BAY AREA WATER SUPPLY AND CONSERVATION AGENCY
BOARD OF DIRECTORS MEETING

March 18, 2021

Correspondence and media coverage of interest between March 15, 2021 and March 18, 2021

Correspondence

Date: March 18, 2021
From: Steven R. Ritchie, Assistant General Manager, Water
To: SFPUC Wholesale Customers
Subject: Shift of Presentation Approach for SFPUC 2020 Urban Water Management Plan

Date: March 15, 2020
From: Peter Drekmeier, Policy Director, Tuolumne River Trust
To: President Sophie Maxwell and Commissioners, SFPUC
Subject: Comments on Tuolumne River Voluntary Agreement

Media Coverage

Water Supply Management:

Date: March 17, 2021
Source: Maven Conferences and Seminars
Article: NCWA Annual Meeting: Secretary Crowfoot and CAL EPA's Kirstin Peer Discuss 'Ridgetop River Mouth Water Management

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March 18, 2021

TO: SFPUC Wholesale Customers

FROM: Steven R. Ritchie, Assistant General Manager, Water

RE: Shift of Presentation Approach for SFPUC 2020 Urban Water Management Plan

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With the publication of the SFPUC's draft 2020 Urban Water Management Plan (UWMP) approaching, I have directed staff to shift our presentation approach from a focus on the Water Supply Agreement Supply Assurance to the purchase projections. The main body of the Plan (primarily Section 8) will now contain the purchase projections as demands in the analysis. The existing analysis of the Supply Assurance included in the Level of Service of 265 MGD will remain in our document but will be included in an appendix. Text throughout the document is being modified to reflect this reorganization.

Though we are shifting this presentation approach, our findings related to the impacts of the Bay-Delta Plan and the severe cutbacks required by its implementation are not significantly different.

In January, we shared our modeling results, data tables and draft language with BAWSCA in recognition that many of you utilize this shared language in preparation of your individual UWMP documents. We are sharing more with BAWSCA as we progress on our schedule to release the draft SFPUC UWMP on April 5 with our public hearing scheduled for April 13. We recognize that our presentation shift may impact your plans and that some plans may already be ready for public review.

For the SFPUC, this shift allows public review of our UWMP document to focus on overall results versus lengthy discussion of demand and purchase projections versus our Supply Assurance and Level of Service. We apologize for any inconvenience this shift may cause.

cc: BAWSCA staff

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March 15, 2021

President Sophie Maxwell and Commissioners
SFPUC
525 Golden Gate Ave.
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Via Email

Re: Comments on Tuolumne River Voluntary Agreement.

Dear President Maxwell and Commissioners:

Thank you for hosting the two workshops focusing on the science behind the Bay Delta Water Quality Control Plan and the Tuolumne River Voluntary Agreement (TRVA). I write to share some comments on the TRVA.

I. The TRVA does not accurately depict the Bay Delta Plan.

On December 12, 2018, the State Water Board updated the Bay Delta Water Quality Control Plan and adopted new instream flow standards for the lower San Joaquin River and its three major tributaries, of which the Tuolumne is the largest. The instream flow requirements range from 30% to 50% between February and June based on whether biological goals and objectives are being met. Flows would start at 40%. The purpose of the range in flows is to incentivize non-flow measures, such as habitat restoration and predator suppression, which the State Water Board does not have the authority to require. The Board has always acknowledged that a combination of flow and non-flow measures would be necessary to restore the greater Bay-Delta ecosystem.

The TRVA document compares the TRVA to the Bay Delta Plan at 40% unimpaired flow and no non-flow measures. This is not the right comparison. If the poor performance of this scenario, as depicted in the TRVA document, were to result, then unimpaired flows would be increased to as high as 50%. Rather than give up the additional water, the water agencies would likely implement their non-flow measures to reduce instream flows to as low as 30%. The TRVA document should compare the TRVA to the Bay Delta Plan at 50% unimpaired flow and no non-flow measures, or to the Bay Delta Plan at 30% unimpaired flow with non-flow measures included.

Environmental and fishing groups are skeptical of the TRVA because it is based on unsubstantiated assumptions, and does not incorporate adequate adaptive management to be implemented if the measures fail to produce the desired

results. The best available science tells us that instream flows have the greatest impact on aquatic ecosystems. If the SFPUC truly believes the TRVA would "produce more fish with less water," then you should accept the burden of proof and work within the Bay Delta Plan structure. Simply marking off a checklist, but failing to restore the Tuolumne River and Bay-Delta, is not acceptable.

Much of the science cited by the SFPUC and Modesto and Turlock Irrigation Districts is flawed, which is why adaptive management is so important. In response to oral comments received from the Irrigation Districts, the Water Board wrote:

> The proposed TRMP [Tuolumne River Management Plan] represents the Districts' assessment of their proposed action using their own models. However, the validity of the Districts' biological models is highly uncertain and remains challenged by outstanding agency comments that were not resolved in the final study reports for the juvenile fish production models (CDFW 2014a; NMFS 2014a; USFWS 2014; TID and MID 2013b, 2017a, 2017b, 2017c). California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), and State Water Board documented disagreements with underlying model assumptions in multiple letters and comments in meetings regarding juvenile fish production models and the Districts' predation study and report (CDFW 2013a, 2013b, 2014b; NMFS 2014b; USFWS 2013a, 2013b; State Water Board 2013a, 2013b; Stillwater Sciences 2013; TID and MID 2013a, 2013b, 2016). Agency criticisms of the Districts' biological models include, but are not limited to, concerns that models do not recognize existing rearing and spawning habitat limitations or accurately represent temperature sensitivity, predation, and the effect of flow in establishing rearing and floodplain habitat benefits.[1]

The Irrigation Districts, the SFPUC and BAWSCA portray the Bay Delta Plan as focusing exclusively on instream flows and failing to take into consideration the benefits of non-flow measures. To this point, the Water Board responded:

> The Districts' analysis included flows and non-flow actions in the assessment of its proposal but did not conduct a comparable assessment of the LSJR [Lower San Joaquin River – Phase 1] plan amendments with non-flow actions. While the LSJR plan amendments do not require non-flow actions, they do recommend such actions. It would have been reasonable to include them in any comparison because the Districts are proposing the non-flow actions.[2]

In concluding its comments on the TRMP, the State Water Board wrote:

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[1] Responses to Oral Comment Received at the August 21 and 22, 2018 State Water Resources Control Board Meeting, page 9 – https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2018_sed/docs/comment_responses.pdf

[2] Ibid, page 9.

> Finally, the Districts' use of WUA [weighted-usable-area for floodplains] in isolation from other flow-related benefits does not include important habitat metrics such as food availability, propagation of downstream temperature benefits, migratory corridors, and the value of riparian channel margin and floodplain habitat activation. The TRMP analysis does not recognize the ability of the LSJR plan amendments to shape flows for targeted optimization of in-channel WUA at certain times and overbank floodplain habitats at other times. The LSJR plan amendments provide a sufficient water budget to shape flows for more frequent floodplain activation while the proposed TRMP doesn't propose enough flow to trigger such ecological functions as often as the LSJR plan amendments. For these reasons described above, the Districts' juvenile fish production models are not appropriate for comparative analysis to the FERC base case or the LSJR plan amendments.[3]

II. The NMFS-commissioned peer review of the irrigation District's fish models identified major flaws.

The SFPUC and Irrigation Districts have failed to address concerns raised by the NMFS peer review of the fish models[4] upon which the TRVA is based. Following are some of the conclusions from the report:

> The Chinook salmon population model is useful but not usable by all stakeholders; and the *O. mykiss* [rainbow trout and steelhead] population model is neither useful nor usable.
>
> The [Chinook] model is not a full life cycle, which hampers its utility for evaluating potential benefits of management actions to the overall population.
>
> A shortage of habitat quantity, including spawning habitat and gravel availability, is not a limitation on the population at abundance levels that are of concern. Thus, gravel augmentation would not significantly improve population performance.
>
> The Chinook salmon production model cannot identify the number of predators that would need to be removed or how much of a reduction in consumption would be required to achieve a significant increase in smolt-to smolt survival. The response from predator control is assumed, not predicted.

[3] Ibid, page 10.

[4] NOAA National Marine Fisheries Service's Technical Review of Salmonid Population Models e-Flied to the FERC Projects' Dockets – https://static1.squarespace.com/static/5eebc0039b04b54b2fb0ce52/t/5ffe1a69cc1c8606a3081719/1610488432168/X-3+NMFS+Peer+Review+of+Fish+Models.pdf

> It bears noting that the model, as developed, found water temperatures to be the major environmental factor driving juvenile *O. mykiss* productivity downstream of the dam. Flows released below La Grange Dam are apparently the major factor affecting water temperatures.
>
> The model, as configured, indicates that the status of the Chinook salmon population is extremely precarious and bold actions will be needed to prevent extirpation. This need, according to the model, would best be met by very substantial increases in flow releases during spring (the period of active smolt outmigration from the river).

In responding to the peer review, the Irrigation Districts took exception to the following statement:

> It [the model] appears designed to only address whether alternative "X" is better or worse than alternative "Y" in relative terms. While this is useful when comparing alternatives, the metric is not useful for informing how an alternative improves the intrinsic productivity or overall abundance of a stock because, in part, much of the production of the population is not included in the metric.[5]

The Irrigation Districts responded (emphasis added):

> In fact, relative comparison of alternative flow and non-flow measures was precisely the purpose of the Districts' two models, as approved by FERC and developed during intensive collaboration with relicensing participants – collaboration which NMFS chose not to actively engage in. Results from these models are intended to be used to investigate the relative extent to which abundances of juvenile Chinook salmon and multiple life-stages of *O. mykiss* are influenced by in-river factors and conditions. ***The models were never intended to serve as a 50-year resource management tool for use by NMFS or other parties responsible for managing regional fisheries***. This fact would have been readily discernable by the third-party reviewers if they had exercised even a minimal amount of due diligence in examining the relicensing record. As FERC made clear in its 2011 Study Plan Determination ("SPD"), if such a model was needed for long-term management of fisheries, the responsibility for developing one resides squarely with NMFS itself. Criticizing a model for what it was never intended to do highlights the ill-informed nature, lack of relevancy, and bias of the third-party review.[6]

The problem here is that the State Water Board and other resource agencies <u>are</u> responsible for managing regional fisheries. The TRVA proposes the models to serve as the basis for long-term

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[5] Ibid, page 40.

[6] Districts' Comments and Technical Review of NMFS' August 27, 2020 Filing of "Third Party Review of Tuolumne River Chinook Salmon and Oncorhynchus mykiss Population Models" – https://static1.squarespace.com/static/5eebc0039b04b54b2fb0ce52/t/601862788a33bc20f2e030b8/1612210812115/Districts+Technical+Review+NMFS+Model+Review+%2812-22-20%29.pdf

resource management of the Tuolumne River – contrary to the position the IDs took in their response. FERC went easy on the Irrigation Districts, essentially just aiming for conditions on the Tuolumne to not get worse, but the State Water Board has a legal mandate to restore the Bay-Delta and Tuolumne River ecosystems.

III. The TRVA document exaggerates the TRVA's contribution to instream flows.

The TRVA document emphasizes an increase in "required discharge" rather than focusing on "total discharge." Required discharge primarily involves better timing of "spill" – water that must be released when reservoirs are expected to fill in order to prevent downstream flooding. Little of the required discharge included in the TRVA is new water.

The following graph from the TRVA[7] shows required discharge to be 216 thousand acre-feet (TAF) under the base case, 673 TAF under the Water Board's 40% unimpaired flow, and 351 TAF under the TRVA. In other words, the TRVA would produce 38.5% more "required discharge" than the base case.

"Total discharge" is an entirely different story. Under the base case it is 821 TAF, under the Bay Delta Plan's 40% unimpaired flow it is 987 TAF, and under the TRVA it is 859 TAF. The TRVA would produce only 4.5% more "total discharge" than the base case.

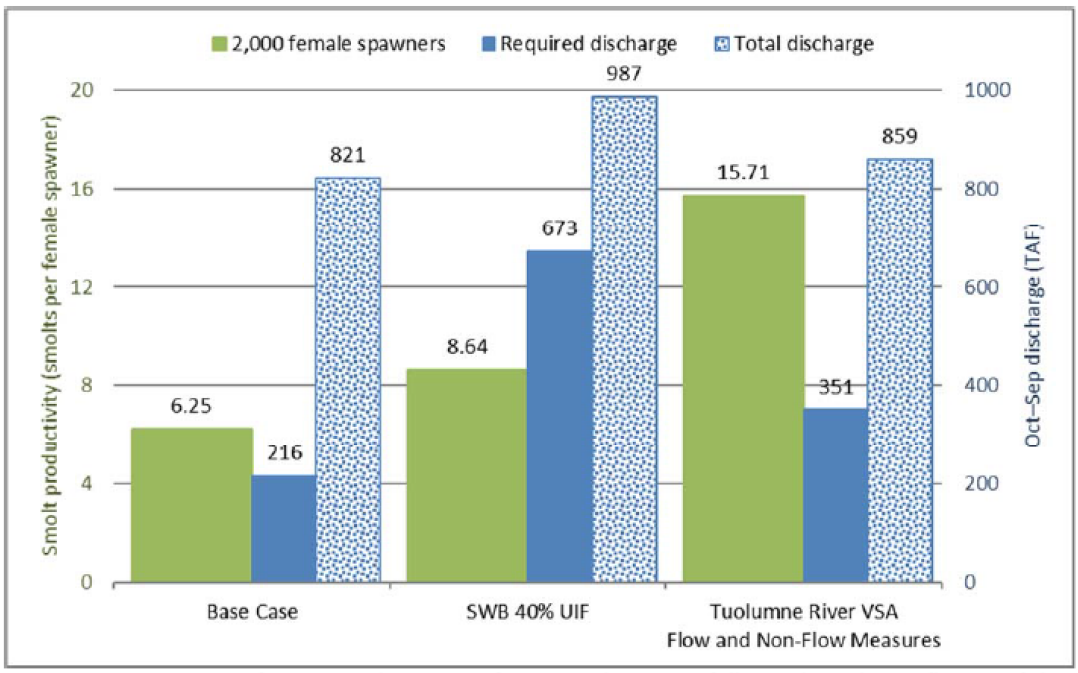

Figure 10. *Comparison of anticipated increase of FRCS smolts successfully reaching the confluence of the San Joaquin River. Required and total discharge measured at the La Grange gage.*

[7] Voluntary Agreements, Appendix A6: Tuolumne River, page A-192 – https://static1.squarespace.com/static/5eebc0039b04b54b2fb0ce52/t/6006f702a7cd5a36af4a5b67/1611069188501/4+Tuolumne%2BRiver%2BVA.pdf

After decades of ecosystem decline on the Tuolumne, the Irrigation Districts should already have been managing the timing of spill to "allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam," as required by Fish and Game Code Section 5937. Using better timing of spill as a bargaining chip in the TRVA is inappropriate.

IV. The TRVA forces fish species in different life stages to coexist in the main channel where predation occurs.

A major problem with the TRVA is that it requires a number of species at different life stages to coexist in the main river channel. This is not natural, and exacerbates predation of juvenile fish. In a natural environment, mature fish inhabit the main channel where water is deeper, faster moving and cooler, while baby fish inhabit floodplains where the water is slower moving and they have access to more food and refuge from predators.

The TRVA is full of examples of the need to make trade-offs between species and life stages. For example:

> Adult *O. mykiss* [rainbow trout and steelhead] habitat is 78% of maximum WUA [weighted usable area] at 200 cfs. An alternative flow of 150 cfs was considered, which improves fry habitat to 78% of maximum WUA, but decreases adult habitat to 70% of maximum WUA. At 150 cfs, average daily water temperatures at RM 43 are less than 20 C until maximum daily air temperature exceeds 95 F, which occurs on average three days in June. An alternative flow of 300 cfs increases adult WUA to 90%, but decreases fry to just over 60% of maximum WUA.[8]

The above conclusion refers to a single species. Elsewhere in the TRVA are examples of trade-offs needed to be made between different species.

V. The TRVA is based on non-flow measures that have failed in the past due to the lack of sufficient instream flow.

The Irrigation Districts have a poor track record of managing the Tuolumne River. Consider this. In 1944, 130,000 salmon spawned in the Tuolumne. This occurred after many decades of in-river mining, the introduction of striped bass in the late 1800s, and La Grange Dam having cut off access to 85% of historic spawning grounds in 1893. Based on these facts, we can surmise that the Tuolumne historically hosted 150,000 salmon or more. In 2020, the number barely topped 1,000.

[8] Ibid, page A-171.

A good example of a non-flow measure failing as a result of inadequate flows is the Special Run Pool (SRP) 9 project, which came up at the February 5 workshop. This project was initiated through the 1995 Settlement Agreement, which, like the TRVA, placed a significant focus on reducing predators and predator habitat. SRPs are in-river gravel pits that harbor non-native species, such as bass. The SRP 9 project filled in that pit, but after costing approximately $2.8 million, it simply exchanged one non-native predator (largemouth bass) with another (smallmouth bass).

The Districts' own post-project monitoring report was clear about the importance of flows in affecting predator habitat. It stated:

> During extremely wet years, high flows can flush largemouth bass out of a stream, but typically a sufficient number of adults can find shelter in flooded areas to repopulate the stream during lower flow conditions (Moyle 2002). During the years following the flood, largemouth bass abundance was controlled by spring and summer flow conditions that were unfavorable for reproduction. Largemouth bass require low water velocities and warm water temperatures to reproduce (Moyle 2002, Swingle and Smith 1950, Harlan and Speaker 1956, Mraz 1964, Clugston 1966, Allan and Romero 1975, all as cited in Stuber et al 1982) (p 130).

VI. Conclusion

The likelihood of the SFPUC running out of water as a result of the Bay Delta Water Quality Control Plan is extremely small. At current demand, the SFPUC could manage a repeat of the worst drought on record (1987-92), with the Bay Delta Plan in effect, without requiring any rationing or bringing any new water supplies online. By requiring 20% rationing beginning in Year-3 of this scenario, the SFPUC could manage eight years of the design drought. In an absolute worst-case scenario, the State Water Board would step in and require the Irrigation Districts to sell water to the SFPUC.

On the other hand, without the unimpaired flows required by the Bay Delta Plan, Central Valley salmon would almost certainly go extinct. Let's not allow this to happen on our watch, especially so unnecessarily. You have the opportunity of a lifetime to improve California's salmon fishery and the Tuolumne and Bay-Delta ecosystems. Let's work together to achieve the State's co-equal goals of restoring the greater Bay-Delta ecosystem while ensuring a reliable water supply for San Francisco and BAWSCA.

Sincerely,

Peter Drekmeier
Policy Director

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NCWA ANNUAL MEETING: SECRETARY CROWFOOT AND CAL EPA'S KRISTIN PEER DISCUSS 'RIDGETOP TO RIVER MOUTH WATER MANAGEMENT'

Maven Conferences and Seminars | March 17, 2021

The Northern California Water Association Annual Meeting was held on March 5, 2021. The theme was 'Ridgetop to River Mouth Water Management.' For the opening session, Thad Bettner facilitated a discussion between Natural Resources Secretary Wade Crowfoot and Deputy Secretary and Special Counsel for Water Policy at Cal EPA Kristin Peer, who works closely with Secretary Blumenfeld and the State Water Board and the Regional Water boards on all things water. Their discussion began with watershed management, then the voluntary agreements, and concluded with the Newsom Administration's big vision.

MULTI-BENEFIT PROJECTS AND WATERSHED MANAGEMENT

Thad Bettner noted that the theme of 'Ridgetop to River Mouth' fits with many of the Newsom Administration's priorities as reflected in the Water Resilience Portfolio and the 2021 budget, which includes funding for forest health, floodplain restoration, and groundwater management. He asked them to share their vision and thoughts on multi-benefit water management and how local and regional agencies can work with the state to advance some of these important efforts.

Secretary Wade Crowfoot praised the work underway in the Sacramento Valley, noting that they have taken a holistic vision of the water system and figuring out how to improve environmental management in a manner that actually improves water reliability.

"As you point out, it starts in our forested watershed where the snow and the rain falls and makes its way out ultimately to the ocean, serving our economy, our communities, and the environment in between," he said.

“From our perspective, the Governor’s Water Resilience Portfolio takes an all-of-the-above approach on managing, improving, restoring, and stabilizing these systems. We know it’s not just about water supply; it’s about environmental management and so many other things. That’s where these multi-benefit projects come in. You all deserve a lot of credit for elevating the use of multi-benefit floodplains as an example of how we can reduce downstream flood safety risks, improve our groundwater aquifers in some cases, and create habitat in a way that will keep our fish healthy. And we know if our fish are healthy and avoid falling into that endangered species status, we’re going to have a more stable reliable water system.”

Secretary Crowfoot said there are many examples of this, but one area he is most excited to see progress on is building the connection between water agencies and forest management. He noted that Northern California Water Association member agencies, such as Yuba Water Agency and Placer County Water Agency, are investing their resources in maintaining and restoring the health of forested watersheds because they know that’s going to protect the water quality and quantity that they deliver to their customers.

“I’d like to see us figure out a way to amplify that type of leadership not only across the Sacramento River Valley but across the state so that we’re taking care of our water systems by taking care of our forests.”

Kristen Peer noted the dramatic impacts to the state’s water systems due to both the pandemic and the unprecedented wildfires, which burned more than 4 million acres across the state.

“Early on in the pandemic, the governor issued a moratorium on water shut-offs for people’s inability to pay their water bills,” she said. “The State Water Board looked into that recently. We knew there would be impacts from that, but when the executive order was signed, nobody had any concept of how long the pandemic would take to clear up. We looked at some data, and we have an estimated $1 billion in total household debt across the state as of January, and that continues to grow. That means that at least 1.6 million households in California have water debt which is approximately 12% of households throughout the state.”

“The pandemic’s impacts are also being felt at the system level. So a lot of small water systems that were already vulnerable and don’t have the capacity and never did have the capacity are hit with the shock and are less able to manage for that. We’re working now on how we’re going to manage coming out of the pandemic so that these don’t continue to be ongoing impacts that we’re dealing with.”

“We all know wildfires have significant impacts on watersheds, and post-fire storm systems are devastating. These post-fire storm systems can bring sediments and debris and sometimes hazardous materials into our reservoirs and our surface waters. All of this is to say that we will need multi-benefit restoration projects now more than ever, and it takes an all-of-the-above strategy. We need everybody involved.”

Ms. Peer noted that there are opportunities where NCWA and others could get involved. “One is a spatial analysis to help us prioritize in the Oroville, Shasta, and Trinity watersheds. Cal EPA and the Resources Agency are currently developing that tool, which will help us identify the priority areas for restoration projects going forward. There’s going to be outreach in the near future on how stakeholders can get involved in that process. And we would welcome the expertise of the NCWA agencies in that.”

“Another area is the State Water Board is working closely with the Department of Fish and Wildlife and Sustainable Conservation to develop a general restoration permit that would cover large restoration projects. That would include mitigation projects, voluntary restoration projects, and potentially even mitigation that could be included with the voluntary agreements. And so that is anticipated to be coming out later this spring, and hopefully, we’ll have in place adopted an order by the end of the year. So a lot is going on in this space, and we really would welcome the engagement of your member agencies in all of it.”

THE INCREASING LIKELIHOOD OF A DRY YEAR

Thad Bettner noted that during the 2014-2015 drought, NCWA agencies worked with state agencies to manage the system. He noted that NCWA has a Dry Year Task Force looking at potential actions to take. “As you look forward to the rest of the year, what are some of your initial thoughts on how we can be working together to get through a drought if it still remains dry?”

Secretary Crowfoot said it’s fairly clear that it will be a dry or critically dry water year, on top of last year, which also was a challenging water year. “We’ve been coordinating across agencies

for the last few months and preparing ourselves for the second dry year. And that means any number of things, including what administrative actions we'll need to take to allow, for example, reservoirs to keep water in storage for later in the year."

"One benefit of coming out of the epic drought of the middle part of the last decade was that a lot of us were here for that and managed our way through it with partnerships with water agencies. So I think in terms of working together, we'll continue to rely on two-way communication and be very nimble around how we manage our system and what types of flexibilities we might be able to exercise. We're working on how we can make water transfers more nimble than they've been in the past, and the Department of Water Resources has made some strong improvements there. And then how we can make decisions in real-time regarding environmental management. We need to protect these endangered species while maximizing the use of water for supply. I will say at the same time, we have to keep our eyes on the prize, which is building resilience over the long term."

Secretary Crowfoot pointed out that the Governor's proposed budget calls for more funding for local assistance for sustainable groundwater management (or SGMA). "We're going to continue to need to allow SGMA to be implemented by local agencies, even as we contend with the current year, and we're going to continue to build more habitat, using about $175 million of Prop 68 funding in partnership with NCWA agencies over the next few years."

He noted that if conditions stay dry and there are similar impacts as in the last drought, they will likely pull together in a task force or a multi-agency group that will allow for participation from water agencies.

Kristin Peer pointed out that there were significant impacts to salmon from the last drought and mortality events in the Sacramento River. "So temperature management is forefront, and all indications are looking like this year is going to be dry and potentially drought year. So early planning is really important, and these next couple of months are going to be crucial to making sure that the right management decisions are made to protect the temperatures coming out of Shasta and going into the Sacramento River."

"In the past, NCWA agencies have been really helpful in developing the plan and also developing voluntary actions that can be taken to ameliorate some of the most significant impacts to temperature, and we'd welcome that type of interaction again this year. Certainly, these next couple of months are going to be critical. The draft temperature management plan comes to the State Water Board from the Bureau of Reclamation, usually in mid-April, and then the EIS is finalized in late May. So again, now is the time to kind of start looking at that and figuring out how we're going to manage it."

VOLUNTARY AGREEMENTS

Mr. Bettner noted that both Secretary Crowfoot and Ms. Peer are involved in the voluntary agreement discussions, albeit from different perspectives. What are your insights on where voluntary agreements stand, and how are your agencies approaching them?

Secretary Crowfoot said they are all working together across agencies in a new and different way. “Early on in a cabinet meeting, Governor Newsom came in, looked at us all, and said, ‘Look, I understand that you get treated as pretty important people in Sacramento, but very few people outside of state government actually know what each of your agencies does. And what they care about is, are you getting stuff done for California?’”

“Historically, and naturally, in big government, there can be these institutional tensions and sort of turf between departments or agencies. We’ve worked hard to break down some of those inherent tensions among our different missions within state government. We have what’s called a ‘One State Water Team.’ We frequently meet with Kristin and Jared [Blumenfeld, Chair of Cal EPA] and Joaquin [Esquivel, Chair of the State Water Board] and Eileen [Sobeck, Executive Officer] at the Water Board, and Chuck [Bonham, Director of Fish & Wildlife] and Karla [Nemeth, Director of the Department of Water Resources]. That doesn’t mean we don’t have different perspectives or we don’t have different obligations. But we work to really problem solve and make decisions as an administration. A good example of that was the Water Resilience Portfolio.”

“On the voluntary agreements, I think there used to be a perception that DWR and Fish and Wildlife were one team working with the water contractors, and they threw something over the transom to the water board for the water board to consider quietly in a black box. That was the stereotype. I think we’ve put that on its head. What we worked for the first year to do is bring all of the parties together in a plenary session that met on a bi-weekly basis for almost an entire year, and to develop these voluntary agreements to enable the water board to do what it’s mandated to do by state and federal law, which is update the water quality plan.”

“We know that the Water Board has to do this,” continued Secretary Crowfoot. “So our focus is to develop a package that’s workable for water agencies, state and federal agencies, and for environmental conservation groups that will protect those beneficial uses more quickly than the traditional process of regulations and water rights adjudication litigation. And so we continue to think a voluntary agreement or set of agreements is a win-win-win. We’re not agnostic on actually whether we want to achieve a voluntary set of voluntary agreements – we very much do. The complexity and the time that we’ve taken is we need to ensure that the program of implementation, including the flows and the habitat, actually is scientifically adequate, and therefore legally adequate.”

“The voluntary agreement once produced will go through a blind scientific peer review, where objective scientists that know nothing about the politics of California water are going to review it for its adequacy. It’s going to go through a CEQA process and, ultimately, through public analysis and hearings at the State Water Board. As champions of the voluntary agreements, we want to make sure that those agreements are an adequate program of implementation.”

“We know that the voluntary agreements will be challenged legally, and so all the work we’ve been doing is to ensure that we can collectively identify the assets – the flow, the habitat, the management, and the science that’s going to meet the bar that federal and state law sets for the Water Board.”

“Over 2020, we were stymied by some pretty significant differences with the Trump administration as it relates to the protection of endangered species, and those legal differences halted our progress,” said Secretary Crowfoot. “The good news is that the new administration has made it very clear that they want to roll up the sleeves, work with us, explore how we resolve those legal differences and get back around the table on the voluntary agreements. The water agencies have been hard at work in recent months working on the voluntary agreement framework (or something similar to it) to present to the Water Board.”

“I’m very bullish, actually, right now,” he continued. “I know the Governor wants to get this done because I hear from him quite regularly asking for status updates. We’re doing the good work with water agencies and other stakeholders really identifying what assets are needed, ultimately, to flow into that set of agreements and ultimately be analyzed and presented to the Water Board.”

"I would add that this is something that the State Water Board is also quite supportive of, and hopefully we'll succeed because the improvements can get into the system much more efficiently and effectively," said Kristen Peer. "It can be a suite of assets – it's flow, habitat, funding. It's the whole system working together. Those things are either difficult or impossible for the Water Board to regulate because they have limited authority. So they recognize the benefits of the VAs and are hopeful that we will succeed in bringing them a package that is scientifically and legally adequate, which is what we are aiming to do."

"Even if that doesn't happen, the board is going to be completing its update of the water quality control plan, and in that, there will be a voluntary pathway," she continued. "The hope, of course, is that we bring something fully baked to the board for analysis. But even if that's not completed, there will be a pathway analyzed for voluntary agreements that can be slotted in. So this is something that the State Water Board is supportive of and, of course, Cal EPA is and has been for a number of years at this point."

"I might add a couple more things," said Secretary Crowfoot. "One is, this challenge is decades in the making, so we appreciate everyone's patience, recognizing that it's going to take some time to figure this out. We've been at this for about two years in this administration. And we do think we're making progress. Many of us spend more time on the voluntary agreements than any other single initiative within state government right now."

"The other point is we've really tried to make more transparent our assessment around the voluntary agreements," he continued. "Jared [Blumenfeld, Secretary of Cal EPA], and I have called this the open book test. So we have invited in the water board staff and the Fish and Wildlife staff, and the water resources biologists so that we're all understanding how we determine adequacy or consider adequacy. That's not the official process that the water board has to go through; that's an independent process. But this gives us a sense of really what's needed to be adequate. And we think that's going to serve us in the months to come."

Thad Bettner noted that the proposal has been out there for a while. To Secretary Crowfoot, when do you think would be the right time to sit down and reconvene with us about where we may be on our respective proposals? And for Ms. Peer, if the board is going to march forward with its process, when would we need to get something in there to have a viable alternative to an unimpaired flow approach?

Secretary Crowfoot said that the time is now to focus on getting a proposal for consideration done. "I think in early spring, which is basically now, we should get back around the table with

more detail and understand what's being proposed by the various parties. I want to encourage us to roll up our sleeves and get this done as it relates to the proposal. We think we were pretty clear about the voluntary agreement framework that we put out last year, and we really worked hard to identify what is that base level of adequacy for a proposal."

"Things got complicated as we change the pumping regimes in the Delta from the federal biological opinion and the state incidental take permit," he continued. "So it took some time then to figure out okay, how are we expressing that framework, that baseline adequacy, given those different regimes? We think we're in a place right now to help articulate what's needed to meet that adequacy. So I do think that this spring, getting back around a table and talking through what's being proposed would be helpful because I know the Water Board needs to needs to move forward on phase two to comply with the state and federal legal requirements."

"We are intensely focused right now on rounding out the discussions and getting a package together," said Ms. Peer. "So the time is now, but folks should rest assured that there will be plenty of notice if and when the board decides to continue the process, and there will be a lot of process before anything is completed. So stay tuned on that. But again, the focus now is really to try to solidify the package to present."

THE BIGGER PICTURE

Thad Bettner then turned to the bigger picture and strategic visioning. "Certainly, the Governor's October 2020 Executive Order had some nature-based solutions and biodiversity targets. So maybe give us some thoughts about that for us in the Sacramento Valley. What can we be thinking of? How can we be helping? Or what potentially do you have planned for our region that we can look to partner with you and engage on some of these longer-term visions?"

"I think it starts with a recognition that our water system of systems built California into what it is today," said Secretary Crowfoot. "Think about the flood control reservoirs in the Sacramento Valley that enabled safe settlement in the Sacramento Valley. Human engineering is central to

essentially water deliveries and our water system; at the same time, our conditions are changing. We know that the dry periods are getting drier, the wet periods are getting wetter. And we need to figure out ways to transform our water systems, which tend to be centralized, fairly rigid, and somewhat static, into more decentralized, dynamic, and flexible systems."

"One way that we think we can do that is reintegrating more nature into those systems for a variety of reasons," he continued. "A couple of great examples of we've already talked about – treating our forested watersheds as the green infrastructure that they are and restoring and maintaining the health of those forests, recognizing that it benefits our water system. Likewise, our seasonal floodplains … using the flood space, not only for flood protection, benefit, and recharge but also for environmental habitat. Nature-based solutions or the idea of reintegrating nature into our water system is really powerful. And we want to identify ways to continue to amplify that. And so the Governor's Executive Order was really trying to elevate a little bit more of the idea of investing in these multi-benefit nature-based solutions that you all are so familiar with."

"One of the targets that we've set is conserving 30% of our state by 2030," said Secretary Crowfoot. "When we say conserved, we don't mean fence off from people or more land necessarily, but how do we improve environmental conservation on our working lands, on our farms, our ranches, our forests, and in our natural places? We think that more conservation, which can include economically profitable working lands, will benefit the environment and, ultimately, our sustainability as an economy in California."

"Think about your rice fields in the Sacramento Valley, world-famous for its production of quality rice, but also that's incomparable environmental habitat for migrating shorebirds and birds that's replaced all the wetlands that we lost over time. To me, advancing nature-based solutions dovetails really well with the vision you are trying to drive in the Sacramento Valley. And I think over hopefully years and decades, we'll provide more resources and more policy tools to actually continue building out those nature-based solutions in your part of California."

Ms. Peer then noted some ways NCWA agencies can get involved in the implementation of the executive order. "The implementing mechanism is the California Biodiversity Collaborative that is bringing together state agencies, federal agencies, organizations, and stakeholder organizations, NCWA agencies, and water agencies, to share information and build on best practices. You all have the expertise that is critical to understanding the needs and how to achieve them. And so that network is getting off the ground now, and I encourage folks to get involved."

"There's also going to be a report, Pathways to 30/30 that is going to help set a baseline assessment so that we understand what we're adding and how we're achieving that 30 by 30 goal," she continued. "That's another place where the expertise of your member agencies can be really helpful. I really encourage folks to look at the Resources Agency website, where there's a ton of information on all of this. And there will be lots of meetings in the near future to get that off the ground."

“We’ll be holding regional conversations,” added Secretary Crowfoot. “So we’ll likely be coming into the Sacramento Valley to discuss our efforts around conservation, nature-based solutions, and climate-smart land strategy. And we’re excited for NCWA participation.”

CLOSING THOUGHTS

Anything else you’d like to share with us …?

“I would just say stay at it,” said Secretary Crowfoot. “The Sacramento Valley is, to me, one of the more inspirational places in the state, where you’re working across sectors, the ag sector, the environmental conservation sector, the water sector, the forest sector, to find workable solutions for communities, the environment, and the economy. So I would say stay at it. You’ve been great about constructively pushing us to do more of this type of multi-benefit work while staying focused on the voluntary agreements. So, I think we just need your ideas and continued collaboration. I really want to lift up much of what you do right now through NCWA and the Sacramento River Valley as a model for the rest of the state.”

“We’re facing really unprecedented challenges right now, and we are not going to solve them alone,” said Ms. Peer. “The state can’t do it alone and really needs the engagement of everybody. It’s an all-hands-on-deck situation we’re in, so I really appreciate your continued involvement in the voluntary agreements space and in helping with a 30 by 30 effort.”

To watch the video of the meeting, click here.

# # #

BAY AREA WATER SUPPLY AND CONSERVATION AGENCY
BOARD OF DIRECTORS MEETING

March 12, 2021

Correspondence and media coverage of interest between February 11, 2021 and March 8, 2021

Media Coverage

Water Supply Conditions:

Date: March 8, 2021
Source: CNN Weather
Article: Multiyear drought builds in western US with little relief in sight

Date: March 4, 2021
Source: USA Today
Article: Persistent dryness in the West is exacerbating region's 'megadrought'

Date: March 2, 2021
Source: San Francisco Chronicle
Article: California's wet season nears an end with big concerns about drought

Date March 1, 2021
Source: Merced Sun Star
Article: As another dry year looms in California, key steps will make a resilient water future

Date: March 1, 2021
Source: YubaNet
Article: New Study Identifies Mountain Snowpack Most "At-Risk" from Climate Change

Date: February 11, 2021
Source: Center for Western Weather and Water Extremes
Article: Distribution of Landfalling Atmospheric Rivers over the U.S. West Coast During Water Year 2021: Quarter Year Summary

Bay Delta Plan:

Date: March 8, 2021
Source: AgriPulse
Article: Crowfoot calls for patience with voluntary agreements

Date: March 2, 2021
Source: Maven Meetings
Article: MET Bay Delta Committee: Update on the Voluntary Agreements, Delta Conveyance Project

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Multiyear drought builds in western US with little relief in sight
CNN Weather | March 8, 2021 | Chad Myers and Monica Garrett, CNN Meteorologists

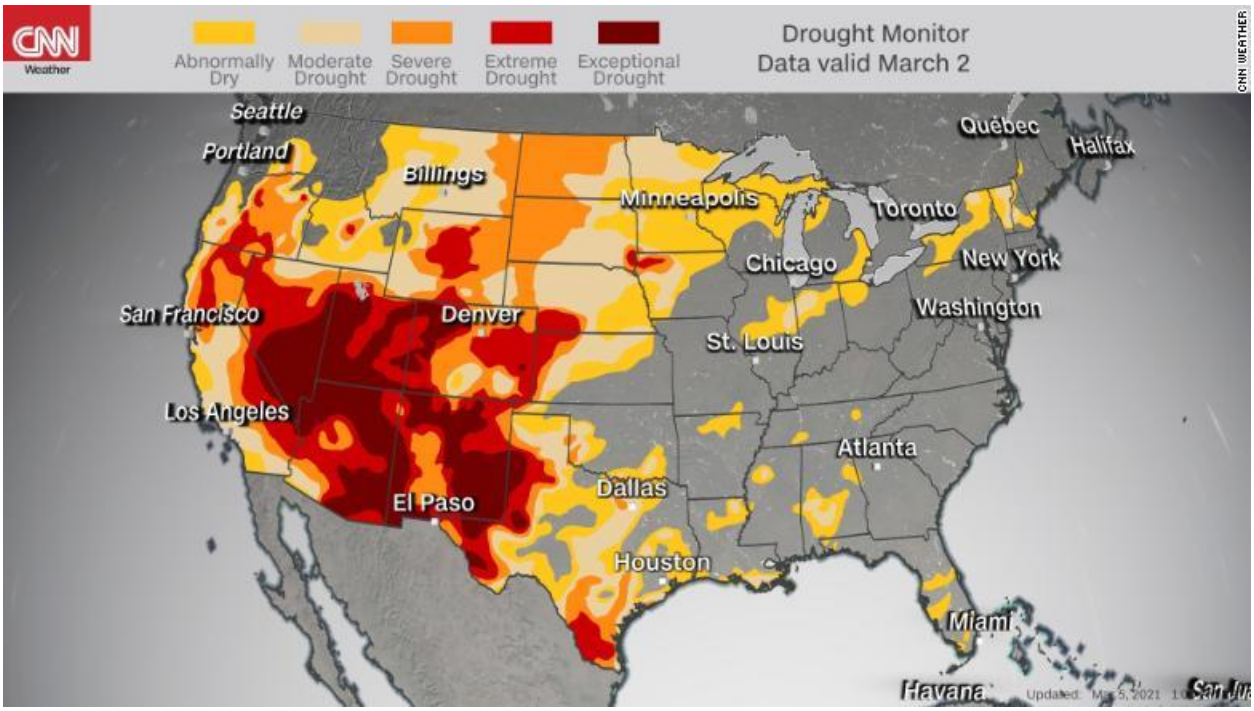
(CNN)While much has been written this year about atmospheric rivers, avalanche warnings and even flash flooding, the western half of the United States is experiencing a crushing drought.

The weather patterns have left parts of the Northwest soggy. Still, 80% of the land in the western states face some official category of drought.
That is nearly half of the entire continental US, or put another way, the size of New York State times 25. The drought is affecting more than 70 million people.

Lack of rain sets records

The scope of the western drought is chilling. All of Nevada, Utah and New Mexico are in drought, according to the US Drought Monitor. Close behind are Arizona at 98.9% and Colorado at 98.6%.

More disturbing is the size of what's called the "exceptional drought" area, according to the US Drought Monitor. Parts of Arizona, Nevada, Utah, New Mexico, Colorado, California and Texas classified as exceptional drought, total 265,200 square miles. For comparison, that is nearly equivalent to the size of Texas.



There are four categories of drought defined by the US Drought Monitor ranging from moderate to exceptional. Exceptional drought areas have defoliated trees and shrubs, the grass is brown or dead and lakes and streams are extremely low or dried up completely.

Drought is not just a lack of rainfall, it is a prolonged precipitation deficit that can and will affect all things. Even a desert can be under drought conditions. In an area that averages 6 inches of rainfall per year, plants and animals thrive. If the rain stops, the consequences will be deadly.

"The Four Corners [Arizona, New Mexico, Colorado and Utah] is the epicenter of this drought," said Brian Fuchs, climatologist at the National Drought Mitigation Center at the University of Nebraska. "When droughts like this happened long ago, the people living there just had to move."

The western US has had no shortage of dry spells over the last year thanks to the failed Southwest summer monsoon.

Las Vegas had a streak of 240 days from April to December 2020 without measurable rain -- a trace or less -- smashing the previous record of 150 consecutive days in 1959.

Yuma, Arizona had a dry streak of 242 days last year, their third longest streak, while Phoenix was dry a consecutive 110 days. Bishop and Needles, California, also had record dry streaks of over 200 days without measurable rainfall.

Winter usually brings welcome rainfall to the West, but La Nina has made its usual impact, funneling moisture to the Northwest and keeping the Southwest dry.

Los Angeles, Phoenix and Yuma, Arizona all tied for their driest February with no measurable rainfall. Las Vegas only measured 0.01 inch of rain in all of February -- the 11th driest.

"Obviously this La Nina has been dry, but even in the last couple of El Nino events, where we should be very wet, our precipitation has only been slightly above normal and not 150-200% above normal like we had in the 1970s and 80s," said Andrew Church, meteorologist at the National Weather Service in Albuquerque.

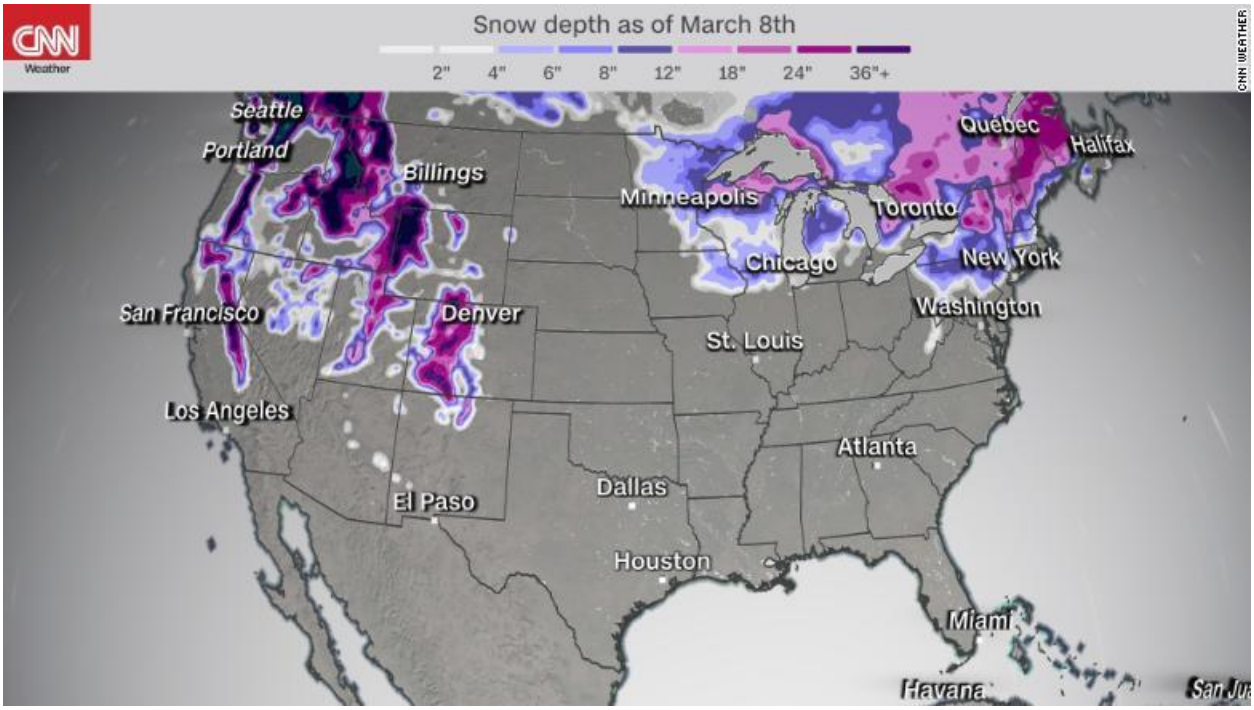
Mountain snowpack is not enough to dent the drought

In the West, winter snowpack can be more effective at relieving drought than summer thunderstorms, the snowpack melts slowly and doesn't just runoff the parched soil.
"Winter is the bank account of water storage and water accumulation. It sets the stage for summer," said Fuchs.

Those living in wetter climates see rainfall as the main driver of drought reduction, but in the West, winter snowpack is much more important. It acts like a reservoir of freshwater to be used later in the year as the snow melts.

In early February, a series of storms brought a glimmer of relief to parts of Arizona, particularly in the higher elevations where there was a dramatic increase in snowpack. But in general, "there were no widespread changes to the intense, protracted drought across the Four Corners

states and some adjacent parts of the High Plains and Great Basin," said the Climate Prediction Center (CPC) in their US seasonal drought assessment.



The snowpack for the 2020-2021 winter season has not been well distributed, with parts of Washington state at 140% of normal to places in New Mexico under 10% of normal.

Unfortunately, those regions with the worst drought are also those with the least amount of snowpack.

Much of the central Rockies are at 70% to nearly 90% of normal. That doesn't sound so terrible, but when you factor in how depleted the water system is, even a 100% normal snowpack won't be enough to end the drought.

"Moving forward, the large area of drought covering much of the western half of the country is expected to generally persist, with areas of intensification possible," the CPC forecasts through the end of May.

Water shortages and wildfires ahead

When below average precipitation occurs over a long period of time, people, the environment, wildlife and economic activity will be negatively affected.

"Snowpack is important, but for lower elevations, summer monsoon rains matter for ranchers and livestock. Many ranchers have been hauling in hay and trucking in water," said Justin Johndrow, meteorologist at the National Weather Service in Flagstaff. "Our normally wet summer monsoon season was among the driest on record."

It's not just livestock that are being impacted, there are over 150 million acres of crops currently experiencing at least a moderate drought in the US, according to NOAA's National Integrated Drought Information System.

"Lots of wildlife depend on the small bodies of water and we will have more impacts to deal with," said Fuchs.

"South of I-40 here in New Mexico has been in a 20-year drought. The new normal is drought and fire season is now just the entire year down there," said Church.

"Fire season could be much worse than normal if we don't get a change in this current weather pattern," Johndrow said. "The Significant Wildland Fire Potential for June (issued by the National Interagency Fire Center) is for an above normal threat."

Droughts have been intensifying, especially in the West and Southwest US, according to the latest National Climate Assessment. Combined with the reduced snowpack and a larger of percentage of precipitation falling in short, heavy downpours (that doesn't allow for as much penetration into the soil), climate change is playing a key role in the scarcity of water in the West.

"As the drought worsens and becomes more prolonged, more people will increasingly have less access to the water that they use for drinking, earning a living, or recreating," warns Andrew Robertson, chief of the Hydrologic Assessment and Modeling Unit at US Geological Survey But the situation isn't completely dire -- we can adapt to minimize the impacts.

"In the Middle Rio Grande basin around Albuquerque, water conservation efforts, like xeriscaping and transitioning to surface water to supply much of the city's drinking water, groundwater levels have actually been rebounding despite the decades of drought," said Robertson. "So, there is hope when people work together to acknowledge and address these resource challenges."

# # #

Persistent dryness in the West is exacerbating region's 'megadrought'
USA Today | March 4, 2021 | Doyle Rice

Much of the western U.S. continues to endure a long-term drought, one that threatens the region's water supplies and agriculture and could worsen wildfires this year.

In fact, some scientists are calling the dryness in the West a "megadrought," defined as an intense drought that lasts for decades or longer.

Overall, about 90% of the West is now either abnormally dry or in a drought, which is among the highest percentages in the past 20 years, according to this week's U.S. Drought Monitor.

"By intensity, it would be about as bad as the U.S. Drought Monitor has shown in the last 20 years," climatologist Brian Fuchs of the National Drought Mitigation Center told USA TODAY.

Although some areas that saw significant snow this winter will be in better shape this year, "those areas that did not see any help during the winter will see issues and impacts to water supplies, agriculture as well as increased fire danger," Fuchs said. "We have time yet this winter to provide help, but the current situation is not providing much hope in widespread improvements by the end of spring."

The Southwest is the area of most concern because of the drought. "Coming off record-breaking or near-record-breaking heat and dryness in 2020, the winter has not provided much relief at all and we see the most widespread exceptional drought in this region," he said. Exceptional drought is the worst level of drought.

A bad year:'Megadrought' emerging in the western US might be worse than any in 1,200 years

"I would include Southern California, Arizona, New Mexico, Nevada, Utah and Colorado as the states with the most concerns going into the summer," Fuchs said.

In California, about 90% of the state is in a drought, a worrisome statistic that comes a year after its most destructive wildfire season on record.

"Much of California is enduring its second consecutive dry winter, with most areas below 75% of normal snowpack for this time of year," the Monitor said. "Many water agencies were discussing water conservation measures, with the North Marin Water District considering both voluntary and mandatory water conservation orders."

Moderate drought was expanded over areas of Southern California. where drought is developing again after a fairly dry winter.

"As California closes out the fifth consecutive dry month of our water year, absent a series of strong storms in March or April we are going to end with a critically dry year on the heels of last

year’s dry conditions,” Karla Nemeth, director of California's Department of Water Resources, said in a statement.

Sean de Guzman, the department’s chief of snow surveys and water supply forecasting, said California "has experienced a series of storms over the last couple of weeks that brought a significant amount of rain and snow; however, these storms were not nearly enough to make up a deficit that we have accumulated over last few months.”

In a study published last year, scientists said a “megadrought” appears to be emerging in the western U.S., one that's being worsened by human-caused climate change. In fact, the nearly-20-year drought is almost as bad or worse than any in the past 1,200 years, scientists say.

"By definition, we are approaching what is defined as a megadrought, where conditions have been that way for at least two decades," Fuchs said.

Historically, megadroughts once plagued the Desert Southwest. Thanks in part to global warming, an especially fierce one appears to be coming back.

# # #

California's wet season nears an end with big concerns about drought
San Francisco Chronicle | March 2, 2021 | Kurtis Alexander

A depth gauge is partially exposed at Briones Reservoir in Orinda on Sunday. A mostly dry February has added to the likelihood of extended drought. Stephen Lam / The Chronicle

A disappointingly dry February is fanning fears of another severe drought in California, and cities and farms are bracing for problems. In many places, including parts of the Bay Area, water users are already being asked to cut back.

The state's monthly snow survey on Tuesday showed only 61%of average snowpack for this point in the year, the latest indication that water supplies are tightening. With the end of the stormy season approaching, forecasters don't expect much more buildup of snow, a key component of the statewide supply that provides up to a third of California's water.

The impact is registering. Growers in the Central Valley are having to make decisions about which crops to prioritize, and which to sacrifice, should the water situation not improve. Urban water agencies, meanwhile, are asking customers to think twice about long showers and outdoor watering. The calls for austerity will feel familiar to many Californians who less than five years ago faced mandatory water restrictions during the 2012-2016 drought.

"This spring we're going to have a robust conservation messaging program," said Valerie Pryor, general manager of the Zone 7 Water Agency, which supplies water to more than 260,000

people in Livermore, Pleasanton and Dublin. “We’re pretty confident that if we explain to them the need, they will voluntarily conserve.”

The Marin Municipal Water District and the city of Healdsburg are among suppliers that have already begun asking customers to curb their water use. Others are considering doing the same. Each of the thousands of water agencies across the state has its own portfolio of water sources and its own level of vulnerability.

A series of storms in late January offered hope that California’s winter, when the state gets most of its precipitation, wouldn’t be a bust. However, February saw a return to the dry weather experienced earlier in the season.

San Francisco measured just 1.7 inches of rain last month, 38% of average, while Los Angeles recorded no rainfall, according to the private Golden Gate Weather Services. More importantly, the northern Sierra’s 8-Station Index, which tracks rain in the region where California gets the bulk of its water, measured only 45% of average precipitation.

While March and April could still bring rain, the heart of the wet season is over. Much of the state is now poised to have a top-10 dry year. San Francisco’s rain season, according to Golden Gate Weather Services, currently stands as its seventh driest dating back to the Gold Rush.

On Tuesday, state water officials manually confirmed year-to-date snow levels in the Sierra Nevada.

The snowpack, often called a “frozen reservoir,” is vital to California because it melts after the storm season is over, providing additional flow into rivers and lakes. Snow levels, however, have been in decline in recent decades because of warmer temperatures that have come with climate change.

In the northernmost areas of the Sierra and southern Cascades, snowpack measured 63% of average while measuring 69% in the central Sierra and 45% in the southern Sierra.

“This is now a second dry year, and we always think about drought impacts increasing with duration,” said Jeanine Jones, interstate resources manager for the state Department of Water Resources, which conducts the snow survey. “The good news is that California has a robust system of water infrastructure, and that mitigates the effects of one or two water years for most water users.”

Still, the state’s biggest reservoirs aren’t in great shape. Lake Shasta, the largest, had 68% of the water it typically holds this time of year while Lake Oroville, the second-largest, had 55%.

The State Water Project, which moves reservoir water to cities and farms through aqueducts and canals, estimates that its customers will receive only 10% of their requested water this year. Agencies dependent on the project, including the East Bay’s Zone 7 and the Santa Clara Valley

Water District, will have to turn to groundwater or purchase supplies from others, in addition to conserving.

The Central Valley Project, a parallel waterworks run by the federal government with service tilted toward farmers, announced last week that many of its customers would get just 5% of their requested supply.

If that figure doesn't change, growers similarly will be tapping groundwater or reserves. If alternatives aren't available, they'll have to fallow fields and decrease production. Already, some farmers have left their land unplanted, betting that a turnaround wasn't in store after last year's dry weather. Generally, less profitable row crops such as tomatoes and onions are sacrificed first, but the lack of water could also mean cutting back on high-dollar items such as almonds and pistachios.

"You will see trees not irrigated. You will see trees pushed," said Ryan Jacobsen, CEO of the Fresno County Farm Bureau. "Some of those aren't immediate decisions but they'll come to fruition over the next couple of months."

The U.S. Drought Monitor, a federal index of nationwide drought conditions, estimates that 85% of California is in some state of drought. Thirty percent is in "extreme" or "exceptional" drought, the two most severe classifications.

"All the way around it's a dry year, and it's shaping up to be a difficult one," Jacobsen said. "At this point, we're just hoping that something might change."

# # #

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As another dry year looms in California, key steps will make a resilient water future
Merced Sun Star | March 1, 2021 | Reps. Jim Costa and John Garamendi

Part of the Sacramento-San Joaquin River Delta, the center of much of California's water disputes. SACRAMENTO BEE FILE

On issues ranging from climate policy to immigration and health care, the past four years have been full of discord between California and Washington, D.C. Unfortunately, water users throughout California have not escaped the conflict, including in the Central Valley, where our communities have suffered as a result. Now, with drought conditions returning and the impacts of climate change intensifying, it is time to advance a solution for statewide water policy that will transition us from an era of conflict to one of collaboration.

California's complex water system brings water to approximately 35 million Californians, 5.7 million acres of the most productive agricultural land in the world, and iconic ecosystems. Unfortunately, conflicts that arose during the previous administration stymied the ability of California's water managers to work together to achieve shared goals in a sustainable way. The rift between the federal and state governments also hampered efforts to update California's water quality control plan. If California is to achieve its water reliability goals under the Sustainable Groundwater Management Act, meet the future water needs for a growing state, and combat the effects of climate change, we must move on from this harmful stalemate.

Now, with a new federal administration in place, state and federal policymakers must come together to complete negotiations, end the cycle of policy-making by litigation, and enact voluntary agreements that are rooted in data, the best-available science, and a shared desire to actually get something done for all Californians. If completed, they will result in a more

collaborative and holistic approach to improving the ecological health of the Sacramento and San Joaquin rivers and the Delta. The proposed voluntary agreements also better serve the wildlife, families, communities and businesses that rely on California's vast water management system.

Voluntary agreements — an effort begun in 2018 — will establish a common framework among state and federal agencies, public water agencies, and nongovernmental organizations to improve California's ecosystems by implementing fish and wildlife habitat restoration projects, combined with additional flows for threatened fish populations, while preserving the vitality of California's economy. This balanced approach creates stability that benefits not only the environment, but also the communities that depend on water. Voluntary agreements would be a generational shift that includes new governance structures to more effectively meet California's environmental and economic goals — and it's exactly the kind of solution the Central Valley needs now more than ever.

At a time when California is facing yet another dry winter, weather extremes due to climate change, and the prospect of water scarcity extending across the state, we need all parties working together to ensure the health and well-being of our communities. This can begin with leaders in Sacramento and Washington completing negotiations and to start implementing the agreements.

The Central Valley has lived through many droughts before. Tragically, this risks becoming the new normal due to climate change. We know droughts and water fights bring not only fallowed fields, but dry drinking water taps, thousands of lost jobs, and long lines at food banks. We cannot afford to fall into what Gov. Newsom previously referred to as the "old binaries, like farmers versus environmentalists." We must solve this problem now, and we have to do it together.

The Central Valley can't afford to wait, and Californians deserve nothing less.

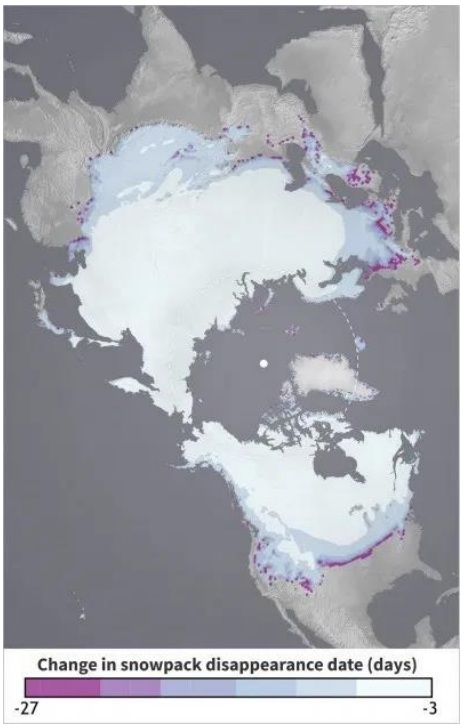
New Study Identifies Mountain Snowpack Most "At-Risk" from Climate Change
YubaNet | March 1, 2021 | Scripps Institution of Oceanograpy

March 1, 2021 – As the planet warms, scientists expect that mountain snowpack should melt progressively earlier in the year. However, observations in the U.S. show that as temperatures have risen, snowpack melt is relatively unaffected in some regions while others can experience snowpack melt a month earlier in the year.

This discrepancy in the timing of snowpack disappearance—the date in the spring when all the winter snow has melted—is the focus of new research by scientists at Scripps Institution of Oceanography at the University of California San Diego.

In a new study published March 1 in the journal Nature Climate Change, Scripps Oceanography climate scientists Amato Evan and Ian Eisenman identify regional variations in snowpack melt as temperatures increase, and they present a theory that explains which mountain snowpacks worldwide are most "at-risk" from climate change. The study was funded by NOAA's Climate Program Office.

Looking at nearly four decades of observations in the Western U.S., the researchers found that as temperatures rise, the timing of snowpack disappearance is changing most rapidly in coastal regions and the south, with smaller changes in the northern interior of the country. This means that snowpack in the Sierra Nevada, the Cascades, and the mountains of southern Arizona is much more vulnerable to rising temperatures than snowpack found in places like the Rockies or the mountains of Utah.



This map shows the simulated change in snowpack disappearance date—the number of days earlier in the spring when all the winter snow melts—under one degree of warming, based on an idealized physical model. Darker shades of gray and pink show regions where the snowpack melt date is changing more rapidly and disappearing earlier.

Credit: NOAA Climate.gov based on data from Evan and Eisenman, 2021.

The scientists used these historical observations to create a new model for understanding why the timing of snowpack disappearance differs widely across mountain regions. They theorize that changes in the amount of time that snow can accumulate and the amount of time the surface is covered with snow during the year are the critical reasons why some regions are more vulnerable to snowpack melt than others.

"Global warming isn't affecting everywhere the same. As you get closer to the ocean or further south in the U.S., the snowpack is more vulnerable, or more at-risk, due to increasing temperature, whereas in the interior of the continent, the snowpack seems much more impervious, or resilient to rising temperatures," said Evan, lead author of the study. "Our theory tells us why that's happening, and it's basically showing

that spring is coming a lot earlier in the year if you're in Oregon, California, Washington, and down south, but not if you're in Colorado or Utah."

Applying this theory globally, the researchers found that increasing temperatures would affect the timing of snowpack melt most prominently in the Arctic, the Alps of Europe, and the southern region of South America, with much smaller changes in the northern interiors of Europe and Asia, including the central region of Russia.

To devise the model that led to these findings, Evan and Eisenman analyzed daily snowpack measurements from nearly 400 sites across the Western U.S managed by the Natural Resources Conservation Service Snowpack Telemetry (SNOTEL) network. They looked at SNOTEL data each year from 1982 to 2018 and focused on changes in the date of snowpack disappearance in the spring. They also examined data from the North American Regional Reanalysis (NARR) showing the daily mean surface air temperature and precipitation over the same years for each of these stations.

Using an approach based on physics and mathematics, the model simulates the timing of snowpack accumulation and snowpack melting as a function of temperature. The scientists could then use the model to solve for the key factor that was causing the differences in snowpack warming: time. Specifically, they looked at the amount of time snow can accumulate and the amount of time the surface is covered with snow.

"I was excited by the simplicity of the explanation that we ultimately arrived at," said Eisenman. "Our theoretical model provides a mechanism to explain why the observed snowmelt dates change so much more at some locations than at others, and it also predicts how snowmelt dates will change in the future under further warming."

The model shows that regions with very large swings in temperature between the winter and summer are less susceptible to warming than those where the change in temperature from winter to summer is smaller. The model also shows that regions where the annual mean temperature is closest to 0˚C are less susceptible to early melt. The most susceptible regions are ones where the differences between wintertime and summertime temperatures are small, and where the average temperature is either far above, or even far below 0˚C.

For example, in an interior mountain region of the U.S. like the Colorado Rockies, where the temperature dips below 0°C for about half the year, an increase of 1°C can lead to a quicker melt by a couple of days—not a huge difference.

However, in a coastal region like the Pacific Northwest, the influence of the ocean and thermal regulation helps keep the winter temperatures a bit warmer, meaning there are fewer days below 0°C in which snow can accumulate. The researchers hypothesize that in the region's Cascade Mountains, a 1°C increase in temperature could result in the snow melting about a month earlier in the season—a dramatic difference.

One of the most "at-risk" regions is the Arctic, where snow accumulates for nine months each year and takes about three months to melt. The model suggests that 1°C warming there would result in a faster melt by about a week—a significant period of time for one of the fastest warming places on Earth.

This study builds upon previous work done by Scripps scientists since the mid-1990s to map out changes in snowmelt timing and snowpacks across the Western U.S. The authors said that a “shrinking” winter—one that is shorter, warmer, and with less overall precipitation—has adverse societal effects because it contributes to a longer fire season. This could have devastating impacts on already fire-prone regions. In California, faster snowpack melt rates have already made forest management more difficult and provided prime conditions for invasive species like the bark beetle to thrive.

# # #

Funding for this work was provided by NOAA/CPO grant NA17OAR4310163 to the University of California.

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Distribution of Landfalling Atmospheric Rivers over the U.S. West Coast During Water Year 2021: Quarter Year Summary

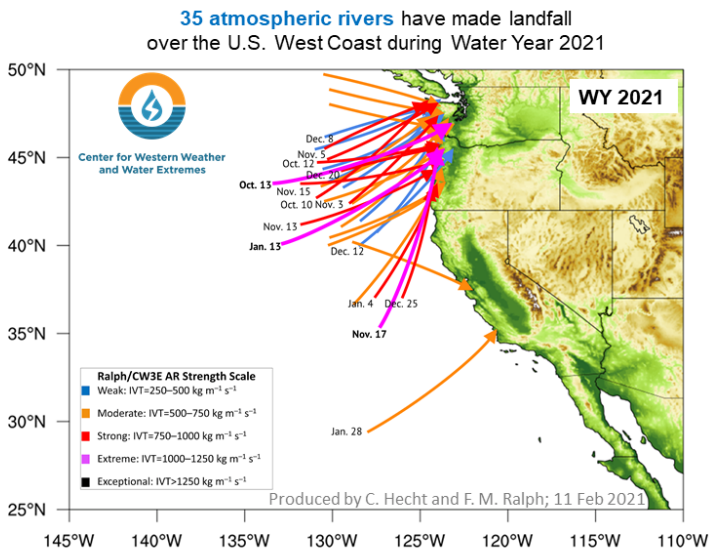
Center for Western Weather and Water Extremes | February 11, 2021

For a pdf of this information click here.

Water Year 2021 Landfalling Atmospheric Rivers: Oct-Feb Summary

AR Strength	AR Count
Weak	8
Moderate	13
Strong	11
Extreme	3
Exceptional	0

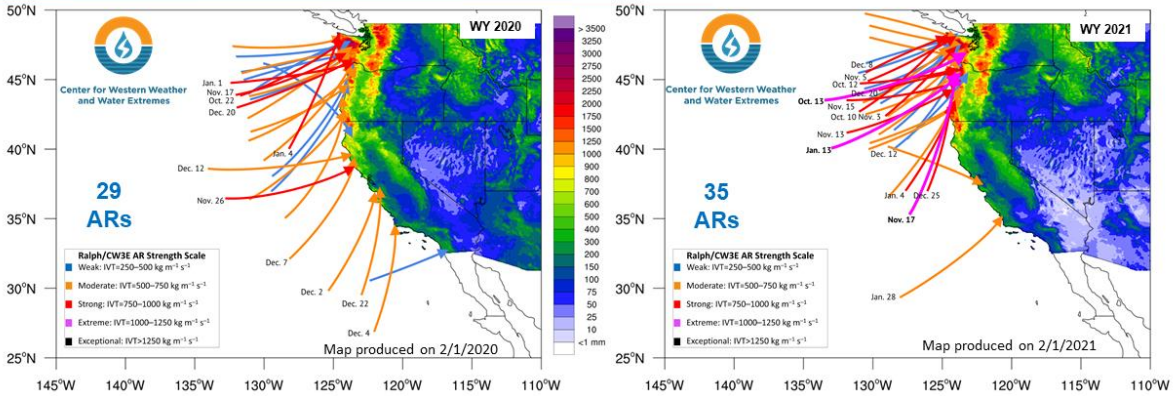
Regions Impacted by Each AR	
State/Region	AR Conditions
Washington	33
Oregon	34
Northern CA	20
Central CA	9
Southern CA	14



CW3E Center for Western Weather and Water Extremes

*Arrows are placed on the map where each AR was strongest over the coast

Water Year 2021 Compared to Water Year 2020

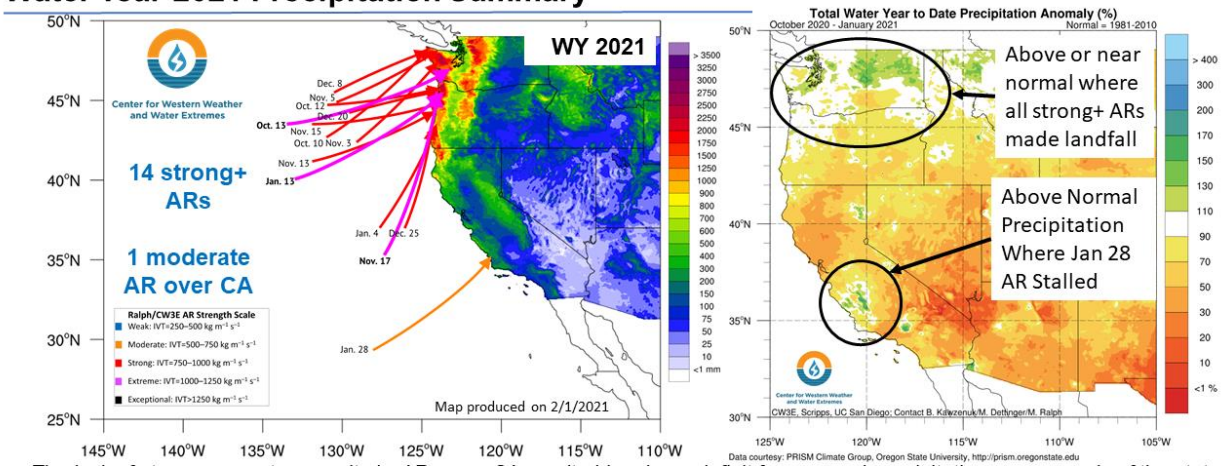


- The 4 months of Water Year 2021 experienced a total of **35 landfalling ARs** over the U.S. West Coast, 6 more than the first 4 months of Water Year 2020 .
- Water Year 2021 also experienced more than twice as many strong or greater ARs (14) compared to Water Year 2020 (6).
- While Water Year 2021 saw more ARs in its first 4 months compared to Water Year 2020, a large majority of those ARs were strongest over the Pacific Northwest (OR and WA).
- The average landfall latitude thus far in Water Year 2021 was 45.9°N compared to 43.9°N during the first half of Water Year 2020
- The lack of landfalling ARs over Southern CA and Baja California has resulted in much drier conditions over the southwestern U.S. compared to WY 2020

CW3E Center for Western Weather and Water Extremes

*Arrows are placed on the map where each AR was strongest over the coast

Water Year 2021 Precipitation Summary



- The lack of strong or greater magnitude ARs over CA resulted in a large deficit from normal precipitation across much of the state.
- The first impactful AR to make landfall over CA was strongest over Central CA on January 28th and brought moderate AR conditions to a large stretch of the CA coast.
- The AR also stalled over Central CA from north of Point Conception, which is one of the few locations in Ca that has received above normal precipitation

CW3E Center for Western Weather and Water Extremes

*Arrows are placed on the map where each AR was strongest over the coast

Highlights of January 28th AR over CA

Storm-Total Precipitation

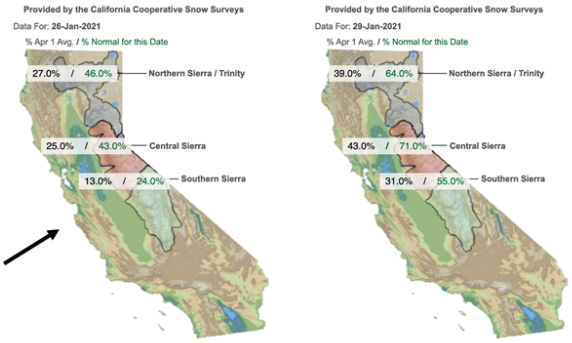
Station	3-day Precip (in)	Normal Annual Precip (in)	% of Normal Annual Precip)
Big Sur	13.38	44.88	29.8%
Santa Cruz	6.32	31.35	20.2%
Paso Robles	5.88	15.20	38.7%
King City	4.55	12.06	37.7%
Modesto	3.70	13.11	28.2%
Friant Government Camp	3.47	14.93	23.2%
Salinas	3.06	12.83	23.9%
Los Banos	2.96	9.95	29.7%
Merced	2.83	12.50	22.6%
Coalinga	2.53	8.25	30.7%

Sources: NOAA/NWS Hanford, https://www.weather.gov/hnx/
NOAA/NWS Los Angles, https://www.weather.gov/lox/
NOAA/NWS Sacramento, https://www.weather.gov/sto/
NOAA/NWS San Francisco, https://www.weather.gov/mtr/

- The AR that was strongest over Central CA on January 28th highlights how one or two ARs can play a large role during the water year.
- Several locations throughout CA received 30-40% of its normal annual precipitation from this one AR.

- Low freezing levels allowed for this AR to also produce a large contribution to the Sierra Nevada Snowpack.
- Statewide snowpack increased from 42% of normal to 66% of normal for 29 January.
- Visit https://cw3e.ucsd.edu/cw3e-event-summary-26-29-january-2021/ for a full summary on the event*

Snowpack Monitoring



Source: California Department of Water Resources, https://www.wcc.nrcs.usda.gov/

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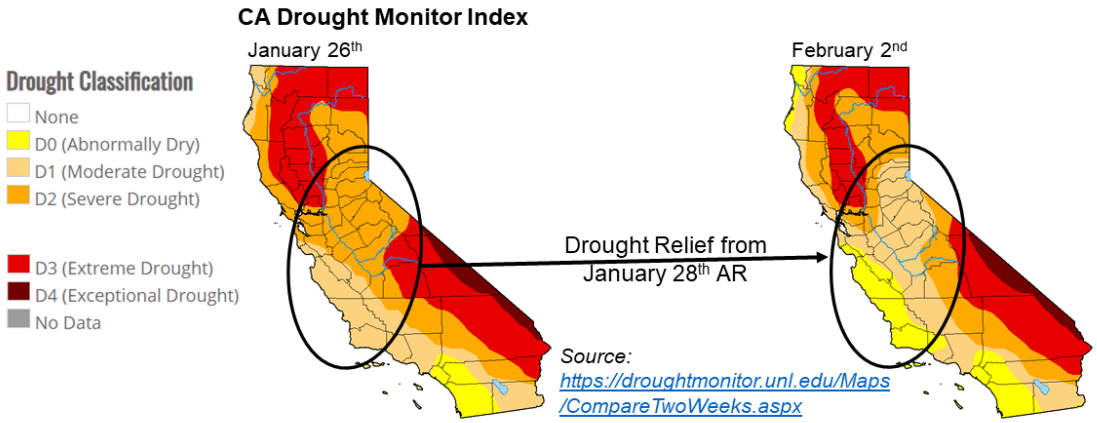
*Post-event summary by C. Castellano

Highlights of January 28th AR over CA



- The January 28th AR also helped to mitigate drought conditions in California, especially where the AR stalled over the Central Coast.
- The Central Coast of CA went from Moderate Drought on January 26th to Abnormally dry on February 2nd.
- Locations where the AR penetrated inland over the Central Valley and Sierra Nevada went from Severe Drought to Moderate Drought.

CW3E Center for Western Weather and Water Extremes

Highlights of January 28th AR over CA

- Intense rainfall also caused debris flows within the River Fire burn scar near Salinas, CA
- The collapse of the hillside above River Road resulted in an extensive mudflow that damaged at least 20 homes

- While only a few storms can help mitigate drought and contribute to California's water supply, each storm can also create hydrologic impacts, highlighting how ARs can be both beneficial and hazardous.
- A narrow cold frontal rainband on the periphery of the AR produced high-intensity short duration precipitation that led to debris flows over burn scars as well as other hydrologic impacts.
- Several mudslides were observed over Central and Southern CA, while a landslide closed Highway 1 near Big Sur.
- Visit https://cw3e.ucsd.edu/cw3e-event-summary-26-29-january-2021/ for a full summary on the event*

CW3E Center for Western Weather and Water Extremes

*Post-event summary by C. Castellano

Link to a post-event summary of the 26 to 29 January 2021 AR here

Analysis by **Chad Hecht**, Jason Cordeira, Julie Kalansky, & **F. Martin Ralph**. This analysis is considered experimental.

For questions regarding the data or methodology please contact **Chad Hecht**

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Crowfoot calls for patience with voluntary agreements
AgriPulse | March 8, 2021 | Brad Hooker

Natural Resources Secretary Wade Crowfoot said the Delta flows issue has been decades in the making and “it's going to take some time to figure this out,” with the administration having worked just two years on it so far.

Crowfoot was speaking at the annual meeting of the Northern California Water Association last week. His comments followed months of criticism from environmental groups that negotiations over voluntary agreements have delayed critical state action and not presented any tangible solutions.

Water agencies wanted to know when the Newsom administration plans to return to the negotiating table to reach a compromise between the framework plan the administration presented early last year and an earlier proposal from water contractors.

“The time is generally now to focus in on trying to get this done and turned into a proposal for consideration [by the State Water Board],” said Crowfoot. “This spring we should get back around the table.”

He noted that the water board is required by state and federal laws to move forward on the next phase for a Bay-Delta Plan, regardless of voluntary agreements.

CalEPA Deputy Secretary Kristin Peer, who serves as a special counsel for water policy, added that “the time is now” for rounding out the discussions and getting a package together. Peer urged stakeholders to “stay tuned” for public notices and be prepared for “a lot of process before anything is completed.”

# # #

MET Bay-Delta Committee: Update on the Voluntary Agreements, Delta Conveyance Project
Maven Meetings | March 2, 2021

At the February meeting of Metropolitan's Bay-Delta Committee, committee members were updated on the voluntary agreement process for the Bay-Delta and the Delta Conveyance Project.

UPDATE ON THE VOLUNTARY AGREEMENTS

Steve Arakawa, Bay-Delta Initiatives Manager, reviewed the voluntary agreements with the Committee members. In his presentation, he discussed what the Bay-Delta Water Quality Control Plan is, the State Water Board's decision process, the status of the review of the Bay-Delta Plan, and the voluntary agreement approach, and how it compares to the State Water board's staff recommendations.

The Delta watershed is quite expansive. It extends north up the Sacramento River to Shasta Dam and includes the Feather, Yuba, and American Rivers tributaries; the watershed extends south to include the San Joaquin River basin. The Sacramento River and the San Joaquin River meet in the Delta, where they flow out to the San Francisco Bay.

"This whole watershed meets the needs of the majority of people in the state of California," said Mr. Arakawa. "It's key because addressing the Delta needs really means addressing the system needs. and what I'm going to talk about today is how all of the different pieces fit together."

THE BAY-DELTA WATER QUALITY CONTROL PLAN

The Bay-Delta Water Quality Control Plan (or Bay-Delta Plan) is the regulatory tool implemented by the State Water Board, which regulates Delta's water quality, inflows and outflows, and export restrictions.

The Bay-Delta Plan sets the water quality requirements for agricultural, municipal, and industrial use and fish and wildlife; the Plan also limits how much water can be exported from the Delta. The triangles on the map show the various monitoring stations.

In terms of regulating flows and exports, there are requirements for spring outflow, export/inflow ratio, and the Delta Cross Channel gates, a gated structure built as part of the Central Valley Project to move freshwater into the Central Delta. He noted that the Delta Cross Channel Gates are operated to affect both water quality and fish migration.

The State Water Board is responsible for developing and updating the Bay-Delta Water Quality Control Plan per the federal Clean Water Act requirements and the state's Porter-Cologne Water Quality Control Act. The State Water Board sets the standards to protect the different beneficial uses, such as municipal and industrial use, agricultural uses, fish and wildlife, and others using a combination of water quality and flow-related requirements.

“In identifying and establishing these beneficial uses, the State Water board’s responsibility is to set protections to support those beneficial uses in a way that balances between them,” said Mr. Arakawa. “So the State Water Board’s responsibility is to look at what’s needed for each of those beneficial uses. Then determine how best to protect all of those uses in a balanced way, taking into account trade-offs of water costs and the value of the beneficial uses.”

UPDATING THE BAY-DELTA PLAN

The State Water Board is required by statutes to review the Bay-Delta Water Quality Control Plan periodically and to update it if necessary. There have been several plans over the years; the Plan was most recently updated in 2006. The Water Board began their most recent update effort in 2009.

There are two phases to the Bay-Delta Water Quality Control Plan effort: Phase One is the standards and requirements for the San Joaquin River and its tributaries, as well as southern Delta salinity standards; Phase Two are the requirements for the Sacramento River, Delta outflows, Cross Channel Gate operations, and other operational and salinity requirements in the Delta not included in Phase One.

Over the years, the Board has held series of workshops and meetings and developed several reports. In December of 2018, the Board completed an environmental document and adopted an action for the Phase One update. For Phase Two, the Board released a scientific basis report but has not taken any further action.

UNIMPAIRED FLOWS

When the State Water Board embarked on the multi-year process to review the Bay-Delta Water Quality Control Plan, they considered what flows were required to meet the needs for the beneficial uses in the Delta, focusing on an unimpaired flow approach.

Mr. Arakawa said that unimpaired flow is a way to use models to determine how much flow would be in the system if there were no dams and reservoirs, but everything else in place, or in other words, the same modified channelized system that reaches from the upper watershed down to the Delta and out to the San Francisco Bay. Unimpaired flow is an accounting of all of the water in the watershed, including precipitation and snowmelt.

“The key issue is how much of that water should be retained for Delta outflow, and how much of it can be diverted for other beneficial uses, such as water diversions in the Delta, water diversion for export, and other uses,” said Mr. Arakawa.

To protect fisheries, we need to consider the species’ needs during its different life stages, such as spawning, rearing, migration, and adulthood. What are the factors that are important to the life history of that fish? It’s much broader than just flows, Mr. Arakawa said. It’s access to habitat, the timing of flows, the availability of food, and other factors.

“We’re calling it the water landscape interface because the amount of water and the connection to the land and the habitat are really key to determining how to protect the lifecycle of the species,” he said.

TAKING AN INTEGRATED APPROACH

Mr. Arakawa pointed out that there are other key factors besides flow:

- High water temperatures: Higher ambient air temperatures will affect the ecosystem.
- Lack of Fish food: The system doesn’t resemble what it was historically, and the channelized system of the Delta does not produce much food for the fish.
- Lack of habitat: Levees built for flood control protect cities and farms move the water through, but block access to the floodplain habitat for fish
- Predation: There are many introduced species in the system; many of them are predators of native fish.

A voluntary approach would help integrate different management actions beyond just the flow, such as habitat restoration or actions to produce more food for fish. But at the same time, there’s a need to consider the right flow amounts, the timing and magnitude of the flow, and how that water makes its way through the Delta and out to the San Francisco Bay.

For example, upstream reservoir releases can help manage water temperatures to some extent; Mr. Arakawa acknowledged that those benefits would not likely reach the Delta, but it would protect the spawning and rearing habitats downstream of the reservoirs. However, reservoir releases to provide cold water for fisheries must be balanced against the need to hold water back to provide water for human uses and the environment later in the season.

The extensive floodplains that were part of the Delta pre-development have been isolated from the system by levees, although some floodplains are still connected in some ways. With the modern Delta being a highly managed system with levees for flood control, there is more of a separation between the floodplains and the river system, and that does affect the food web. There are also municipal, industrial, and agricultural discharges which likely affect the food web as well.

Habitat has been dramatically altered, with much of the habitat drained and reclaimed for agricultural and other human uses, reducing habitat by 90-95%. There are fewer channels in the Delta than there were before development; those that remain are straighter and more connected, which is significantly different than a natural estuarine system.

Species such as striped bass, largemouth bass, and other types of fish have been brought in from other places and introduced into the system. Striped bass and largemouth bass are highly sought after by fishing interests, so fishermen are interested in fishing those species, but at the same time, those species also predators of native fish.

“It’s not likely that you could ever rewind the clock and eliminate those introduced species,” said Mr. Arakawa. “But the key to a comprehensive approach is, how do you manage the system to

try to reduce the area where these predators might congregate and therefore have more chance of reducing the population of the native species? What kind of structural and other types of modifications could occur to manage the predation issue? Some examples might be modifying structures in the water or lights from bridges and docks at night. Those are things to look at as far as how can we manage the effect of predation in the system."

Mr. Arakawa pointed out that Metropolitan staff have been highly focused on the science, the cause and effect relationships, and the significance of all the various factors over the last several years. Metropolitan has been collaborating with other State Water Contractors and the broader scientific community that includes the fishery agencies, the NGOs, and the environmental interests. Metropolitan staff has worked on numerous reports that contribute to the state of the science needed in this comprehensive watershed approach to meeting the needs in the Delta.

BENEFITS OF THE VOLUNTARY AGREEMENTS

"The watershed-wide approach is key because historically, the requirements in the Delta have mainly been met by the State Water Project and the Central Valley Project," Mr. Arakawa said. "The State Water Board has an obligation to set objectives that would be met by the watershed parties that are in the system, both in the Delta and upstream. And when doing so, you have many parties that are part of the solution and part of the regulatory framework. This type of approach could provide a more stable regulatory framework because it's more comprehensive and extensive, and it's also looking at non-flow actions in addition to flows."

The idea behind the voluntary agreement concept is that implementation of management actions can occur sooner by avoiding an extensive water right proceeding to adjust the water rights permits or going through a lengthy litigation process if the State Water Board decision is challenged, he said.

The voluntary agreement concept would have a significant science and habitat component and a decision-making process driven by the science to determine the most effective actions to take, whether it's habitat, water quality, or flow. There could be early actions that could be taken to help accelerate the benefits of the voluntary agreements.

With the watershed approach, there would be a governance approach to manage the science, the funding, the integrated decision making, and the projects. There would be an agreement for how that governance would work that would include funding for science and monitoring and a decision-making process that looks at outcomes and determines if projects and actions are successful or if adjustments are needed.

TIMELINE AND MOVING FORWARD

In 2020, the state presented the framework of a voluntary agreement to the State Water Board, but since then, not much has happened, Mr. Arakawa. "I think there's an interest by many parties to move forward on how that voluntary agreement approach could come to fruition because, in the end, the State Water Board is responsible for setting requirements. And many

interests feel that going this road might be more successful than just the alternatives that the State Water Board staff is presently considering."

Mr. Arakawa concluded by noting that Metropolitan staff will continue to keep the Committee and Board members updated as any progress occurs.

DISCUSSION HIGHLIGHTS

Director Russell Lefevre (Torrance) notes that last fall, General Manager Jeff Kightlinger had said the voluntary agreements were at 95%. In October, ACWA issued 'A roadmap to achieving the voluntary agreements,' which had as one of its recommendations to resolve the litigation between the state, federal government, public water agencies, and NGOs regarding the incidental take permit and the biological opinions. "The way I understand that, we are one of the litigators, so we can't even actually negotiate with the feds. And we haven't even identified who the Commissioner of the Bureau of Reclamation is going to be. So when that happens, the priorities of the secretary may not be that high. The Bureau may have a high priority to resolve these litigations, but we don't know. So my question is, who are we negotiating with? And what are we trying? Are we trying to get the 98%? The litigation, I would think, implies that there's no agreement among all the people, so where are we actually?"

"We have not frankly moved much since we got very close to what we thought was a complete package and proposal amongst all the members of the watershed," said General Manager Jeff Kightlinger. "You're correct in identifying that the major hurdle and that halted the process for moving forward is the litigation that resulted from having a differing biological opinion and incidental take permit. All that is still true. The hope and thinking is that perhaps there will be discussions between the Biden administration when they get settled in and the Newsom administration that will allow us to continue to move forward and paved the way for doing that."

"Conversations are still continuing amongst the contractors and the state in terms of meeting their goals of what the state laid out in terms of goals of what a voluntary agreement should look like," Mr. Kightlinger continued. "The contractors and the water agencies are still looking at how to get to that complete package that would meet all the state goals, so getting to that 98/99% level. And then, when there is the ability to meet and work with the Biden administration, our thinking is that we want to be as prepared as possible and be ready, should that opportunity arise. It may not, but that we want to be prepared in case."

Director Gail Goldberg (San Diego) noted that the title of the agenda item indicated we would hear about the activity around the voluntary agreement, but it appears there's not a lot. Who is at the table for the negotiations? Are there any NGOs at the table at this point?

"I don't even know that I would call them necessarily negotiations at this point in time," said Mr. Kightlinger. "We have heard from the state with what they're looking for in voluntary agreements and what they think is desirable in terms of flows. The water contractors, which includes the Central Valley Project, the State Water Project, north of Delta, and south of Delta – so a broad

group of people on all the tributaries, they have been looking at the state goals and discussing amongst themselves what they think is achievable to try and put together a broad, comprehensive package and deliver that to the state. And so it's really been a water agency discussion to try and meet the state's goals. I wouldn't say characterize it as a formal negotiation with the state at this point. We have had some conversations where we kept the state updated as to our progress. But our hope is that we will be in a position in the relatively near future to start bringing forward a comprehensive proposal from the water users in that make up the watershed."

Will that be the point in which NGOs are engaged in the discussion? asked Director Goldberg.

"Probably, although we have had a number of conversations with NGOs just the back and forth as to what we're trying to achieve and what we're doing," said Mr. Kightlinger. "We have been discussing with them all along, and it may very well work out that there will be a joint proposal that is put forward by a number of entities as a voluntary agreement, or it may just be what the water contractors present to the State Board as to what we think makes sense and what they should be analyzing as part of the water quality control plan update."

How important are the NGOs to this discussion? asked Director Goldberg.

"There will likely be litigation on any outcome, but it is also a political process," said Mr. Kightlinger. "And so we would like to have a lot of broad-based support from the NGO community, from the water community, from the state, and possibly the federal administration. We would like to see as broad support as possible for the voluntary agreement once that eventually gets finalized."

Do you have any best guess as to when we might have real progress? asked Chair Linda Ackerman (Orange County).

"We're reaching a point where we're going to have to start to make some progress on this," said Mr. Kightlinger. "We think one of the selling points of a voluntary agreement is early implementation. That would be the water contractors around the state actually starting to implement what the voluntary agreement proposal is. If we felt the state and federal administrations' liked the proposal, we could start implementing it this year, collecting money for science, money for habitat acquisition, releasing water – all these things could happen immediately. Absent that, you go into a state board process that will take two years, and then there's going to be litigation after that. It's going to take a long time before you see anything on the ground."

"If we don't get moving by the April-May timeframe, we've pretty much lost 2021. And so now we're looking at 2022. Our thinking is that if we're going to actually try and move something forward, it has to be in the next couple of months. Otherwise, we lose another year and won't

make any progress. So that's why we're really hopeful that the Biden Administration and the Newsom administrations can start pushing something in the next couple of months."

Director Jerry Butkiewicz (San Diego) asks about the lawsuits.

"Steve Arakawa talked about the Phase One process and how the State Water Board issued a ruling on that," said Mr. Kightlinger. "There are about 20 lawsuits, I believe, that have been filed against the State Water Board. Then there were biological opinions issued by the federal government regarding State Water Project and Central Valley Project operations that were challenged by California and a number of NGO groups. Eventually, there was an incidental take permit issued by the state, which was challenged by State Water Contractors and NGOs. So there's quite a bit of litigation. The progress has been very slow due to the courts being very slow responding to litigation right now during COVID."

Director Butkiewicz says it sounds like Mr. Kightlinger is hopeful at the administration might be able to negotiate with the state and resolve some of these issues.

"I think so," said Mr. Kightlinger. "Last spring, the state and federal administrations basically stopped trying realistically to work on this issue pending the outcome of the election. And now that we have a new administration in place and things have settled down, I am hopeful that they can get back to the table and we can make some progress. So yes. Primarily, the conversations have been amongst the State Water Project and Central Valley Project contractors as well as the various water agencies and contractors on the tributaries. With the state of California, it's been at the secretary level, Secretary of Natural Resources, Secretary of Cal EPA, and then, and then the head of Department of Water Resources and Department of Fish and Wildlife."

UPDATE ON THE DELTA CONVEYANCE PROJECT

Next, Bay-Delta Initiative Policy Manager Nina Hawk provided an update on the Delta Conveyance Project. In her update, she discussed the new governance structure at the Delta Conveyance Design and Construction Authority, an update on the Bethany Alternative, and an update on the Stakeholder Engagement Committee.

One of the most notable changes that occurred as part of voting to move forward with the project was an amendment to the Joint Powers Authority of the Delta Conveyance Design and Construction Authority (or DCA). The new governing structure now has a seven-member board, which accounts for better representation of all the project's participating agencies.

The new board members met for the first time on February 3 for orientation. DCA staff went over several aspects of the authority, including the powers, requirements, and administration. DCA staff provided an overview of the Joint Powers Agreement, which is the formation agreement; they also went over the Joint Exercise of Power Agreement, which defines the contractual relationship between DWR and the DCA, and essentially allows the DCA to do the

design and construction on behalf of DWR for the purposes of constructing the Delta Conveyance Project.

The key functions of the DCA are to provide engineering services for the planning phase, host a stakeholder engagement process to inform design work and perform administrative functions to support the Delta Conveyance Design and Construction Authority.

Along with the governance structure, the voting structure has also changed. Previously, it was one director, one vote with motions passing by a majority. With the new board structure, there are reconsideration provisions for certain items related to financial matters and contract sizes. A board member can call for a reconsideration, which will then go to a weighted vote based on an adjusted proportionate share based on the participation in the funding agreement.

POTENTIAL TUNNEL ALIGNMENTS

DCA staff also went over the three tunnel alignments under consideration: the Central Alignment, the Eastern Alignment, and the Bethany Alternative.

There are two intakes in the northern part of the Delta that divert water from the Sacramento River into the conveyance facility and system. These are intakes three and five, which were part of the California WaterFix project and are still being contemplated as part of this project. From there, the tunnel would go to the Twin Cities launch site, which is the point at which point the tunnel alignment would take either the central or the eastern alignment.

On both the Central and the East alignments, there are three different launch shaft sites that are important for the construction. Various sites are utilized for maintenance purposes, construction and operation. From there, the two tunnel alignments converge in the southern complex, which is composed of both a launch shaft location and the southern forebay. Water would be moved to this location, brought into the south Delta pumping facilities, and put into the California Aqueduct.

The Bethany Alternative has the tunnel connecting into the Bethany Reservoir rather than the southern Delta. This would require putting pumps into the Bethany Reservoir to put the water into the California Aqueduct. The Bethany Alternative would eliminate the need for the southern forebay, potentially reducing the project's cost and reducing or avoiding potential significant impacts associated with the project. Ms. Hawk also noted that the Bethany alternative could continue to function in the event that the Banks Pumping Plant cannot, so it allows for operational flexibility as well. Staff will continue to keep the Committee updated on the project.

STAKEHOLDER ENGAGEMENT COMMITTEE

The Stakeholder Engagement Committee has 22 members; twenty official committee members, two ex officio members, and one alternate committee member. The Committee was created mainly to provide technical and engineering feedback from the in-Delta interests on the project's features. The committee members represent different geographic areas of the Delta, as well as

environmental justice representatives, North Delta and South Delta businesses, tribal governments, and in-Delta history and heritage.

The Stakeholder Engagement Committee provides feedback on the project footprint to see if there are opportunities to adjust designs and planning efforts to mitigate any impacts associated with the project. There are technical presentations and the opportunity for committee members to submit questions and ask for specific topics or information to be provided as it relates to the project. The Committee usually meets once a month for about 2.5 – 3 hours.

“The forum really allows for more of a free-flowing, facilitated conversation about the project with very important in-Delta interests that can provide first feet on the ground account and how they see the project,” said Ms. Hawk. “And there may be creative ways we can look at many of the different impacts that may be associated with the project.”

The stakeholder engagement committee has provided feedback in key areas, such as siting alternative traffic routes, logistical plans, tunnel material and management, and other special topics requested. The Committee has thoroughly reviewed the alignments and provided feedback as it’s being considered as part of the environmental impact report and planning process.

BAY-DELTA MANAGER’S REPORT
Delta Operations

The weather and the hydrology continue to be pretty dry, which is looking to be the trend for the season. Inflows to the Delta seem to be decreasing.

“This time of year, we’re usually looking at the effects of storms and how that creates turbidity and whether that has any effects on operations of the water projects and the exports,” said Mr. Arakawa. “But we haven’t had that situation that has stirred up that kind of turbidity that would result in Old and Middle River restrictions or anything like that. The state board’s X2 requirement for fishery habitat is controlling. There are no real issues that have arisen in the recent weeks.”

Board report regarding public comment on the Delta Conveyance Project

Metropolitan staff has compiled a Summary of Public Comments received at the December 8, 2020 Board Meeting regarding Item 7-4 on the Delta Conveyance Project. The report is about nine pages long and is intended to be responsive to the Board’s request to provide summarized comments and responses from that public session in December.

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