Democratic governor's tunnels project.

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Secretary Jewell Lays Out Strategy to Address Impacts of Drought and Climate Change in California

YubaNet.com | January 4, 2017 | By U.S. Department of the Interior -

WASHINGTON, Jan. 4, 2016 – U.S. Secretary of the Interior Sally Jewell today issued a Secretarial Order directing the Department of the Interior and its bureaus to take timely actions to help address the effects of drought and climate change on California’s water supply and imperiled wildlife.

“Long-term drought, fueled by climate change, has adversely affected the state’s water supplies, exacerbated effects of water operations on imperiled species, impacted water quality, and added to the stressors affecting the health of California’s unique ecosystems, particularly the Sacramento-San Joaquin Delta (Bay-Delta),” the order states.

“This Secretarial Order is a practical and broad-based strategy to help protect California’s water lifeline for present and future generations,” said Deputy Secretary Michael L. Connor. “This order will ensure the integration of the Department’s actions with those of the State of California to provide a reliable drinking water supply for the public, sustain California’s agriculture, and continue to protect the Bay Delta ecosystem and enhance the conservation of species.”

“Today’s action tracks closely with the state’s multi-pronged Water Action Plan and commits the federal government to a timely review of the California WaterFix project,” said California Governor Edmund G. Brown Jr. “This state-federal partnership is what’s needed to improve water reliability for residents and farmers and protect vulnerable ecosystems.”

Developed in consultation with the state agencies and other federal agencies, the order specifies steps by Interior and its agencies to achieve “the State’s co-equal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the environmental quality of the Bay-Delta.”

The Secretarial Order issued today provides direction for the Department, and particularly Reclamation and FWS, with scientific support and technical advice from the USGS, to complete the technical, scientific, and analytical work necessary to make permitting, regulatory, and other decisions associated with various water initiatives. It calls for six actions:

1. California WaterFix Environmental Review. The order directs Interior’s Bureau of Reclamation and U.S. Fish and Wildlife Service (FWS) to allocate available resources, as necessary, to complete in a timely manner the Biological Opinions under Section 7 of the Endangered Species Act and a Record of Decision on the environmental documents for California WaterFix. California released a final environmental impact statement and a final environmental impact review on December 30, clearing the way for a final decision on WaterFix, which is the State’s plan to upgrade infrastructure in the estuary where the Sacramento and San Joaquin Rivers meet before flowing to San Francisco Bay. This will secure water supplies for 25 million people. Interior’s Reclamation was the lead federal agency on the environmental impact statement issued under the National Environmental Policy Act.

Today’s Secretarial Order directs FWS to take all necessary actions to issue an initial Draft Biological Opinion in January 2017 and a final Draft Biological Opinion by March 2017 after incorporating the results of independent scientific peer reviews. A final Biological Opinion is to be issued by April 2017. It specifies that the Department, working with the State and others, will promptly review and consider any information received after publication of the Final EIR/EIS and

issuance of the Biological Opinions, and will then be prepared to sign a Record of Decision. This decision will be made by the next Secretary.

2. Collaborative Delta Science Engagement Process. The order directs Reclamation, FWS, and USGS to work collaboratively with the state and other federal agencies to use the Adaptive Management Framework developed as part of California WaterFix to help guide scientific studies and monitoring, assist with Central Valley Project and State Water Project operations, and achieve the co-equal goals for the Bay Delta. New science proposals will be subject to review under various existing science review processes. Implementation of the framework will include an annual review process that develops innovative approaches to the refinement of monitoring and restoration activities that measure species' populations. Annual review results will be made available to the public.

3. Delta Smelt Resiliency Strategy. This strategy addresses both the risk to the critically endangered Delta smelt—formerly one of the most abundant fish in the Delta—and the risk to water supplies. The order directs Reclamation and FWS to closely coordinate with state and federal agencies and others in implementing all facets of the Strategy. During the next several years, Reclamation will acquire or otherwise make available up to 250,000 acre-feet/year of outflow above current state water quality permit requirements. This additional outflow may include using water transfers, changes in exports from the Bay-Delta, releases from upstream storage, or other measures. Each year FWS must provide to Reclamation and the state a detailed description of specific physical and biological objectives and species needs for Delta Smelt during the spring and summer based on the best available science.

4. Re-initiation of Consultation under the Endangered Species Act on Coordinated Long-Term Operations of the Central Valley Project and State Water Project. The Secretarial order directs Reclamation and FWS to work with other state and federal agencies to carry out the work necessary to complete the recently re-initiated consultation on long term operations of the Central Valley Project and State Water Project.

5. Active Engagement in Development of Voluntary Agreements for Flow Requirements and Coordination on Flows with ESA Requirements. Reclamation and FWS will work with other agencies to provide information to the State Water Resources Control Board as part of its Bay-Delta Plan initiative. This will include coordination with the California Natural Resources Agency in at least the following areas: 1) engagement with key stakeholders to develop voluntary agreements to increase flows and integrate flow and non-flow measures; 2) providing information necessary to establish water quality standards to meet fish, wildlife, and ecosystem goals; and 3) ensuring that requirements developed through the Bay-Delta Plan process are considered in assessing requirements and compliance under the Biological Opinions related to the Central Valley Project and State Water Project.

6. Winter-run Chinook “Species in the Spotlight” Action Plan. The order underscores that implementation of the “Species in the Spotlight” Action Plan is an essential element of reducing both near-term and long-term risks to Winter-run Chinook salmon. This plan was developed by the National Marine Fisheries Service (NMFS) in 2016 as a high priority action plan that would guide allocation of NMFS resources, as well as attract funding from partner agencies and stakeholders. Reclamation and FWS will work with NMFS to incorporate spotlight actions into priorities developed under the Adaptive Management Framework.

President Obama signs the Water Infrastructure Improvements for the Nation (WIIN) Act
Maven's Notebook | December 16, 2016 | From the White House

Today I am signing the Water Infrastructure Improvements for the Nation (WIIN) Act into law. It authorizes vital water projects across the country to restore watersheds, improve waterways and flood control, and improve drinking water infrastructure. The law also authorizes \$170 million for communities facing drinking water emergencies, including funding for Flint, Michigan, to recover from the lead contamination in its drinking water system. That help for Flint is a priority of this Administration. WIIN also includes four Indian water rights settlements that resolve long-standing claims to water and the conflicts surrounding those claims, address the needs of Native Communities, fulfill the Federal trust responsibility to American Indians, and provide a sound base for greater economic development for both the affected tribes and their non-Indian neighbors.

Title III, Subtitle J, of the law has both short-term and long-term provisions related to addressing the continuing drought in California. In the long-term, it invests in a number of water projects to promote water storage and supply, flood control, desalination, and water recycling. These projects will help assure that California is more resilient in the face of growing water demands and drought-based uncertainty.

Title III, Subtitle J, also includes short term provisions governing operations of the federal and state water projects under the Endangered Species Act for up to five years, regardless of drought condition. Building on the work of previous Administrations, my Administration has worked closely with the State of California and other affected parties to address the critical elements of California's complex water challenges by accommodating the needs and concerns of California water users and the important species that depend on that same water. This important partnership has helped us achieve a careful balance based on existing state and federal law. It is essential that it not be undermined by anyone who seeks to override that balance by misstating or incorrectly reading the provisions of Subtitle J. Consistent with the legislative history supporting these provisions, I interpret and understand Subtitle J to require continued application and implementation of the Endangered Species Act, consistent with the close and cooperative work of federal agencies with the State of California to assure that state water quality standards are met. This reading of the short-term operational provisions carries out the letter and spirit of the law and is essential for continuing the cooperation and commitment to accommodating the full range of complex and important interests in matters related to California water.

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