

**BAY AREA WATER SUPPLY AND CONSERVATION AGENCY
BOARD OF DIRECTORS MEETING**

December 7, 2018

Correspondence and media coverage of interest between November 23, 2018 and December 6, 2018

Correspondence

Date: December 6, 2018
From: American Rivers, The Nature Conservancy, Trout Unlimited, Environmental Defense Fund
To: Gov. Edmund G. Brown
Subject: NGO Perspective on Phase 1 Voluntary Settlement Agreement Negotiations

Date: December 4, 2018
From: Bay Area Council, SF Chamber of Commerce, SAMCEDA
To: Gov. Edmund G. Brown and Governor-Elect Gavin Newsom
Subject: Bay Delta Water Quality Control Plan

Date: December 4, 2018
From: Utility Workers Union of America
To: Gov. Edmund G. Brown and Governor-Elect Gavin Newsom
Subject: Bay Delta Water Quality Control Plan

Date: December 4, 2018
From: Conservation Group
To: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission
Subject: Objections to the U.S. Fish and Wildlife Service's October 1, 2018 Supplemental Letter Rescinding and Replacing Previous Section 10(j) conditions of the Don Pedro Hydroelectric Project (P-2299) and the La Grange Hydroelectric Project (P-14581).

Media Coverage

Water Infrastructure:

Date: December 6, 2018
Source: Maven's Notebook
Article: NGOs send letter to Governor Brown on Phase 1 settlement agreements; SF, Delta residents protest at Senator Feinstein's San Francisco office

Date: December 6, 2018
Source: Gilroy Dispatch
Article: Dam project may be delayed until 2022

Date: December 5, 2018
Source: San Francisco Chronicle
Article: Jerry Brown's new water deal is not certain

Date: December 5, 2018
Source: AgAlert
Article: Canal project complements Sites Reservoir

Date: December 4, 2018
Source: Mercury News
Article: Editorial: Brown, Feinstein betrayal of the Delta is unacceptable

Water Infrastructure, cont'd.:

Date: December 4, 2018
Source: Western Farm Press
Article: USDA announces \$449 million for Sites Reservoir

Date: December 3, 2018
Source: E&E News
Article: Feinstein, McCarthy push rider to fund Calif. storage plans

Date: November 30, 2018
Source: The Fresno Bee
Article: Huge Delta water deal backed by Dianne Feinstein, Jerry Brown, Kevin McCarthy

Date: November 23, 2018
Source: The Press
Article: Delta Tunnels opponents score a victory

Water Supply Management:

Date: December 5, 2018
Source: Maven's Notebook
Article: ACWA Conference: Department of Water Resources Director Karla Nemeth on the Department's efforts to confront the challenges ahead

Date: December 5, 2018
Source: RecordNet
Article: Hatchery still drawing large salmon count

Date: December 3, 2018
Source: Santa Cruz Sentinel
Article: Turning on the taps

Date: December 2, 2018
Source: California Water News Daily
Article: DWR Announces Draft Decisions for Groundwater Basin Boundary Modifications

Water Supply Condition:

Date: December 6, 2018
Source: The Independent
Article: Initial State Water Project Allocation at 10 Percent

Date: December 6, 2018
Source: NBC News
Article: Series of Pacific storms raises hopes for a wet El Nino season

Date: December 5, 2018
Source: The Weather Channel
Article: One of California's Most Important Assets is Off to Great Start This Year



December 6, 2018

Governor Edmund G. Brown
c/o State Capitol, Suite 1173
Sacramento, CA 95814

Re: NGO Perspective on Phase 1 Voluntary Settlement Agreement Negotiations

Dear Governor Brown,

On behalf of American Rivers, Defenders of Wildlife, Environmental Defense Fund, The Nature Conservancy, and Trout Unlimited, we are writing to share our perspective on the voluntary settlement agreement negotiations related to Phase 1 of the Bay-Delta Water Quality Control Plan (Plan) update in advance of the State Water Resources Control Board's December 12, 2018 hearing.

Water users, public agencies, and our organizations have made significant efforts over the past two years to broker a voluntary settlement agreement, and we appreciate the efforts of your team. Some progress has been made; however, the settlement content shared with us to date is insufficient to meet legal obligations or protect fish and wildlife. Accordingly, we believe it is imperative that the Board approve the proposal for Phase 1 at its hearing on December 12th.

We have all invested substantial time and effort in this negotiation effort because we believe a voluntary agreement may be the best way to restore fish and wildlife populations in the Bay-Delta watershed. Improving conditions for native fish is of the utmost importance, as several species teeter on the brink of extinction. Additionally, we see events each month that show the effects of extreme weather, climate change and increasingly variable precipitation cycles that imperil broader wildlife habitat values, water quality and public safety goals that we all share. The best available scientific information supports implementation of both flow actions and habitat restoration. We have expressed a willingness to evaluate different combinations of flow and habitat provided they have a scientific basis and meet the Plan objectives. However,

negotiations have not made enough progress toward agreements that could gain our support or legally be accepted by the Board.

In addition, some of the discussions relate not only to Phase 1 and to Phase 2, but are also interconnected with negotiations for other decisions in which we have not been involved. It would be impossible for us to support a voluntary settlement agreement without understanding the trajectory of each of these related critical processes.

We remain hopeful that we can help develop a voluntary agreement, even if after December 12th, and we stand ready to continue engaging in conversations about the integration of flow and habitat actions, a science plan, adequate and sustainable funding, and other essential elements of an agreement for both Phase 1 and Phase 2 of the Plan update.

Thank you for considering our perspective.

Sincerely,



Steve Rotherth
American Rivers



Jay Ziegler
The Nature Conservancy



Rachel Zwillinger
Defenders of Wildlife



Maurice Hall
Environmental Defense Fund



Brian Johnson
Trout Unlimited

cc: Felicia Marcus
Karla Nemeth
Charlton Bonham
Peter Southworth



December 4, 2018

The Honorable Edmund G. Brown
Governor
State Capitol, Suite 1173
Sacramento, CA 95814

The Honorable Gavin Newsom
Governor-Elect
State Capitol, Suite 1114
Sacramento, CA 95814

RE: Bay Delta Water Quality Control Plan

Dear Governor Brown and Governor-Elect Newsom,

The San Francisco Bay Area’s \$748 billion economy is the 19th largest on earth, and a global icon for research and innovation. The Bay Area’s success has been California’s success: despite having only 17 percent of California’s residents, the Bay Area produces 36 percent of the state’s income tax revenues. However, continuing the Bay Area’s economic success is impossible without a safe, reliable, and affordable water supply.

Our organizations have grave concerns that the current Bay-Delta Plan will result in widespread water rationing and building moratoria across the San Francisco Public Utilities Commission service area, which includes over 2.7 million people across four Bay Area counties including Silicon Valley, and will severely undermine our region’s ability to build desperately needed housing. We therefore strongly support your leadership, announced in a letter dated November 6, 2018, to develop a negotiated settlement to provide more water for fish and the environment, and furthermore believe the Tuolumne River Management Plan provides the best blueprint for going forward. Your continued leadership, with the participation of regulators, water users, and environmental stakeholders, is critical to reaching a sustainable resolution for California’s economy and environment.

If you have any questions on this issue, please don’t hesitate to contact Adrian Covert, Vice President-Public Policy, Bay Area Council, at 415-519-9141 or at acovert@bayareacouncil.org.

Thank you for your leadership, and for considering our views.

Sincerely,

Jim Wunderman
President & CEO
Bay Area Council

Jim Lazarus
Senior Vice President
San Francisco Chamber of Commerce

Rosanne Faust
President & CEO
San Mateo County Economic Development Association

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Utility Workers Union of America

Affiliated with AFL-CIO

**California Water Utility Council
Representing Locals 160, 160C, 160D, 205, 283, 484**

December 4, 2018

The Honorable Edmund Brown & Gavin Newsom
c/o Diana Dooley, Chief of Staff
California State Capitol, Suite 1173
Sacramento, CA 95814

Dear Governor Brown and Governor-Elect Newsom:

On behalf of the California Water Utility Council (CWUC), which represents six locals of the Utility Workers of America, AFL-CIO, I would like to thank you for submitting a very powerful letter on November 6, 2018 to the State Water Resources Control Board (State Board) in support of a negotiated settlement on proposed amendments to the Bay Delta Water Quality Control Plan. We would also respectfully request your continued leadership on this critically important topic.

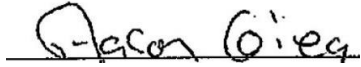
The CWUC represents approximately 700 operations, construction, maintenance, and clerical employees of California Water Service (Cal Water) who are responsible for ensuring the safe, reliable delivery of water to hundreds of thousands California households and businesses. Our members support efforts to protect the environment and critical habitats. At the same time, we are keenly interested in protecting the jobs of our members and not increasing the cost of water to Cal Water's customers, a group our members are also a part of.

We are concerned that the proposed changes to minimum flow standard for the Lower San Joaquin River and Tuolumne River could negatively impact our ability to continue providing customers with safe, reliable drinking water at an affordable price. In short, we and the businesses that create jobs need an adequate supply of water. We believe that your continued involvement is essential to reach a negotiated settlement of these issues.

Fortunately, there is a good alternative to the State Board's plan: The Tuolumne River Management Plan, developed and recommended by the San Francisco Public Utilities Commission and other water organizations. The Tuolumne River Management Plan, developed over many years with the assistance of experts, provides a pathway forward that addresses the many interests and concerns involved with this complex issue in the Bay Delta.

We respectfully urge your continued leadership for this alternative that will benefit people, fish, and the environment, and avoid major water shortages and endless litigation that reduce employment. We are ready to help in any way that you suggest would be helpful. Thank you for your strong leadership for this goal.

Respectfully,

Handwritten signature of Aaron Gieg in black ink, written over a horizontal line.

Aaron Gieg
CWUC President

Handwritten signature of Richard Wilson in black ink, written over a horizontal line.

Richard Wilson
CWUC Vice President
Local 160 C President

Cc: The Honorable Members of the State Water Resources Control Board

December 04, 2018

Writer's Direct Contact
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Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Re: Objections to the U.S. Fish and Wildlife Service's October 01, 2018 Supplemental Letter Rescinding and Replacing Previous Section 10(j) Conditions for the Don Pedro Hydroelectric Project (P-2299) and the La Grange Hydroelectric Project (P-14581).

Dear Secretary Bose,

Tuolumne River Trust, California Sportfishing Protection Alliance, Trout Unlimited, American Whitewater, Merced River Conservation Committee, Friends of the River, Golden West Women Flyfishers, Central Sierra Environmental Resource Center, American Rivers, and Tuolumne River Conservancy (collectively "Conservation Groups") write to inform the Federal Energy Regulatory Commission ("FERC") of our objections to the U.S. Fish and Wildlife Service's ("Service") decision to rescind and replace its Section 10(j) Conditions, which was communicated to FERC in the Service's October 01, 2018 letter ("Supplemental Letter"). The Conservation Groups two main objections are (1) that the Service's changes in position are insufficiently explained with respect to the scientific data and evidence presented in its original January 29 Response Letters, and (2) that the Service's changes in position were based on consideration of inappropriate factors.

The Service's unexplained position reversals are textbook examples of arbitrary and capricious decisions. The Supplemental Letter rescinding and replacing the original Section 10(j) Conditions is therefore an abuse of discretion, and should be disregarded. Agencies are not permitted to endorse inconsistent policies without an explanation sufficient to justify the change in position. *Organized Vill. of Kake v. United States Dep't of Agric.*, 795 F.3d 956, 966 (9th Cir. 2015) ("Unexplained inconsistency' between agency actions is 'a reason for holding an interpretation to be an arbitrary and capricious change.'" (quoting *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 981 (2005))). When an agency changes a prior policy that was based on factual findings, the change is "arbitrary and capricious if the agency ignores or countermands its earlier factual findings without reasoned explanation for doing so." *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 537 (2009). Any such change, to be proper, must provide "'good reasons' for the new policy, which . . .

Kimberly D. Bose, Secretary
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must include ‘a reasoned explanation . . . for disregarding prior facts and circumstances that underlay or were engendered by the prior policy.’” *Organized Vill. of Kake*, 795 F.3d at 966. As summarized in our letter to the Service (see attached), the Service has provided no such reasoned explanation for its policy changes. The policy changes are therefore arbitrary and capricious, and an abuse of the Service’s discretion.

Additionally, an agency rule is “arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider.” *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). The only rationale the Service provides for its change in position inappropriately considers factors the Service is not statutorily authorized to consider when designing Section 10(j) conditions. The Service states that the reason it changed its positions was that “the Service recognize[d] that the flow proposal included in the USDOJ Response Letter for Don Pedro includes proposed volumes of water as a license condition that are difficult for the License Applicants to manage in the context of their FERC license without significant effects to overall water supply and operation of the Projects.” Supplemental Letter, at 6.

But the Service has no authority to consider the purported difficulty of license applicants in complying with license conditions that are appropriately constructed to safeguard the fish and wildlife resources that the Fish and Wildlife Service is charged with protecting. The text of the Federal Power Act and the Fish and Wildlife Coordination Act, which guide the Service’s creation of Section 10(j) conditions, instructs the Service only to consider what conditions would provide for the protection, conservation, and enhancement of fish and wildlife resources. *See generally* 18 CFR 5.26(a); 18 CFR 5.29(h)(2); 16 U.S.C.S. § 662(a). By considering the purported compliance difficulty complained of by the license applicants when changing its Section 10(j) conditions, the Service has exceeded its statutory authority and abused its discretion. The decision to rescind and replace various Section 10(j) conditions communicated in the Supplemental Letter is therefore improper and invalid.

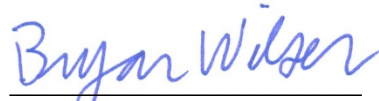
The Service’s decision to rescind and replace multiple Section 10(j) conditions is a clear abuse of discretion. FERC should therefore disregard the replacement conditions in the Supplemental Letter unless and until the Service provides a “neutral and rational” evidence-based justification, arising from the statutorily authorized objectives, for rescinding and replacing its original Section 10(j) conditions. *FCC*, 566 U.S. at 537.

Attached please find the Conservation Groups’ November 29 letter to the Service, which summarizes our position in further detail.

Kimberly D. Bose, Secretary
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Dated: December 04, 2018

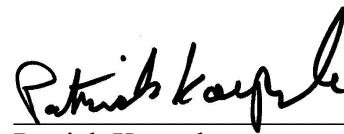
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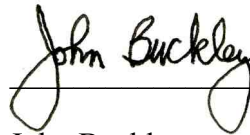


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Kimberly D. Bose, Secretary
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Merced River
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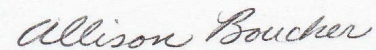
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EXHIBIT A

November 29, 2018

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Paul Souza
Director, Pacific Southwest Region
U.S. Fish and Wildlife Service
2800 Cottage Way, Room W2606
Sacramento, CA 95825

Re: October 01, 2018 Letter Rescinding and Replacing the Fish and Wildlife Service's Section 10(j) Conditions for the Don Pedro Hydroelectric Project (P-2299) and the La Grange Hydroelectric Project (P-14581).

Dear Mr. Souza,

Tuolumne River Trust, California Sportfishing Protection Alliance, Trout Unlimited, American Whitewater, Merced River Conservation Committee, Friends of the River, Golden West Women Flyfishers, Central Sierra Environmental Resources Center, American Rivers, and Tuolumne River Conservancy (collectively "Conservation Groups") write to object to the U.S. Fish and Wildlife Service's recent withdrawal of its Federal Power Act Section 10(j) recommended license terms and conditions for the Don Pedro and La Grange Hydroelectric Projects. The Conservation Groups are participants in the new license proceedings for the Don Pedro Hydroelectric Project, Project No. 2299. The Conservation Groups understand that the Fish and Wildlife Service ("Service") has been engaged in ongoing discussions with the Turlock Irrigation District and Modesto Irrigation District (collectively "License Applicants"), as well as with the City and County of San Francisco, regarding the license applications for the La Grange and Don Pedro hydroelectric projects filed with the Federal Energy Regulatory Commission ("FERC") on October 11, 2017. These discussions resulted in a letter from the Service to FERC on October 1, 2018 that rescinds many of the recommended terms and conditions filed by the Service on January 29, 2018 in response to FERC's issuance of the Ready for Environmental Analysis notices for the license applications.

The Conservation Groups strongly object to the Service's reversals of position and associated withdrawal and replacement of many of the original recommended conditions. The Conservation Groups' two main concerns are that (1) the Service's changes in position are insufficiently explained with respect to the scientific data and evidence that was presented in

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the original January 29 filing, and (2) that the Service's changes in position were based on consideration of inappropriate factors.

The Service's October 1 Letter is an Explicit Change in the Agency's Position For Which No Adequate Science-Based Rationale is Provided.

The Service's October 1 supplemental letter ("Supplemental Letter") to its January 29 Response Letters to FERC's REA notices "replaces in their entirety the Service's original Section 10(j) Condition Numbers 2, 3, 4 and 7 in the USDOJ Response Letter for Don Pedro and withdraws in their entirety the Service's original Section 10(j) Condition Numbers 2, 3, 4 and 7 in the USDOJ Response Letter for La Grange." Supplemental Letter, at 2.

The replacement conditions functionally abandon in their entirety the original salmonid conservation Section 10(j) conditions and grant the License Applicants full discretion to enact their original proposed conditions without modification, despite having previously rejected these conditions as insufficient for numerous reasons. The Conservation Groups understand that the change followed "meaningful discussion" with the Districts, *id.* at 2, but the Service still fails to articulate a sufficient rationale for abandoning its previous recommendations given that the previous data has not been shown to be inaccurate or inapposite. The Service simply states that its rationale for changing its recommendations is that "the Service recognizes that the flow proposal included in the USDOJ Response Letter for Don Pedro includes proposed volumes of water as a license condition that are difficult for the License Applicants to manage in the context of their FERC license without significant effects to overall water supply and operation of the Projects." *Id.* at 6. This explains why the License Applicants disliked the original recommendations, but provides no factual basis for the Service's change in policy.

The set of license conditions prescribing salmonid-specific conservation measures have been abandoned in their entirety without any evidence-based explanation. In the January 29 USDOJ Response Letters, the Service expressed "major concerns with the AFLA," noting that the "proposed measures perpetuate the conditions in the lower Tuolumne River that put salmonid populations at risk." Response Letters, at 37. But the measures originally rejected as inadequate and unfounded are now suddenly adopted as license conditions.

The Service originally articulated a clear need for license conditions that would restore a more natural flow regime and hydrograph to the Tuolumne River. The Service noted specifically that "[t]he minimum instream flows in the AFLA are not sufficient to support salmonid holding, spawning, and rearing in the lower Tuolumne River," adding that recent studies showed that "fall-run Chinook salmon (and likely other salmonids) face a high risk of extinction in the Tuolumne River due to inadequate instream flows." *Id.* at 70. The Service's previous position regarding the AFLA conditions was that they were wholly unacceptable

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and would have “no measurable benefit” on salmonid populations. *Id.* at 52; *see also id.* at 37 (“In place of the ecosystem function and salmonid benefit that would result from environmental flows, the AFLA focuses on experimental, unproven, or unsupported measures as ‘Resource Protection Measures.’”).

Additionally, the Service described the conditions a flow scenario would need to meet in order to achieve sufficient floodplain inundation to support salmonid species. The Service first “did an analysis to quantify the amount of floodplain inundation” associated with the proposed flow scenarios, and concluded that, although Condition 2 provided for increased flows, Condition 2 alone would not fully mitigate against “Project-related decreases in inundation. An additional median 47,464 cumulative acre-days are necessary to mitigate for Project related reductions in inundation.” *Id.* at 79. The Service also stated that an additional 520 acres of vegetation would need to be planted to provide for the proper inundation due to the lower flows resulting from the Project. *Id.* But now the Service has rescinded **both** Conditions 2 and 3 without any explanation as to how the new conditions will provide for the previously calculated inundation and vegetation requirements.

The Service also rejected the License Applicants’ proposed “Predator Control Program” as entirely insufficient to protect the resident salmonid populations. Indeed, the Service noted that the likely effect of the Predator Control Plan would be to *increase* the deleterious effects of predation on juvenile salmonid recruitment and survival. *Id.* at 49-50 (“the proposed Predator Control Program is likely to result in an enhanced predator field downstream of the proposed weir that depresses juvenile salmonid recruitment and survival.”). Specifically, the Service expressed concern that the predator removal policy for striped bass and the boulder placement component of the habitat improvement plan would increase predation on juvenile salmonids instead of reducing it. *Id.* at 50 (“we are concerned that the 6 to 12 inch size class of striped bass that are the heaviest predators on juvenile salmonids will be released when the large size-class of striped bass is removed from the River”); *id.* at 48 (“Boulders are likely to create more predator habitat, because they provide velocity shelter to predators without providing the structural diversity of riparian vegetation in instream LWM (crowns or roots of fallen trees) that juvenile salmonids are associated with.”). The Service concluded that the plan writ large “should not be expected to generate a positive population-level response in juvenile salmon survival or adult return rates.” *Id.* at 50.

The Service similarly repudiated the License Applicants’ Gravel Augmentation Plan; arguing that the License Applicants failed to understand the fundamentals of their own plan. *Id.* at 47 (“This measure conflates spawning gravel and course [sic] material . . . under a single definition of ‘course [sic] sediment.’” Furthermore, the mitigation scenario described was unsupported by any analysis that might justify its facial shortcomings. *Id.* (“There is no explanation as to why the proposed augmentation should only occur in the first five miles downstream of La Grange Dam instead of all areas where spawning could occur, only

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provides for gravel augmentation totaling 55,600 yd³ when the Project withholds 18,800 yd³ per year, or while [sic] the Districts only plan on augmenting during the first 10 years of the license instead of over the entire term of any issued license.”). On top of this, “[t]here is no provision . . . for what the remediation would be if this measure failed to mobilize gravel adequately.” *Id.* This is troubling, given that simple arithmetic shows that the mitigation measures are inadequate. The Service’s comments essentially suggest that the Districts’ proposed mitigation measures are doomed to failure with no backup plan.

The new conditions in the Supplemental Letter represent a total about-face with respect to the positions the Service previously assumed, both in terms of factual assertions and policy recommendations. The new “Spill Management Plan” replaces the flow requirements from the previous Condition 2, but the plan contains no flow requirements whatsoever. Supplemental Letter, at 10 (“The License Applicants will not be required to operate the Project in a manner that creates or retains a Spill, or prioritize the creation or maintenance of a Spill in making its discretionary decisions regarding the operation of the Project.”). The Service previously cited studies correlating the restricted flow levels predicted under the AFLA proposed conditions with a high risk of Chinook salmon extinction in the Tuolumne River, insufficient inundation area and duration to support salmonid populations, and a total lack of measurable benefit to salmonid populations writ large. The Service now reverses its position regarding the necessity for specified minimum yearly flows without providing any new data or evidence, or any other reason to believe that the aforementioned restricted flow volumes would not have the problematic consequences previously enumerated.

The Service displays similar disregard for its previous comments on the Predator Control Plan. The Service now asserts that predator management could have positive population impacts “if reductions in predation rates consistent with the AFLA modeled results can be achieved.” *Id.* at 6. However, the Service predicted in its original submission that the AFLA predator management plans could not be expected to achieve any positive results whatsoever. The Service admits in the Supplemental Letter that its previous recommendations were “based on studies from multiple river systems, including the Tuolumne River, successes achieved in other areas and on best available science.” *Id.* The replacement conditions are based on none of these; the Service does not give any science-based rationale for supporting the License Applicants’ predation management plan. Instead, the Service explains its reversal of position simply by noting that the Districts told the Service that the previous license conditions would be “difficult . . . to manage.” *Id.*

The Service professes intent to contribute to the refinement of the License Applicants’ proposed management plans, but it is nonsensical to refine a strategy that fundamentally does not work. The Service itself made this point when it originally rejected the License Applicants’ proposed adaptive management plan. It noted that “[a] plan with no recourse for failure and no measurable benefit” leaves no room for productive adjustments. Response

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Letters, at 52. The Service provides no explanation for its sudden and contrary belief that it can help the License Applicants refine the management strategies it originally declared doomed to failure.

A Change in Agency Policy Without Sufficient Explanation is Arbitrary and Capricious and an Abuse of Discretion.

The replacement Section 10(j) conditions the Service detailed on October 1 represent a series of position reversals with an utter lack of science-based explanations. This decision is deeply concerning and confusing. Moreover, this decision is a prime example of an arbitrary and capricious agency action, and as such is an abuse of discretion.

Agencies are not permitted to endorse inconsistent policies without an explanation sufficient to justify the change in position. *Organized Vill. of Kake v. United States Dep't of Agric.*, 795 F.3d 956, 966 (9th Cir. 2015) (“‘Unexplained inconsistency’ between agency actions is ‘a reason for holding an interpretation to be an arbitrary and capricious change.’”) (quoting *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 981 (2005)); see also *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 537 (2009) (emphasis added):

If an agency takes action not based on neutral and rational principles, the APA grants federal courts power to set aside the agency’s action as “arbitrary” or “capricious.” 5 U.S.C. § 706(2)(A); *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416, 91 S. Ct. 814, 28 L. Ed. 2d 136 (1971). For these reasons, agencies under the APA are subject to a “searching and careful” review by the courts. *Ibid.*

Where there is a policy change the record may be much more developed because the agency based its prior policy on factual findings. In that instance, ***an agency's decision to change course may be arbitrary and capricious if the agency ignores or countermands its earlier factual findings without reasoned explanation for doing so.*** An agency cannot simply disregard contrary or inconvenient factual determinations that it made in the past, any more than it can ignore inconvenient facts when it writes on a blank slate.

To comply with the Administrative Procedure Act, an agency’s policy change must “provide[] ‘good reasons’ for the new policy, which, if the ‘new policy rests upon factual findings that contradict those which underlay its prior policy,’ must include ‘a reasoned explanation . . . for disregarding facts and circumstances that underlay or were engendered by the prior policy.’” *Organized Vill. of Kake*, 795 F.3d at 966 (quoting *FCC*, 556 U.S. 502). This is as true for environmental findings as for any other agency action. *See id.* at 969

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(“Consistent with *Fox*, we have previously held that unexplained conflicting findings about the environmental impacts of a proposed agency action violate the APA.”).

Additionally, an agency rule is “arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider.” *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). The Federal Power Act directs FERC to “analyze all terms and conditions timely recommended by fish and wildlife agencies pursuant to the Fish and Wildlife Coordination Act **for the protection, mitigation of damages to, and enhancement of** fish and wildlife . . . affected by the development, operation, and management of the proposed project.” 18 CFR 5.26(a). The Federal Power Act further instructs that, for any license issued, the “fish and wildlife conditions shall be based on recommendations timely received from the fish and wildlife agencies pursuant to the Fish and Wildlife Conservation Act.” 18 CFR 5.29(h)(2).

Under the Fish and Wildlife Coordination Act, “whenever the waters of any stream or other body of water are proposed or authorized to be impounded . . . or the stream or other body of water otherwise controlled or modified for any purpose whatever . . . by any public or private agency under Federal permit or license, such department or agency first shall consult with the United States Fish and Wildlife Service . . . **with a view to the conservation of wildlife resources by preventing loss of and damage to such resources as well as providing for the development and improvement thereof** in connection with such water-resource development.” 16 U.S.C.S. § 662(a) (emphasis added). The Act also requires that the reports and recommendations of the Service be “**in furtherance of**” the purposes described above, and that the reports and recommendations be “based on surveys and investigations conducted by the [Service] . . . **for the purpose of determining the possible damage to wildlife resources and for the purpose of determining means and measures that should be adopted to prevent the loss of or damage to such wildlife resources, as well as to provide concurrently for the development and improvement of such resources.**” 16 U.S.C.S. § 662(b) (emphasis added).

In the Supplemental Letter, the Service reverses a series of previous decisions without providing an adequate rationale describing the data and evidence supporting the abandonment of its previous positions or the endorsement of the new policies it previously explicitly rejected. The Service must articulate a comprehensive “**neutral and rational**” explanation for its suite of policy changes. *FCC*, 556 U.S. at 537. This explanation must justify the decision without reference to the predicted compliance difficulties complained of by the License Applicants. The Service is not authorized to consider purported compliance hardships when deciding upon license conditions for hydroelectric facilities.

The Service’s excuse that the “development and implementation of actions” aimed at “long-term habitat restoration on the Tuolumne River” is so time-consuming that it “is not

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consistent with FERC timelines for license issuances” is of no avail. Supplemental Letter, at 10. The Federal Power Act explicitly contemplates license conditions that protect and enhance wildlife resources “affected by the *development, operation, and management* of the proposed project.” 18 CFR 5.26(a). It stretches credulity to suggest that Congress intended such an inconsistent statutory framework that the timeline provided for the recommendation of license conditions would be inadequate for the creation of conditions that would apply over the duration for which Congress explicitly directed that the conditions apply.

The Service has failed to articulate a neutral and rational explanation detailing how its decisions contribute to the proper objectives. The Service must either (1) produce an evidence-based rationale describing how its decision to rescind its previous conditions and recommend these new ones enhances the conservation, development, and improvement of wildlife resources, or (2) rescind its new recommended conditions in favor of the original conditions, or provide such an explanation.

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Dated: November 29, 2018

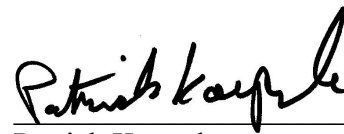
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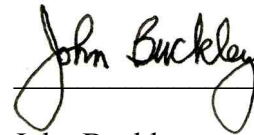


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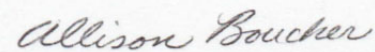
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NGOs send letter to Governor Brown on Phase 1 settlement agreements; SF, Delta residents protest at Senator Feinstein's San Francisco office

Maven's Notebook | December 6, 2018 Maven | Breaking News

"Settlement content shared with us to date is insufficient to meet legal obligations or protect fish and wildlife," the letter states

American Rivers, Defenders of Wildlife, Environmental Defense Fund, The Nature Conservancy, and Trout Unlimited have sent a letter to Governor Brown regarding the voluntary settlement agreement negotiations for Phase 1 of the Bay-Delta Water Quality Control Plan.

The letter notes the significant efforts over the past two years to negotiate a voluntary settlement agreement. "Some progress has been made; however, the settlement content shared with us to date is insufficient to meet legal obligations or protect fish and wildlife. Accordingly, we believe it is imperative that the Board approve the proposal for Phase 1 at its hearing on December 12th," the letter states.

"We have expressed a willingness to evaluate different combinations of flow and habitat provided they have a scientific basis and meet the Plan objectives. However, negotiations have not made enough progress toward agreements that could gain our support or legally be accepted by the Board."

SF Bay Delta Residents Protest Sen Feinstein's Water Deal



From Restore the Delta and Food and Water Watch:

Public interest groups, conservationists, fishermen, and SF Bay-Delta residents delivered a strong message at the San Francisco office of Senator Dianne Feinstein today, "Drop Your Support for the WIIN Act!"

The protesters came from across Northern California to protest Feinstein's proposed Water Infrastructure Improvement Act for the Nation (WIIN) deal with the Trump Administration and Republican leader Kevin McCarthy. The last-minute rider would be attached to the bill needed to prevent a government shutdown.

The Feinstein-McCarthy deal would extend a drought-era waiver of environmental protections for the SF Bay-Delta. When it was enacted, Feinstein promised the act would sunset after the

drought in 2021. The rider would extend those provisions for another seven years, even as native fish species are going extinct.

Opposition to the WIIN Act rider grows

“Here’s a news flash for Brown and Feinstein. The drought is over. The extension only serves to hand the federal government more power over California water politics. It’s the means for Brown and Feinstein to force their will on the state.” The Mercury News, editorial 12/4/18

California Senator Kamala Harris joined the chorus of opposition to the WIIN Act on Wednesday, 12/5/18. “We must invest in sustainable water projects that protect critical ecosystems while also supporting our important agricultural economies across the state,” said Senator Harris. “Extending the controversial and detrimental policies of the WIIN Act is not the way to do this.”

At the rally in San Francisco, speakers gave testimony about the harms this deal would cause.

“We are very disappointed that Senator Feinstein is pushing a water deal that grossly favors corporate agribusiness at the expense of our rivers and water future,” said Adam Scow, California director of Food & Water Watch. “California needs real water solutions that protect the health of our rivers and bay while allowing for responsible agricultural production. The recent rapid expansion of corporate agribusiness in the driest parts of California is placing enormous stress on our precious water supply and is unsustainable.”

“Today is a very difficult day. We would honestly prefer to be doing just about anything rather than protesting against California’s Senior Senator who just won re-election,” said Barbara Barrigan-Parrilla, executive director of Restore the Delta. “But protest we must because the WIIN Act is a betrayal of the San Francisco Bay-Delta estuary, its communities, fisheries, salmon, wildlife, responsible California water management, Northern California Indian Tribes, Delta environmental justice communities, the public trust, the public good, and our faith that in the long run that Senator Feinstein would do the right thing.

“This is the ultimate betrayal of California’s environment and people. We urge Senator Feinstein to stop the WIIN Act from advancing and return California water management to the rule of law — to the norms and customs of regular government processes — and to uphold all that she claims to value.”

###

Food & Water Watch champions healthy food and clean water for all. We stand up to corporations that put profits before people, and advocate for a democracy that improves people’s lives and protects our environment.

Restore the Delta fights for a Delta with waters that are fishable, swimmable, drinkable, and farmable, able to support the health of the estuary, San Francisco Bay, and the ocean beyond. Restore the Delta envisions the Sacramento-San Joaquin Delta as a place where a vibrant local economy, tourism, recreation, farming, wildlife, and fisheries thrive as our waterway commons.

Dam project may be delayed until 2022

Gilroy Dispatch | December 6, 2018 | Barry Holtzclaw

The rains have returned to the Santa Clara Valley, and with them renewed anxiety over the capacity and stability of the county's biggest body of water, the Anderson Reservoir.

The source of that anxiety isn't likely to go away until after as many as nine rainy seasons, as the Santa Clara Valley Water District now says that a five-year, \$550 million project to upgrade the earthquake safety of the Anderson dam may not begin until 2022 at the earliest, two years later than its official start date. The popular recreation lake will be drained for at least five years during the project.

New seismic data prompted the district, which owns the reservoir, to revise its plans for the "Anderson Seismic Retrofit" this fall. The project may take longer and cost more: The initial cost estimate was \$400 million. The new data will require a complete reconstruction of the nearly 70-year-old earthen dam, according to the district.

On Feb. 13, 2017, the Anderson Dam burst over the banks of Coyote Creek and gushed into a South San Jose neighborhood in one of the worst floods in San Jose's history. The devastating flood forced 14,000 people from their homes, leaving \$100 million in damage and lawsuits brought by more than 150 flood victims against the city, county and water district.

The dam reconstruction plan was first unveiled three months before catastrophic winter storms resulted in the February 2017 flood.

The revised project was unveiled at a public meeting in Morgan Hill in late October, and is currently in the design phase. The water district board will be considering revising the project start date early next year.

New geologic investigations in areas around the dam resulted in the discovery of "previously unidentified seismic deficiencies," according to the water district report:

The upstream embankment is "susceptible to liquefaction" during a "maximum considered earthquake," an earthquake that is expected to occur once in approximately 2,500 years, or a 2 percent chance every 50 years.

The special materials placed between the reservoir's clay core and the rock fill were determined to be inadequate to prevent failure in the event of a "fault offset," leading to seepage and erosion through the bedrock foundation beneath Anderson Dam during a major earthquake.

Even before these new findings, concerns about earthquake safety prompted the district in January 2017 to lower the reservoir's water surface elevation limit an additional 10 feet. Anderson Reservoir is currently limited to about 52 percent of its capacity.

"The retrofit project which was originally planned to include large upstream and downstream buttresses has been modified to a nearly complete replacement of Anderson Dam in place," the district said in its latest report. The project will return the reservoir to its original storage capacity.

The defeat of Proposition 3, for new water bonds, by the state's voters Nov. 6 won't affect the viability of the project, says the district.

Spokesperson Gina Adriano said, “We’ve already allocated project costs within our budget. However, it does reduce the opportunity to lower the district’s project costs by utilizing what would have been potential Prop 3 funding.”

Because the reduced capacity of the reservoir will extend for another two years, continuing the lingering possibility of another spillover, the district had considered using special floating pumps to reduce flood risks by pumping the water out of the reservoir over the spillway.

The district concluded that “installing pumps on the dam or in the reservoir added risk and hazards to the operation of the dam,” and the same benefits “could be achieved through operational changes.”

Anderson Dam creates the county’s largest surface water reservoir—Anderson Reservoir—which stores local rainfall runoff and “imported” water from the Central Valley.

The reservoir is an important water source for treatment plants and the recharge of the groundwater basin. Besides restoring drinking water supplies, the upgrade also supports compliance with environmental regulations. The district’s regular reservoir releases ensure that downstream habitat has healthy flows and temperatures to sustain wildlife.

A breach of Anderson Dam at full capacity could have catastrophic consequences, including inundation of surrounding land more than 30 miles northwest to San Francisco Bay, and more than 40 miles southeast to Monterey Bay.

The district said it is completing a draft Environmental Impact Report for public review, and plans what it calls “a permanent fix to the risks identified by the seismic study.”

In addition to rebuilding the dam, the project will:

Replace the existing outlet pipe that runs below the dam to improve capacity and reliability

Increase the wall height of the concrete spillway to approximately 9 feet and the height of the dam crest to 7 feet.

The new plan to replace the entire dam “will ensure the post-project facility has removed all liquefiable material in and beneath the embankments and will be built to the most modern design standards and with rigorous quality control,” according to the district. In addition, a new high-level outlet will be constructed to allow rapid drawdown of the upper portion of the reservoir in case of an emergency.

The water district is working with the state’s Division of Safety of Dams and the Federal Energy Regulatory Commission. Both agencies have jurisdictional authority over the dam and reservoir, and the water district must obtain their review and approval for all project design plans. In addition, the project is continuously overseen by an independent panel of dam experts. Environmental documents will be prepared to comply with federal and state regulations, and permits will be obtained from several regulatory agencies for water diversion activities during construction, including full draining of the reservoir.

The district cautioned that its 2022-2027 timeline is dependent on a few factors. Currently, engineering work is on track to be 90 percent complete this fall. A critical part of the schedule depends on the acquisition of environmental permits from state and federal agencies, such as

National Marine Fisheries Service, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and California Department of Fish and Wildlife.

Current estimates put the project cost at \$550 million. Of that total cost, 15 to 20 percent will be spent on planning and design, as well as on environmental studies and documentation, with the remaining spent on construction. These cost estimates may change as the project progresses.

The Safe, Clean Water and Natural Flood Protection Program, which Santa Clara County voters approved in November 2012, will fund about \$65 million of this project's cost. The remaining project costs will be funded by water rates. Upon completion of the project, the average household in the area of the county roughly north of Metcalf Road in Coyote Valley can expect an increase of \$6.25 per month in their water rates. Households in the area south of Metcalf Road can expect to see an increase of about \$3.50 per month.

The project will require the use of heavy equipment, which may generate traffic in multiple shifts.

Residents living near Anderson Dam east of Morgan Hill can anticipate other impacts due to lighting, noise and dust.

The water district is working with the City of Morgan Hill, the county's Department of Parks and Recreation and local residents to develop a program to minimize construction impacts. It is expected that the reservoir will be available for some recreational use until early 2022.

For more information, visit <https://www.valleywater.org/anderson-dam-project>

#

Anderson Reservoir at a glance

Anderson Lake, informally called Anderson Reservoir, is an artificial lake in Santa Clara County, near Morgan Hill. A 4,275-acre county park surrounds the reservoir and provides limited fishing (catch and release), picnicking and hiking activities. Although swimming is prohibited, boating, water-skiing and jet-skiing are permitted in the reservoir. The reservoir was created in 1950 by the construction of the Anderson Dam across Coyote Creek in foothills of the Diablo Mountains east of Morgan Hill. The reservoir and dam were named after Leroy Anderson, a key founder and first president of the Santa Clara Valley Water District. It is the largest reservoir owned by the district. The 235-foot-high earthen dam measures 1,430 feet long by 900 feet wide and sits along the Coyote Creek Fault on Coyote Road, east of Morgan Hill. The reservoir itself is situated parallel to the Calaveras Fault, which runs from Hollister to Milpitas. It holds over 90,000 acre feet of water when full, more than the other nine reservoirs in the county combined.

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Jerry Brown's new water deal is not certain

San Francisco Chronicle | December 5, 2018 | Dan Walters

Water supply is clearly the most important long-term issue affecting California's future. It's also the most politically complicated.

Incremental changes in California water policy typically take years, if not decades, to work their way through seemingly infinite legal, regulatory and political processes at federal, state and local levels — and the conflicts often are over the processes themselves.

Often, too, seeming breakthroughs on specific conflicts crumble into dust once they are revealed to the hundreds of "stakeholders."

Given that history, one should view somewhat skeptically last week's announcement of a bipartisan, state-federal agreement on one key piece of the water puzzle.

Two top Democratic officials, Sen. Dianne Feinstein and Gov. Jerry Brown, along with Rep. Kevin McCarthy, a Bakersfield Republican and GOP floor leader of the House, support an extension of the 2-year-old Water Infrastructure for Improvements for the Nation (WIIN) Act, aimed at resolving a conflict over water flows through the Sacramento-San Joaquin River Delta.

Brown's State Water Resources Control Board has been demanding that farmers along the lower San Joaquin River and its tributaries use less water so that more can flow through the delta to enhance habitat for fish and other species.

Using the pending board order as a political club, Brown wants the farmers to voluntarily improve habitat restoration so that the diversions into the delta could be eased.

However, the Trump administration simultaneously has been pushing to give more water to farmers and, inferentially, send less through the delta, offsetting federal court orders that have reduced agricultural supplies.

The WIIN Act extension would, at least in theory, make restoration easier and make farmers' water deliveries more predictable. It also would provide more than \$670 million in federal funds for water storage projects that farmers and other water interests have been demanding to increase supply.

While Feinstein, Brown and McCarthy are supporting the deal, it still must pass muster with the rest of Congress and, most importantly, get President Trump's blessing.

Neither is guaranteed — if for no other reason than it's being attached to a broader spending bill that's hung up over Trump's demand for money to build a wall along the U.S.-Mexico border.

Environmental groups dislike the proposal, seeing it as a backdoor way of reducing delta flows and/or a way of expediting one of Brown's pet projects, his twin tunnels that would divert Sacramento River water under the delta, rather than through it.

Brown told reporters a couple of weeks ago that he wants a comprehensive water deal before leaving office — implicitly one that would clear away potentially toxic opposition to the \$20 billion tunnel project that would be the last big piece of the State Water Plan his father, Pat Brown, launched nearly 60 years ago.

The Feinstein-Brown-McCarthy agreement would be an important component of such a deal, but time is quickly running out in Washington with McCarthy's Republicans about to cede House control to the Democrats, and in Sacramento, where Brown has just a few weeks remaining in his governorship.

It's a game of political chicken. Implicitly, Brown is telling farmers to make a deal with him rather than take their chances on his successor, Gavin Newsom, who might not be as willing, and on a water board that's poised, with strong support from environmental groups, to shift a lot of their water from fields into the delta.

#

Dan Walters is a columnist for CALmatters, a public interest journalism venture committed to explaining how California's state Capitol works and why it matters. calmatters.org/commentary

Canal project complements Sites Reservoir

AgAlert | December 5, 2018 | Christine Souza

A project to increase water management flexibility in Northern California will benefit from a \$449 million loan from the U.S. Department of Agriculture.

Agriculture Secretary Sonny Perdue announced the loan last week during a visit to the site in Colusa County where the Maxwell Water Intertie would be built. The canal would connect the Tehama-Colusa Canal with the Glenn-Colusa Irrigation District main canal, increasing water management flexibility and improving water supply resiliency.

"The intertie between the two canals will allow us to move water, frankly in both directions between the rivers and the canals and the Sites Reservoir, which will be a huge water storage facility for California," Perdue said. "This is an amazing project that has so many benefits, not only for agriculture, but for human drinking water as well as the environment."

The low-interest loan administered by USDA would go to the Sites Project Authority. Authority General Manager Jim Watson said the intertie will connect the two existing regional canal systems, adding that it "can operate independently as a standalone facility to provide benefits for agriculture and rural communities."

"When operated in conjunction with the larger Sites Reservoir, the benefits expand not only to the Sacramento Valley, but into the San Joaquin Valley and to Southern California," Watson said. "This project is a major step in helping to solve some of the water issues here."

The proposed Sites Reservoir is an offstream facility that would store water from the Sacramento River during winter months and is expected to add 500,000 acre-feet annually to the state's water system. Earlier this year, the California Water Commission made a tentative commitment of \$816 million in Proposition 1 bond funding for the expected \$5.1 billion project.

For the announcement, Perdue was joined by U.S. Interior Secretary Ryan Zinke, Assistant Secretary of the Army for Civil Works Rickey "R.D." James, plus elected officials and farmers.

California Farm Bureau Federation President Jamie Johansson, who attended the announcement, thanked the federal agency leaders for traveling to California and showing local agriculturalists that their voices are being heard in Washington, D.C.

"We have long known in agriculture that if we don't properly manage our resources we quickly create liabilities, whether it's floods, drought or forest fires," Johansson said. "This investment in the Maxwell Water Intertie enhances water management that will make a positive difference to rural and urban Californians throughout the state."

Zinke said the intertie project would increase system flexibility.

"(The Maxwell Water Intertie) is for farming, municipalities, wildlife and recreation; it really is flexible and appropriate," Zinke said. "The good thing about California is God gave you a lot of water, but it needs to be distributed a little more, because demands for water are going to increase and having storage will help to move it around and be flexible. I think Sites Reservoir and the interchange, and (raising) Shasta, those three projects will make a significant difference."

The loan from the USDA, Watson said, is contingent on the project completing environmental documents, permits and designs before money is awarded; he said he expects that to happen by late 2022. Money to repay the loan would come from rural and urban water users, he said.

After visiting the intertie site, the government officials and lawmakers met with farmers and others as part of a roundtable discussion at Strain Ranches, a pistachio, almond and walnut facility in Arbuckle.

"We're here to hear the issues—regulatory issues, trade, labor—we need to know what's working, what's not working, what we can do about it and ideas," Perdue said. "Many of the best ideas come from folks like you who have to operate within the bounds of regulations and rules."

On the topic of water regulations, almond grower Rory Crowley of Chico emphasized the need for research to create better groundwater modeling systems, noting that the modeling is used to make regulatory decisions about water.

"One of the biggest needs right now is having better modeling capabilities," Crowley said. "We need some sort of independent, third-party modeling system. They are making decisions based on science that is not there."

Zinke responded that "science should not have an agenda behind it and should be transparent."

Former CFBF President Paul Wenger of Modesto urged the Cabinet members to find solutions to immigration issues that address immigrant agricultural employees who he described as law-abiding, taxpaying residents.

Perdue responded that "the president wants a legal workforce available to agriculture. He knows how important that is. You are not going to do everything with robots, and we've got to recognize that."

The agriculture secretary also discussed retaliatory trade tariffs from China and other nations that have slowed exports of U.S. agricultural products.

"The ball is in their court," Perdue said, adding that he believes "this will be resolved leader to leader."

(Christine Souza is an assistant editor of Ag Alert. She may be contacted at csouza@cfbf.com.)

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Editorial: Brown, Feinstein betrayal of the Delta is unacceptable

California must stop effort to hand more control of Delta water to federal government

Mercury News | December 4, 2018 | Mercury News and East Bay Times Editorial Boards

Shame on Gov. Jerry Brown and U.S. Sen. Dianne Feinstein.

Their betrayal of the Sacramento-San Joaquin Delta ignores respected scientists' research, circumvents the state's management of water and could negatively impact California water politics for the next decade. Without a public hearing. Without proper vetting. And possibly without the support of any West Coast senator except Feinstein.

Just as two state agencies are about act to protect the environmental health of the Delta, the governor and California's senior senator are trying to undermine them.

Californians should urge their congressional representatives to oppose this travesty and demand that Brown and Feinstein stop their collusion with the Trump administration to weaken federal water protections.

At issue is the federal WINN (Water Infrastructure Improvements for the Nation) Act, which was originally designed as a short-term fix to send more Delta water south during California's historic drought. It is scheduled to expire in 2021.

On Friday, Brown announced his support for a seven-year extension of the act, a scheme Feinstein had a hand in crafting along with the Trump administration and Republican House Majority Leader Kevin McCarthy, D-Bakersfield.

Here's a news flash for Brown and Feinstein. The drought is over. The extension only serves to hand the federal government more power over California water politics. It's the means for Brown and Feinstein to force their will on the state.

The extension is designed as a rider to the federal appropriations bill, so it wouldn't get the committee scrutiny a bill of such magnitude deserves.

Californians' only hope of killing the project at the federal level is for Congress to reject the rider. It's possible. When the WINN Act became law in 2016, every other West Coast senator opposed it. Killing the extension will be a significant test of Sen. Kamala Harris' environmental commitment and leadership ability.

For Brown, the WINN Act extension reportedly comes with Trump administration financial support for the Delta twin tunnels.

For Feinstein, the extension is a way to send more water south and to get \$640 million for water storage projects, including environmentally controversial plans for raising Shasta Dam.

The push for sending more water south comes as the state Water Resources Control Board is scheduled to vote Dec. 12 on a plan that would do just the opposite. The board will consider using more of the water from the San Joaquin River for preservation of fish in the Delta.

On Dec. 20, the state Delta Stewardship Council will vote to determine whether the twin-tunnels project complies with the 2009 Delta Reform Act, authored by then-state Sen. Joe Simitian, D-Palo Alto.

The Delta Reform Act established that water supply and ecosystem improvements are co-equal goals that must be met when managing the Delta's fragile environment. It is widely believed that the twin-tunnels project doesn't come close to meeting that mandate.

Six years ago, at Feinstein's urging, one of the world's most prestigious scientific organizations, the National Academy of Sciences, studied the health of the Delta. As Feinstein said, the agency "is the only body whose views will be respected by all the relevant parties as a truly independent voice."

The academy concluded that the best way to preserve the Delta's ecosystem was to send more water, not less, through it and out to San Francisco Bay, rather than shipping the water south.

When it comes to the health of the Delta, we expect the Trump administration to ignore scientific research. But for Brown and Feinstein to do so is unacceptable.

#

USDA announces \$449 million for Sites Reservoir

The announcement follows federal officials' visit to Northern California last week.

Western Farm Press | December 4, 2018 | Dec 04, 2018

Congressman Doug LaMalfa (R-Richvale) issued the following statement after the U.S. Department of Agriculture announced a \$449 million loan to Sites Reservoir Project Authority to build the interconnection facilities to move water in and out of Sites Reservoir.

LaMalfa said: "Sites Reservoir is a project that I've been fighting to see completed since I've been in Congress. After many years of working with the USDA and my California colleague, Congressman John Garamendi, this newly acquired funding will allow the Sites project to finally take the next steps. I've said many times before – surface storage projects like this one are absolutely critical to securing the future of our state's water supply. That's why I made sure 2016's Water Infrastructure Improvements for the Nation (WIIN) Act included funding for the project before it passed the House and was later signed into law. We know all too well the potential economic impacts of a drought, and Sites Reservoir will enable more water storage during wet years in preparation for dry years."

The Sites Reservoir project is a proposed 1.8 million acre-foot off-stream reservoir located in Glenn and Colusa Counties which will use existing infrastructure to divert high winter flows from the Sacramento River. As an off-stream reservoir, Sites does not dam a major stream or river and instead creates new environmental benefits, while relieving pressure on Lake Shasta, Folsom Lake, and other Northern California reservoirs. The project will dramatically increase the flexibility of California's water supply infrastructure, which was built for 20 million people but now serves a population of nearly 40 million.

Supported by 28 water agencies serving over 20 million Californians and irrigating millions of acres of agriculture, the Sites Reservoir project has been endorsed by the Northern California Water Association, the California Alliance for Jobs, the California Farm Bureau, the California Rice Commission, the California State Building Trades Council, Ducks Unlimited, Colusa County, Glenn County, the Sacramento Area Council of Governments (including the Counties of El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba, as well as 22 cities), the Sacramento Metro Chamber of Commerce, the Redding Record-Searchlight, the Sacramento Bee, and various other organizations.

From February, 2018: [LaMalfa Emphasizes Importance of Sites Reservoir at Subcommittee Hearing](#)

Congressman Doug LaMalfa is a lifelong farmer representing California's First Congressional District, including Butte, Glenn, Lassen, Modoc, Nevada, Placer, Plumas, Shasta, Sierra, Siskiyou and Tehama Counties.

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Feinstein, McCarthy push rider to fund Calif. storage plans

E&E News | December 3, 2018 | Jeremy P. Jacobs

California Gov. Jerry Brown (D) on Friday backed a bid by Sen. Dianne Feinstein (D-Calif.) and House Majority Leader Kevin McCarthy (R-Calif.) to extend provisions in a 2016 bill to shuttle more water from the Golden State's wet north to farms and cities in the arid south.

Feinstein and McCarthy are seeking to insert a rider into spending legislation that provides a seven-year extension of measures in the 2016 Water Infrastructure Improvements for the Nation, or WIIN, Act.

WIIN, signed just before President Obama left office, provides hundreds of millions of dollars for new water storage, desalination and other measures. It also grants regulators more flexibility in moving water through the ecologically sensitive Sacramento-San Joaquin River Delta.

Environmentalists and fishing groups lambasted the bill, saying the WIIN Act provisions were intended to be an emergency measure in response to historic drought conditions. They are set to expire in 2021.

Brown, who is coming to the end of his term as governor, said in a statement that he supports the Feinstein-McCarthy language, including "important provisions ... that enable California water users to participate in voluntary agreements and help improve river flows to restore fish populations."

But due to the death of President George H.W. Bush, congressional leaders are expected to punt the spending fight this week and pass a one- or two-week measure maintaining funding levels. The move will give legislators more time to negotiate riders like Feinstein and McCarthy's.

The Feinstein-McCarthy rider comes as the State Water Resources Control Board is considering controversial new water quality standards for San Francisco Bay and the delta, the state's water hub. Those standards haven't been updated in more than 20 years, and the proposal calls for curtailing deliveries to San Francisco and Central Valley farmers to protect stream flows in San Joaquin River tributaries for endangered salmon and other species.

The board is scheduled to vote Dec. 12, after Brown and Gov.-elect Gavin Newsom (D) sent a letter on election night urging it to delay the vote (Greenwire, Nov. 7).

Brown has pushed local water agencies to instead make deals voluntarily to fund habitat restoration and other steps to protect the fish in return for larger water deliveries than currently outlined in the proposal.

The Feinstein-McCarthy language would also authorize the Interior Department to assess fees from federal Central Valley Project contractors for such measures, according to reports.

Fishermen and environmentalists were swift to criticize Brown over the weekend. Some suggested he backed the rider language in order to secure support from the Trump administration for his plan to build twin large tunnels to convey delta water — a legacy project for the governor that appears on life support as he leaves office.

"There's no way to sugar coat this," John McManus of the Golden Gate Salmon Association said in a statement. "Today Governor Brown took a big step towards selling out California's biggest salmon runs in order to keep the Trump administration from killing the governor's Delta tunnels."

The Brown administration has disputed in media reports that there is any quid pro quo at play in the governor's support for the measure.

WIIN Act provisions include \$670 million for new water storage projects. That would likely include a controversial plan to raise Shasta Dam in Northern California about 18.5 feet. The more-than-600-foot dam impounds the state's largest reservoir, and agricultural interests have been pushing to expand it for years.

Environmentalists thought the proposal was dead because it appears to violate state law. But McCarthy breathed new life into the project last spring when he secured \$20 million for pre-construction planning in an omnibus spending bill (E&E Daily, March 23).

The Brown administration opposes raising the dam, which in total would likely cost more than \$1.3 billion.

Another project that could receive funding is expanding the San Luis Reservoir southeast of San Jose.

So far, few funds from the WIIN Act have gone toward new funding projects since it was passed in 2016 beyond the \$20 million for raising Shasta Dam.

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Huge Delta water deal backed by Dianne Feinstein, Jerry Brown, Kevin McCarthy

The Fresno Bee | November 30, 2018 | Emily Cadei and Dale Kasler

Washington - California's most senior Democrat and most powerful Republican in Washington are teaming up to extend a federal law designed to deliver more Northern California water south, despite the objections of some of the state's environmentalists.

While controversial, the language in their proposal could help settle the contentious negotiations currently underway in Sacramento on Delta water flows — the lifeblood of California agriculture as well as endangered salmon and smelt.

Democratic Sen. Dianne Feinstein and Rep. Kevin McCarthy of Bakersfield, the House majority leader, are leading the push to fold an extension of expiring provisions in the 2016 Water Infrastructure for Improvements for the Nation (WIIN) Act into the year-end spending bill that Congress must pass this month. And on Friday, they won the endorsement of Democratic Gov. Jerry Brown.

The legislation would make hundreds of millions of federal dollars available for California water storage projects as well as desalination and water recycling programs.

The WIIN Act also gives the federal government's Central Valley Project and the State Water Project more operational flexibility to increase water deliveries at certain times of year to the south state through the massive pumps in the Sacramento-San Joaquin Delta, leaving less water in the system for Chinook salmon and other endangered species.

The ability to pump more water has become a key demand of local water agencies that are in the midst of trying to negotiate a water flow agreement for the lower San Joaquin River watershed.

They are in talks with California officials to try to stave off a controversial proposal by the State Water Resources Control Board to divert considerably more of the San Joaquin's flow to fish, leaving less for farms and cities.

The board is scheduled to vote on the plan Dec. 12 but Brown's administration has been urging the farms and cities to make voluntary deals under which they would pay for habitat restoration and other projects to help the fish. In return, they wouldn't surrender as much water as the state water board is proposing.

Jeff Kightlinger, general manager of the Metropolitan Water District of Southern California, said an extension of the WIIN Act would give those farms and cities more comfort with the river-flow settlements. They're more likely to accept a deal if they "have the added certainty that things like the WIIN Act will allow you to get more water supply more reliably," Kightlinger said.

Feinstein and McCarthy also want the deal to help fund the potential settlement agreements — part of a bid to win Brown's support for their proposal. The WIIN Act extension would authorize the Secretary of the Interior to collect fees from the participating water contractors to pay for things like habitat restoration.

It appeared to have worked. On Friday afternoon, Brown released a statement saying he supported the extension of the law, "including important provisions that House Majority Leader McCarthy and Senator Feinstein have proposed that enable California water users to participate in voluntary agreements and help improve river flows to restore fish populations."

Environmentalists were quick to blast the legislative proposal, and Brown's decision to support it.

Doug Obegi, a lawyer with the Natural Resources Defense Council, said the outgoing Democratic governor is cooperating with the Republicans in an effort to keep the Trump administration from backing away from his controversial Delta tunnels proposal. "This appears to be a quid pro quo where the governor trades away our salmon and thousands of fishing jobs for his stupid Delta tunnels," Obegi said.

Osha Meserve, a Sacramento lawyer representing environmental groups that oppose the Delta tunnels project, said the law "creates a pot of money that could potentially be put towards what we think of as environmentally destructive projects."

The original law "was supposed to be kind of special to accommodate the pain of the drought that was going on," added Meserve. Now that those drought conditions have mostly abated, she questioned the necessity of extending the same, more flexible standards for pumping in the Delta.

Lisa Lien-Mager, deputy secretary at Brown's California Natural Resources Agency, disputed the depiction of the governor's support.

"It's not a quid pro quo," she said in an emailed statement. "The WIIN Act and its provisions ensure that any changes to water operations must be consistent with the California Endangered Species Act. The Brown Administration has been clear that any policies we advance on water supply have to also protect ecosystems and comply with (the California Environmental Quality Act). Where there are opportunities to add flexibility to the system to meet both of those objectives, we will work with our federal partners to pursue that. "

As it stands now, most of the provisions in the WIIN Act are scheduled to expire in 2021. Feinstein and McCarthy's proposal, which is supported by a handful of other California members of Congress from both parties, would extend the California sections of the law until 2028.

And it would make more than \$670 million in federal funding available for water storage projects in the state. In the past, those funds have been used for studies on a controversial proposal to raise Shasta Dam and one to expand the San Luis Reservoir.

Brown's administration has been opposed to the Shasta Dam project. It would also provide \$160 million over for wastewater, groundwater, water desalination projects. An example of one such project: the North Valley Regional Recycled Water Program, which transports recycled wastewater from the cities of Turlock and Modesto to agricultural users in the Del Puerto Water District. The program has received several million dollars from the federal government through the WIIN Act.

The 2016 law hasn't translated into lots of additional water for south state water agencies thus far, mainly because state officials have been reluctant to cooperate with federal efforts to increase pumping through the Delta, according to Obegi. The state and federal governments operate the pumps in tandem.

Frustrated Trump administration officials have been trying to ramp up the pressure on California to increase water deliveries in recent months. In August, the Interior Department and Bureau of

Reclamation declared they want to renegotiate a landmark 1986 agreement that governs how the state and federal governments operate the Delta pumps. Outside policy experts say the Trump administration is trying to take greater control over Delta operations and ship more water to the federal Central Valley Project customers, almost all of whom are San Joaquin Valley farmers that are allied politically with the president.

Environmentalists say greater federal control would translate into fewer protections for fish. “I am hopeful that the state of California will stand its ground,” said John McManus of the Golden Gate Salmon Association, which represents commercial fishermen.

Congress has just a week to work out a spending deal to keep the federal government funded for the rest of the fiscal year. The water proposal Feinstein and McCarthy are pushing is only one of dozens of potentially controversial measures lawmakers are trying to add to the bill. And like the others, the WIIN Act extension is likely to be a subject of last-minute horse trading. But the bipartisan nature of the measure — and the endorsement of California’s governor — give it a significant edge.

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Delta Tunnels opponents score a victory

The Press | November 23, 2018 | Tony Kukulich

In the bitter battle over the future of the California WaterFix Project, opponents recently scored a victory in their effort to stop the construction of Delta Tunnels.

The development occurred when the Delta Stewardship Council (DSC) staff issued a preliminary finding stating that WaterFix, as it exists today, is inconsistent with the Delta Plan. Without a certificate of consistency, the Department of Water Resources (DWR) cannot move WaterFix forward.

The finding read, in part, “Staff recommends that the Council conclude that substantial evidence does not exist in the record to support (DWR’s) findings that California WaterFix is consistent with the Delta Plan. Staff further recommends that the Council remand the matter to (DWR) for reconsideration...”

Obtaining a certificate of consistency is a regulatory requirement for development projects in the Sacramento-San Joaquin River Delta. The certificate asserts the construction and operation of a project is consistent with the Delta Plan – a comprehensive, long-term strategy for managing Delta resources.

At the heart of the plan is a requirement that the Delta be managed for the co-equal goals of providing a more reliable water supply for California while protecting, restoring and enhancing the Delta ecosystem. These goals must, according to the plan, be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource and agricultural values of the Delta as an evolving place. Any project seeking a certificate of consistency must provide evidence that the project balances both sides of that equation.

DWR, the agency responsible for implementing WaterFix, submitted its certificate of consistency to the DSC this past August. Its submission was appealed by nine groups representing more than 20 agencies that opposed DWR’s action. Three days of testimony and public comments in which proponents and opponents of the project argued their case were held by the DSC in October, and the outcome of that hearing was the draft recommendation issued by the DSC staff.

“The staff of the Delta Stewardship Council has found the deeply flawed twin tunnels proposal does not respect local communities, reduce reliance on the Delta or support healthy Delta flows, per requirements of the Delta Plan,” wrote Assemblymember Jim Frazier (D-Discovery Bay). “The plan does not use the best science and fails to honestly assess the impacts to Delta communities and the region’s agricultural and recreational economy.”

A hearing to review the staff recommendation was held Nov. 15. At the conclusion of that session, DSC Chair Randy Fiorini suggested that DWR withdraw its certification.

“Frankly, I’m frustrated,” said Fiorini. “This project came to us before it was ready. At this point, with the weaknesses identified, and obviously in my opinion, there’s more work to do. I would strongly encourage (DWR) to consider withdrawing the certification of consistency.”

The DSC staff report stated that of DWR’s submission fell short proving consistency with five of the 12 impacted policies of the Delta Plan. The report cites inconsistency with requirements including: using the best available science, adhering to water-flow requirements that impact

water quality, proving that water suppliers receiving water from the project have made adequate efforts to reduce reliance on the Delta and improve regional reliance, and ensuring the project is compatible with local land use in existing Delta communities.

“DWR will have difficulty demonstrating that the tunnels project reduces Delta reliance,” said Tim Stroshane, policy advisor for Restore the Delta. “The tunnels are intended to at least maintain exports or increase them via amplified water transfers. Restore the Delta’s evidence shows that is the intent of the state and other project proponents.”

Secretary for Natural Resources John Laird in a letter to Fiorini expressed disappointment in the preliminary findings and argued that the standard of evidence employed by the DSC staff is impossible for any conveyance project to meet. He concluded by stating that WaterFix is designed to meet the dual objectives of the Delta Plan, improving the reliability of the state’s water delivery system and improving the Delta.

Letters from Jennifer Pierre, general manager for the State Water Contractors, and Jeffrey Kightlinger general manager of The Metropolitan Water District of Southern California, in letters to Fiorini also disagreed with the staff’s draft position and both urged that the DSC staff be directed to revise the findings in support of WaterFix.

“The regulatory burdens and uncertainties surrounding the staff proposals are beyond worrisome for any proposal to advance the co-equal goals and address the unacceptable status quo in the Delta,” wrote Kightlinger. “The Council should refocus on DWR’s substantial evidence that supports DWR’s certification of consistency for California WaterFix and direct staff to revise the draft determination accordingly to move the project forward.”

As the DSC considers the staff recommendation, they are obligated to issue the final determination on DWR’s certification within 60 days of the initial hearing. Unless DWR withdraws its certification before then, two days of hearings are scheduled for Dec. 20 and 21 in West Sacramento and the DSC will issue its final determination at that time.

Kelley Taber, an attorney representing several appellants, said the draft determination presents high hurdles for DWR to overcome if the DSC aligns with the staff recommendation. In that eventuality, DWR will need to submit a new certification demonstrating that the inconsistencies have been mitigated. But, as Taber pointed out, proving WaterFix reduces reliance on the Delta, is not a quick fix.

“I think it’s a shot in arm for the Delta interests – who for the past 10 years have been feeling like their concerns haven’t been heard,” said Taber. “I think the staff draft determination and the comments from the council members were the first real clear indication (for) the people who’ve been raising these concerns about project’s effects on the Delta communities that there might be some understanding and sympathy.”

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For more information, visit <http://deltacouncil.ca.gov>, <http://delta.ca.gov>, <https://nodeltagates.com>, <https://www.restorethedelta.org> or <https://water.ca.gov>.

ACWA CONFERENCE: Department of Water Resources Director Karla Nemeth on the Department's efforts to confront the challenges ahead

Maven's Notebook | December 5, 2018

Karla Nemeth was appointed Director of the California Department of Water Resources by Governor Edmund G. Brown Jr. on January 10, 2018. As the Director, she oversees DWR operations, including maintaining the California State Water Project, managing floodwaters, monitoring dam safety, conducting habitat restoration, and providing technical assistance and funding for projects for local water needs.

At the fall conference of the Association of California Water Agencies held last week in San Diego, Director Nemeth opened the conference with a speech highlighting how the Department is retooling to confront the challenges ahead. In her speech, Ms. Nemeth discussed the challenges of a changing climate, efforts to recruit talented young people to the workforce, investments in new technologies to improve water management, and support for integrated water management.

(Spoiler alert: Ms. Nemeth largely avoided discussing the California Water Fix aka Delta tunnels project; her only comments are toward the end.)

Here is Karla, in her own words.



"I got my start in California water first as a consultant, but it wasn't too long before I realized that I needed to be at an agency, so I really got my start in California water working for a mid-sized water agency in the Bay Area. I was drawn to the practical, no-fail nature of our business. I was drawn to the urgency that accountability brings. And maybe it was the sunset, but I was even drawn to a little bit of romance with the South Bay Aqueduct.

But here I am today, the Director of Water Resources, where those fundamentals of public service still drive me. The challenges though are much more complex and we're going to need each other if we're going to meet them. That's why it's a privilege for me to be here today among so many water policy leaders talking about our state's water future and how do we invest today so we have water for tomorrow.

Before we talk about our state's future, I want to talk about our present. In many ways, that future of changing climate that we've all been talking about and starting to plan for – it's actually here. It's actually our now. The numbers speak for themselves: As of mid-November, the state had experienced nearly 5800 wildfires since the start of the year; that's a 9% increase over the last five year period.

But here's where the numbers get especially scary. The acreage burned in the 2018 fires is 850,000 and that's a 300% increase over the last 5-year average. If you combine those numbers with the US Forest Service numbers, more than 1.6 million acres have burned in California this year.

These numbers tell us that our fires have intensified, they are harder to manage, and are extreme in ways we've never before experienced. These fires are fueled by abnormally hot, dry conditions elevating evaporation rates and dead trees. All of this is exacerbated by climate change.

But it's not just the numbers of acreage burned that tell us the new abnormal has arrived. We have thousands of people across the state who are displaced by these wildfires, or have even lost loved ones. The folks in Paradise can certainly tell us how climate has changed their lives forever. And in the instance of the Camp Fire, it was actually a November storm that finally put the fire out, but not before putting the area on high alert for flooding.

In the not-too distant past, many of us operated under the assumption that the real impacts of climate change would not hit the human race in a significant way until 2100. We now know that this is not true. We don't have the luxury of 81 years to plan for the coming extremes. They are here and they are now and we need to step up.

The Department of Water Resources was a significant contributor to California's Fourth Climate Change Assessment. And it paints a difficult picture of California's future. By 2050, water supply from snowpack is projected to decline by two-thirds and California's agricultural production could face climate-related water shortages of up to 16% in certain regions. And those fires that we've been dealing with, by 2100, the average area burned in California can increase again by 77%.

So we're going to debate exactly when we might experience the range of climate change, but more precisely, how it manifests itself has a degree of unpredictability, and in that sense, it really is an equal opportunity stressor. No one in this room is impervious, so what do we do about that? I'm going to get to that in a minute, but first I want to reflect on how much we've accomplished in the last eight years together.

We've already been laying the groundwork that can help us be successful. So together, we championed the successful initiative for the state's investment of \$7.5 billion in stormwater capture, new water storage, desalination, recycling, groundwater management, and ecosystem restoration. Those dollars leveraged much more from local and federal governments and have put California on a path to invest nearly \$21 billion in infrastructure and management by 2024.

Through the California Water Action Plan, we have unified a statewide vision that improves water use efficiency, empowers regional self-reliance, and integrates water management across all levels of government, and it supports safe water for all communities. For the first time in our history, California has a framework for managing groundwater basins so that they can continue to support communities well into the future.

But I will tell you, one of the things that gives me most pause is that together, we weathered the deepest drought in modern history. And we did it with minimal impact to the California economy. And we did that because of you. You made the local investments in storage, recycled water, and conservation. Without these investments, the pain to Californians would have been much deeper. I truly believe that.



An aerial view of the damaged Oroville Dam spillway on February 26, 2017

But just to remind us that Mother Nature bats last and we must plan for her every whim, the driest periods on record became one of the wettest periods on record. In 2017, even with the Oroville spillway emergency, the State Water Project moved more water in a single year than ever before in its history. Decades after that system was built. I can't think of anything better than the juxtaposition of these two extremes occurring in back to back year to better illustrate the volatility and the complexity of our water system challenges and more importantly, the value of integrating our water supply

The drought did expose the vulnerability of some of California's communities, and we must use our success to motivate ourselves to improve our water supply security when we inevitably experience the next drought.

But just to remind us that Mother Nature bats last and we must plan for her every whim, the driest periods on record became one of the wettest periods on record. In 2017, even with the Oroville spillway emergency, the State Water Project moved more water in a single year than ever before in its history. Decades after that system was built. I can't think of anything better than the juxtaposition of these two extremes occurring in back to back year to better illustrate the volatility and the complexity of our water system challenges and more importantly, the value of integrating our water supply management more broadly.

So Mother Nature, we hear you loud and clear and we're going to step up and meet your challenges with everything we've got. We need to do more than acknowledge the urgency of the moment and embrace it; a response to new climate realities should be foundational to every action we undertake as water managers. Doing something requires more than just new laws and executive orders. We must lead by example.

At DWR, we're committed to investing in people. We're going to recruit the next generation of problem solvers, people who are eager for the challenges that lie ahead. We're also committed

to investing in technology that allows for the real time management of our water systems, improves hydrologic forecasting, protects our water quality, and improves affordability of new supplies. And most importantly, we're committed to investing in partnerships that enable us to integrate water management across water supply and flood disciplines, across watersheds, across organizations, and in ways that achieve multiple benefits. So I want to take these three prongs in order.

First, we need to hire problem solvers, and we need to start hiring the next generation of leaders. We all need to prepare for the workforce of tomorrow. With an expected wave of retirements in leadership positions, we must work to reorganize in ways that promote innovation and reward problem solving. By the numbers, the cohort immediately following our baby boomers is relatively small, so its incumbent upon us to reach out to millennials and others to share with them the importance of the industry and the immediacy of our work.

The good news is that young people get the seriousness of our global situation. A recent survey by the World Economic Forum found that young people think climate change and the destruction of nature is the most critical global issue. They know that we are at a crossroads.

At DWR, we are brainstorming ways to bring new talent into our workforce, reaching out to college campuses to publicize the breadth of the jobs in this field, and send the message that working in the water industry is working on the front lines of climate change. DWR is expanding its recruitment efforts, supporting pathways to leadership internally, and increasing our public and stakeholder awareness of priorities and accomplishments.

This is an opportunity for all of us in California to position ourselves as global leaders in water in an industry that embraces new technologies, seeks new ideas from other sectors, and actively engages with international professional communities.

We must also embrace new technologies to make our state's water system more resilient. Statewide, our use of technology to calibrate operations to meet climate variability has increased exponentially in recent years. At the Department, we're embedding climate change response into every project we undertake. We have set standards to help evaluate how each project incorporates climate resilience principles, and this ensures consistency across the Department.

Last year, through a partnership with UC Davis hydrologic lab and the state's climatologist's office, the Department installed forecasting monitors in the Feather River watershed to improve our real-time management of our reservoirs and assist local water managers. The need to narrow the gap in forecasting and improve our ability to predict and plan for variable weather is essential to the deepening boom-bust of California hydrology.

Still more satellite analysis takes a look at carbon storage in forests and water conditions that could lead to hazards with post-fire debris flow and landslides.

In the Delta, our new high-tech smelt camera allows us to count fish populations without having to capture them. With this camera, we can analyze the endangered fish populations and understand where they are and where they are moving to.

And the Sentinel, the Department's new multimillion dollar research vessel, allows the Department to collect numerous types of data in real time, move throughout the entire Delta more rapidly to assess key water quality parameters that also help us detect the presence of fish and manage our system more efficiently.

DWR has also begun including research institutions in our grant making processes where appropriate with small grants for research institutions to advance desalination technology in ways that protect the environment and provide water at a reasonable cost. It is an important move for the Department to engage with the academic community to make sure that we're in a position to push out new technologies as we consider our grant making to local water agencies.

Together with other state agencies, we're also implementing statewide integrated water data platform. This platform will integrate water and ecological data from the Department of Water Resources, the State Water Resources Control Board, and the California Department of Fish and Wildlife. This will allow for a more holistic dive into our collective climate environmental data to better inform our decision making. This information will be accessible to local agencies and the broader public for their own use. And with that transparency and consistency, we can ensure that we're all moving in the right direction together.

In the area of sustainable groundwater, the Department recently created a new visual tool for local agencies and the public to access groundwater data that has been collected over the last 30 years. This consistent and centralized data will improve coordination across the state and help groundwater sustainability agencies meet the new requirements under the sustainable groundwater management act.

These are just a handful of examples of the way the Department is embracing technology, and I think all of it is pretty cool. I can actually think of a few millennials that might be excited to know this is what it means to work in the water industry. It's not just engineering; we certainly have a few lawyers in our midst. We have hydrologists, and all kinds of A+ people in the industry. But the Department of Water Resources even has a team of back country skiers that ski 100 miles of the Sierra Nevada every year, checking out our snowpack. Who knew if you were into adventure sports, you could have a future of the Department and be part of securing California's water future?

On a more serious and perhaps substantive note, I want to talk about the next steps in integrated water management. For many decades, Californians survived comfortably with siloed approaches to water management. Water was relatively inexpensive and abundant. We only needed to tap the resource. But not that long ago at the regional level, we began to understand that with a growing population, integrating across hydrologic regions made good sense. It promoted efficiency in water planning and water security across regions. So supporting these efforts remain an important part of DWR's mission.

Measuring a well

However today, with the pressures of a changing climate and aging infrastructure, we need to expand our definition of what it means to integrate. Our emerging sustainable groundwater program will pose new questions at the regional level about what it takes to be water secure. Ultimately, a cross connection between integrated regional water management and the kinds of projects and programs it supports and what it takes to bring groundwater basins into a sustainable yield will need



to become standard operating procedure.

Today, 99% of our medium and high priority groundwater basins have formulated local Groundwater Sustainability Agencies to begin to plan and implement ways to move forward to achieve a sustainable yield for their local communities. This need for cross connection is immediately upon us.

Another key area of integration is new efforts to manage floodwaters for aquifer recharge. The concept is to take peak flood flows to recharge depleted groundwater basins. Ideally, reservoir operators would work with downstream flood agencies and local landowners to coordinate the diversion of floodwaters on to private or public lands suitable for groundwater recharge. The potential benefits of this are significant: groundwater replenishment, peak flood flow attenuation, additional values and uses for agricultural land, a potential source of instream flows during drought or other periods of critical environmental need, and finally, increased efficiencies from reservoir reoperation.

The Department is also pursuing an integration of program objectives and what we call multi-benefit projects, ones that can combine water supply, flood protection, and environmental restoration in new ways. The Department itself has created a new division dedicated to this objective. One of the exciting new restoration projects is called Lookout Slough in the Northern Delta. In a nutshell, it really is the quintessential multi-benefit project and one that seamlessly integrates our flood risk reduction needs and our Delta habitat restoration needs. The project is 3000 acres in the Cache Slough region in the northern part of the Delta, and it will open up a floodwater bottleneck at the bottom of a key flood bypass. The area is adjacent to 10,000 acres of existing restoration lands, and when completed, it will produce critical habitat but also critical food resources like phytoplankton and zooplankton that will be exported to rest of the Delta through tidal energy.

Our ability to connect this financially and otherwise with important projects that help reduce flood risk enables the Department to tell a story that we're focused on the same geography and we're asking the land to do a lot of different things, and by merging those efforts and doing them together, we can have better and more cost-effective outcomes across the board. To deliver this project, the Department is engaging the private sector to help the project through design, permitting, and construction. Just as the project integrates multiple public values of flood and environmental restoration, the project integrates across sectors, working with the private sector, local agencies, and other state and federal agencies, and academia. These large complicated projects are what we need; they are not easy, but this really is the taste of what's to come. The multiple public benefits and multiple parties working towards success are a model for DWR's work in this region and beyond.

I also want to talk about integrating the backbone of the state and federal infrastructure with local infrastructure. The Department as the owner/operator of the State Water Project has a lot of work to do to ensure that the system is ready to deliver water supplies for the next 50 years. We are close to completing an asset management plan that will lay out all the important investments we need to make, but this effort provides an opportunity to upgrade the systems with new technologies that can deliver that water more efficiently.

But what's equally important is the next generation of water transfers that can enable state water contractors to manage these supplies more flexibly so that they make the most of investments that they are also making at the local level.

In this sense, we acknowledge that California water management has grown up since the project first came online. No longer are the State Water Project supplies the central feature of the water supply portfolio. They are a critical piece that supports overall water supply security.

Perhaps the biggest infrastructure project in the country is WaterFix, and its primary function is to be able to move water supplies more efficiently during storm events. Coupled with real time monitoring and sophisticated fish screens, we can do better for both fish and water users. These supplies are crucial to groundwater management, and they are the supplies we all anticipate will be used more than once, via important water recycling efforts that are now underway. WaterFix has been under development for 12 years in one form or another. We're very close to final permitting for that project and financing for that project, and it will be a great moment in DWR to be implementing the project. It enables our Department to work on a variety of different ways in which those critical supplies are connected more foundationally to local supplies that everyone in the room here is working to invest in.



Recently completed Lake Oroville main spillway

Lastly, I want to talk about Oroville. As of November 1st, the Department completed its spillway recovery. Both the gated spillway and emergency spillway are now restored to original capacity, and we now enter a new phase about how to make that dam safer in the long term. Our comprehensive needs assessment is a 2-year process that will be responsive to the forensic team report in terms of new safety measures and a deeper understanding of our geology, but it also provides an important opportunity to update how we manage and operate that reservoir. We can use new technologies that develop forecast-informed reservoir operations which can enable us to do better with both flood protection and water supply and be more nimble in the way that we operate Oroville. It also builds on the cooperation we have with other water users in the next watershed on the Yuba River. All of those connections and integration across

watersheds is going to be essential to do the things we need to do to protect the public from flooding, but also to supply important water supplies to many, many Californians.

Finally, I want to talk about how we integrate environmental benefits across watersheds and regulatory regimes. I'll bet a great many of you in the room are familiar with the Water Resources Control Board's effort to update the water quality regulations in the Delta and the Sacramento and San Joaquin watersheds. These watersheds drain 2/3rds of California's runoff so it's actually pretty difficult to not be interested in this process.

San Joaquin River



As many of you know, the Department is deeply engaged in efforts to bring voluntary agreements among water districts, Bureau of Reclamation, our sister agency the Department of Fish and Wildlife, and environmental groups to the Water Board for their consideration in lieu of implementing new water quality standards. Opportunity for water users is enormous. 15 years of regulatory certainty, a

seat at the table in a more open and collaborative science process to guide the use of financial and water resources, significant and enforceable state commitments to restoring habitat and addressing other limitations on fish species.

But I think the part that intrigues me the most is that we know from decades of experience that flows without physical habitat restoration don't do the things we need them to do to help make our fisheries more resilient. But what's becoming even more clear is that investing in one part of the watershed without investment or coordination with another part of the watershed also limits our success. Salmon making its way from the upper watershed down to the Delta, out to the ocean and back again, doesn't care who has the water right to use the water in which they are swimming, rearing, and moving through their habitat. We do, we most definitely and appropriately do, but the fisheries do not. The voluntary agreements give us an important opportunity as a water user community to help knit these ecological pieces together and to help demonstrate that in fact, the whole is greater than the sum of its parts when we're working to restore the ecosystems that help us create a more reliable water supply.

It's going to take an acknowledgment from all of us that all watersheds are not the same, and we need to work across all of them for the most efficient and effective way to support our ecosystem. I'm heartened to look in this room and see the expertise and passion and commitment of so many people who are managing our state's resources to the highest public benefit and working in partnership to do so. You all know that the stakes are high, we would not get any work of consequence done in Sacramento without your engagement and expertise. And while we may be of varied opinions on many issues, our end goal is clear. We must build a path to a sustainable future using our best science and facing our challenges head on, and we must build strong partnerships too.

In this time of multiple and intensifying challenges, I like to think of our mission as embracing the notion of ourselves as stewards of ‘rambunctious garden.’ Rambunctious garden is a term coined by writer Emma Marris. The premise is that we are at a place and time where we cannot return nature to its pristine pre-human state and we need to accept that and plan for our future with that awareness. We must accept that humans have altered our landscape irrevocably and from here we must use our best science and conservation techniques to create a rambunctious garden, a hybrid of wild nature and human management that we responsibly and innovatively tend.

This is an apt description for this moment in California, and tending to and developing this rambunctious garden of our state should be our guiding principle and narrative. What I like about the idea is that it doesn’t put forth a false binary choice between environmentalism and infrastructure planning and water management. These days, both so-called environmentalists and water buffaloes are more likely to have PhDs in environmental science and be working together on satellite monitoring of groundwater levels or state of the art fish screens or bringing a desalination plant online.

We had our era of big infrastructure, that pioneering era where some of our best minds constructed the largest state water system in the nature, bringing water in the Sierra to regions throughout the state. That era essentially built California into the economic powerhouse it is today. Then we have the new era of environmental laws that required a shift in operations, a shift away from our thinking, a shift in a way that we thought about and managed water. We are still working to meet these challenges but through science and innovation we’re making great strides. And now it’s our aging infrastructure, complex environmental challenges associated with managing these rambunctious garden and the intensifying pressures of climate change that drive us.

So let’s invest. Let’s invest in people, let’s invest in technology, and let’s take that next step in integrating our water management system. Let’s do this work together.

I thank you for this opportunity to address you this morning, and open the ACWA conference. May it be a great success.”

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Hatchery still drawing large salmon count

RecordNet | December 5, 2018 | Dan Bacher

As the salmon fishing season nears its end on the Mokelumne and Sacramento rivers, big numbers of fall Chinook salmon continue to go up the fish ladder at the California Department of Fish and Wildlife's Mokelumne River Hatchery in Clements.

The count over Woodbridge Dam on the Mokelumne to date is 16,300 salmon, including 5,654 jacks, according to William Smith, hatchery manager. A record number of fall-run Chinook salmon, 19,954, went over Woodbridge Dam in the fall of 2017, the highest number since 1940. The season ends on the rivers on December 16.

When I visited the hatchery on November 29, the river and hatchery were plugged with salmon ready for spawning.

"With so many threats facing fish, strong returns confirm the health of the Mokelumne River, making this a welcoming home where salmon can survive and thrive," said Jose Setka, EBMUD manager of Fisheries and Wildlife.

Setka said the big fall returns are a result of efforts that have focused on "fine-tuning water operations," including managing cold water in Camanche and Pardee reservoirs to maintain good spawning conditions, releasing pulse flows of 1,500 cfs from Camanche Dam to attract fish, restoring gravel habitat and using tagging data to evaluate hatchery release strategies. Additional measures include transporting juvenile salmon by barge and feeding them a specialized diet to assist the fish in transferring from freshwater to seawater.

Another major factor he cited was the partnership they have developed with the federal agencies to close the Delta Cross Channel Gates to prevent Mokelumne fish from straying into other Central Valley systems.

Before 1998 when the Mokelumne River Settlement Agreement went into effect, the average salmon run was 4,000 fish. Since then, the run has averaged 9,541 fish per year.

In addition to Lower Mokelumne River Partnership member agencies CDFW, United States Fish and Wildlife Service, National Marine Fisheries Service and EBMUD, stakeholders responsible for the overall improvements in the river include the California Sportfishing Protection Alliance, North San Joaquin Water Conservation District, Woodbridge Irrigation District and landowners along the river, according to EBMUD.

"Fishermen are so grateful to the staff at the Mokelumne River Hatchery – there is so much innovation there that leads to much higher salmon returns," said John McManus, president of the Golden Gate Salmon Association. "One of the keys is they get support from EBMUD, an organization with an openness to trying new things. There is a recognition of hostile conditions downstream – and that they have to get around the hazards to increase fish survival."

North Delta Stripers/Crappie: Both striped bass and crappie are showing in the Mokelumne River and Snodgrass Slough area out of Wimpy's Marina as the fish feed on schools of shad. On his latest fishing adventure, Alan Fong of Fisherman's Warehouse reported great crappie and striper action out of Wimpy's.

“We hooked over a hundred crappie up to one-and-a-half pounds while using two-and-a-half inch Finesse Shad in smoke with black flake, smoke/chartreuse and salt and pepper colors,” said Fong. “We graphed massive schools of shad at 20 to 25 feet deep”

Fong found a hot bite for stripers to 8 pounds for an hour while throwing out Alabama rigs. “There are also quite a few bigger stripers showing in the Sherman Island area,” he tipped.

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Turning on the taps

Soquel Creek water sharing 'no silver bullet'

Santa Cruz Sentinel | December 3, 2018 | Jessica A. York

SOQUEL — Millions of gallons of Santa Cruz's city water supply began flowing to some neighboring Soquel Creek Water District customers for the first time Monday morning.

In a ceremonial turning of the valve at a well site near 41st Avenue and Soquel Drive, the three-year-old largest connection point between the two agencies' water systems, officials gathered to commemorate a new pilot program, some three years in the making.

Santa Cruz Water Commission Vice Chairman Doug Engfer said the small-scale project, which will allow Soquel Creek Water to temporarily turn off some of its water pumps for the coming months, is likely not a "magic bullet" to the region's water supply issues — but neither is any other single project. The water district is struggling to prevent further saltwater contamination of its underground aquifer water supplies; the partnership is designed to reduce over-pumping of the district's supply as it investigates a long-term solution.

"But all these likely will contribute to a long-term, sustainable resilient supply and we need to do all that within the context of a prudent regard for the cost of this stuff," said Engfer, also a member of the disbanded city Water Supply Advisory Committee. "Water systems not only take a lot of time to implement, but they cost a lot."

Value of water

Soquel Creek Water District board President Bruce Daniels commended the work that brought the two agencies to the point of the water transfer project, but said "the notion of caution is an important one."

"Turning this valve is about a \$400,000 project, and with all that time spent, too," Daniels said. "So, the solutions are not easy."

Under terms of the pilot water sharing program agreement, Santa Cruz is selling its extra winter river water supply to its neighbors on a month-to-month basis, at a cost of \$1,000 for every million gallons of water. In context, the larger city of Santa Cruz customer area uses about 7 million gallons of water per day.

The city's initial price tag on its water sales to Soquel Creek is a "research project cost," not retail value, said Santa Cruz Water Director Rosemary Menard. She declined to speculate on the cost of a more permanent relationship, as it would depend on whether or not the city was able to later retrieve some of its supply when needed.

Deep water

Although this is the first time that water is flowing from the city to the water district, Santa Cruz has called on Soquel Creek leaders on several occasions for emergency water transfers, including after damaging winter storms and the Newell Creek pipeline failure in January 2017.

The water pump station at the O'Neill Ranch Well connecting the two agencies has the capacity to transfer as much as 1.5 million gallons of water a day and two other pipeline interties between the agencies could add a small additional amount, Menard said. To serve the entire

Soquel Creek Water District system requires about 2 million to 2.5 million gallons a day during the winter, she said.

The wintertime-months partnership is scheduled to continue winters through December 2020, as city water is available and not causing any adverse water quality issues. Menard said the city is closely watching its Loch Lomond Reservoir storage levels and the weather, and the city Water Commission could opt to halt the water transfers at any time.

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DWR Announces Draft Decisions for Groundwater Basin Boundary Modifications

California Water News Daily | December 2, 2018

Draft decisions for groundwater basin boundary modification requests have just been announced by the California Department of Water Resources (DWR) based on the modification requests submitted by local agencies as part of the implementation of the Sustainable Groundwater Management Act (SGMA). Forty-three requests for basin modifications that affect 59 basins and subbasins were received by DWR.

Basins boundaries were last updated in 2016. Basin boundaries characterize the extent of groundwater basins in California. SGMA requires these basins to be prioritized to determine which will be required to develop groundwater sustainability plans.

Modifications can be requested for either scientific or jurisdictional reasons. Scientific modifications are based on geologic or hydrologic conditions, whereas jurisdictional modifications change boundaries to promote sustainable groundwater management. At the present time, California has 517 groundwater basins and subbasins.

DWR staff reviewed all 43 requests and approved 33, denied seven and partially approved three modification requests. The approved modifications met the requirements of the 23-page Basin Boundary Regulations found in the California Code of Regulations, [Title 23](#)

DWR's denials were based on criteria identified in the above regulations and were specific to the unique information presented for each type of modification request. Some requests were partially approved because some portions of the modification requests were adequately supported by the information provided, while other portions were not.

DWR's draft decisions are subject to further input by the public and local agencies during a 30-day public comment period. Two Basin Boundary Modifications Public Meeting are scheduled in the 30-day period to solicit comments, as follows:

Tuesday, December 11, 2018 at 1 p.m.
California Natural Resources Agency Auditorium
1416 9th Street, Sacramento

(This meeting will also be webcast live at:

<https://na01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.youtube.com%2Fuse%2Fcalwater%2Flive&data=02%7C01%7C%7C1ae5dc7b3cc54c9557f508d6570699e9%7Cb71d56524b834257afcd7fd177884564%7C0%7C1%7C636792083217495430&sdata=VHL6WqkDt5pWmf0KeFxM%2F6u6E5LoJ7Q7MttADviPjeM%3D&reserved=0>.

The second meeting will be part of the California Water Commission meeting on:

January 16, 2019 at 9:30 a.m.
State of California, Resources Building, First Floor Auditorium
1416 Ninth Street, Sacramento

Comments can be submitted online at any time during the public comment period, which ends January 4, 2019 at: <https://www.surveymonkey.com/r/C2HKS6Q>. All public comments received throughout the process will be reviewed and evaluated before final Basin Boundary Modifications results are announced in February 2019.

Additional information on the Draft Basin Boundary Modifications and SGMA can be found online, as follows:

Draft Basin Boundary Modifications — https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Basin-Boundary-Modifications/Files/2018_Draft_Decision_Summary_Table.pdf

SGMA — <https://water.ca.gov/Programs/Groundwater-Management>

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Initial State Water Project Allocation at 10 Percent

The Independent | December 6, 2018

The California Department of Water Resources (DWR) announced on Nov. 30 an initial water allocation of 10 percent for the State Water Project (SWP) contractors for the 2019 calendar year. Allocations often change as hydrologic and water supply conditions change.

“Even with the recent rainfall, Water Year 2019 has started dry and many of the state’s largest reservoirs are below average for this time of year,” said DWR Director Karla Nemeth. “With California’s extreme hydrology, we have to plan for a wet or dry year.”

The Department’s initial allocation for 2018 was 15 percent. The final allocation for 2018 reached 35 percent. The lowest initial SWP allocation was 5 percent in 2014 due to the record drought.

Reservoir storage, snowpack, precipitation, and releases to meet local deliveries are among several factors used in determining allocations.

Lake Oroville, the SWP’s largest reservoir, is at 29 percent capacity and 48 percent of average for this time of the year. Shasta Lake, the Central Valley Project’s (CVP) largest reservoir, is at 48 percent of capacity and 80 percent of average. San Luis Reservoir, the largest off-stream reservoir in the United States where water is stored for the SWP and CVP, is at 57 percent of capacity and 96 percent of average.

DWR transports SWP water to 29 SWP contractors which serve more than 27 million Californians and 750,000 acres of farmland. The 2019 initial allocation amounts to 427,167 acre-feet of water.

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Series of Pacific storms raises hopes for a wet El Niño season

NBC News | December 6, 2018 | Dennis Romero

LOS ANGELES — Southern California was in the midst of its fourth rain event of the season this week and with another expected next week, some experts believe the arrival of the weather phenomenon known as El Niño could be imminent.

While it may be too early to link the Pacific storms to El Niño, the federal Climate Prediction Center's El Niño "diagnostics discussion" could make the call next week on Dec. 13.

If a full-on El Niño weather pattern is forming, it would mean an increased chance of more rain in California and a possible end to a moderate drought that has fueled wildfires throughout the state.

The linchpin of El Niño, consistently above-average warmth in the waters of the equatorial Pacific, is already present, scientists say. Federal forecasters are waiting for those waters to interact with the atmosphere and create storms before they declare El Niño's presence.

"The temps are quite warm on the surface, but we're just waiting for the atmospheric component to give us some storminess," said Andrea Bair, climate services program manager for the Western region of the National Weather Service.

California state climatologist Mike Anderson says the storms that have struck California since late November resemble classic El Niño systems, which often soak up tropical moisture from the central Pacific before blasting the Golden State coast like a fire hose.

"Some of that includes the way the jet stream behaves," he said. "It tends to zip across the Pacific in an east-west pattern. It's also accelerated, and we see storms hit fairly quickly. We're starting to see some of that take shape."

Other experts say it's too early in the season to attribute the storms to the weather pattern named for baby Jesus because its telltale warm waters often peak around Christmas.

The system's rising air motion has been known to lead to above-average rainfall in the eastern Pacific Ocean.

It can also impact global weather patterns. In Australia, the phenomenon can mean less rain.

"El Niño has not formed yet," said Jan Null, a former National Weather Service lead forecaster who is an expert on the phenomenon and believes it's too early to make the call. "It's still in the formative stages. [Determining] whether it's having an effect on our weather now is problematic."

And Bair, of the weather service's Western region, said Southern California's recent storm activity "does look like what we'd expect during an El Niño." But she cautioned, "You can get those in any given year."

Climate researchers say unusually warm waters off Southern California, where records were set in the summer and sea surface temperatures remain unusually high for the time of year, could boost the moisture for any systems that hit the coast. This isn't necessarily tied to El Niño.

"Warmer coastal sea surface temperatures should enhance precipitation from some storms," said Alexander Gershunov, research meteorologist at the Scripps Institution of Oceanography.

Weather experts are betting on the Climate Prediction Center to declare a weak to moderate El Niño.

"It is a weak El Niño, but there is some hope for above-normal rainfall," said Jin-Yi Yu, professor of earth system science at the University of California, Irvine.

There hasn't been a classically wet El Niño in California this century, he said.

In the 1980s and 1990s, El Niño was triggered by unusually warm water along the eastern portion of the equatorial Pacific. That warmth fed a jet stream that aimed for much of California from the Bay Area south. El Niño attacked this way in the historic California storm years 1983 and 1998.

But this century's strongest El Niño in 2016 hopped over the estimated 20 million people living in Southern California in favor of a trajectory that aimed north of San Francisco and struck the Pacific Northwest.

Yu called this a central Pacific El Niño because the warm waters of the equatorial Pacific remained west instead of migrating toward Central and South America.

"We know this new type of El Niño does not bring us the rain that a traditional El Niño from the eastern Pacific brings," he said. "Most of these new El Niños are usually very weak."

The rain didn't come in 2016, but the surf did.

"We had a number of significant swells" in California, said Kevin Wallis, lead forecaster for wave prediction service Surfline.

This year, strangely, south swells continued to hit the Southern California coast deep into November, he said. "The south swell you associate with summer and early fall," Wallis said.

Gershunov, of the Scripps Institution of Oceanography in La Jolla, said global warming has upended classic weather patterns, possibly even El Niño. Winters in California are shorter but more intense. Summers, he said, are getting longer and longer.

"There's still a lot of research that needs to be done to understand why the El Niño's signals have not been impacting this region in the last 20 years," he said.

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One of California's Most Important Assets is Off to Great Start This Year

The Weather Channel | December 5, 2018 | Jonathan Belles

California's Sierra Nevada, the state's increasingly crucial reservoir, is off to a well-above-normal snowpack to begin the wet season.

Many of the peaks are seeing double the normal amount of snowpack compared to early-December averages.

Percentage of snow water trapped in the Sierra Nevada, where blue and green flags show above-average snowpack.

Several systems, including the disturbance that became Winter Storm Carter, have dumped feet of snow in the Sierra since late November. Snowfall totals ranged from three to five feet of snow in Carter alone.

You can see the difference between a rather wimpy late November snowpack and the early December blanket of snow from the Sierra eastward below.

The central and southern Sierra are doing especially well in the powder department due to the recent storm tracks to the south.

The higher terrain of California, including the Sierra Nevada, act as a slow-release water tank that drips water into the lower-elevations and higher population centers across the state.

More than 60 percent of California's water supply comes from the Sierra Nevada. This water is used by 25 million people for sustainability, forestry, power and more.

Snowfall during the winter months is like California putting money into a bank to be used in later months. The more snow that falls during the winter, the less likely the golden state will have water issues later in the year.

Spring and summer snowmelt of Sierra snowpack is crucial to California's water supply. It recharges reservoirs downstream during the state's dry summer and early fall, so the amount of water content the mountains contain is important.

The last several years have been rocky in the state in terms of water.

The news has been good despite the long-lasting drought across the state. Dry conditions dominated from 2011-2016, but the 2016-2017 wet season was one of the wettest for the state. Going into the 2018-2019 wet year, the central and southern Sierra are actually the least dry portion of California.

The recent spell of wet and snowy weather had made Mammoth Mountain in the central Sierra the snowiest place in the Lower 48.

Ski resorts along the entire mountain chain are using the new snowfall to open more trails and lifts.

California picks up most of its precipitation during the winter months and there is plenty of time for more snow. The forecast continues to bolster some hope that the drought will come to an end this year.

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