

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

February 9, 2024

Correspondence and media coverage of interest between January 19, 2024 and February 5, 2024

Correspondence

From: Nicole Sandkulla, CEO/General Manager, BAWSCA
To: President Timothy Paulson and Members of the SFPUC Commission
Date: February 5, 2024
Subject: SFPUC's FY 2025-34 Water Enterprise and Hetch Hetchy Enterprise
10-Year Capital Plans

From: Info@losvaquerosjpa.com
To: Stakeholders
Date: January 30, 2024
Subject: Los Vaqueros Reservoir Joint Powers Authority Update

Press Release

From: Maven
Date: February 5, 2024
Press Release: C-WIN: Trinity River: The glaring omission in the State Water Board's Bay Delta
Plan Update

Water Supply Conditions:

Date: February 1, 2024
Source: Modesto Bee
Article: Sierra snowpack is below average. What it means for water users in Stanislaus
County

Date: February 1, 2024
Source: Better Planet
Article: California's Largest Reservoir Nears 7-Year Milestone as Water Levels Rise

Date: January 30, 2024
Source: San Francisco Chronicle
Article: Here's where California's snowpack stands with winter half over

Date: January 30, 2024
Source: ACWA
Article: Second Snow Survey Shows Modest Improvement for Snowpack

Date: January 22, 2024
Source: Mercury News
Article: Sierra Nevada snowpack triples in past month, more storms on the way

Water Management:

Date: February 8, 2024
Source: The People’s Network
Article: San Joaquin Valley Stakeholders Contest State Water Board’s Bay Delta Plan Update

Date: February 7, 2024
Source: Water Wrights
Article: Blueprint Response to State Board Draft Report, February 7, 2024

Date: February 7, 2024
Source: The Independent
Article: EPA Advocates for River Flows to The Sacramento River Delta

Date: January 25, 2024
Source: Reasons to be Cheerful
Article: A Ranch, Rewilded: The Transformation of California’s Next State Park

Date: January 19, 2024
Source: ACWA Newsletter
Article: Spotlight January 2024: Agencies Collaborate on Salmon Habitat Restoration on Tuolumne River

Water Policy:

Date: February 7, 2024
Source: AgAlert
Article: Newsom announces strategy to help salmon populations

Date: February 5, 2024
Source: Maven News and Features
Article: Newsom’s salmon strategy gets mixed reviews

Date: January 31, 2024
Source: Northern California Water Association
Article: Newsom Administration Develops Comprehensive Salmon Strategy for California

Opinion:

Date: February 1, 2024
Source: Modesto Bee Opinion
Article: This Sierra river needs more water for salmon. San Francisco wants to give it gravel

Miscellaneous:

Date: January 24, 2024
Source: San Francisco Chronicle
Article: Will S.F.’s population grow in the future? New study predicts city may follow a different trend than others



February 5, 2024

Via email

The Hon. President Timothy Paulson, SFPUC Commission
San Francisco Public Utilities Commission
525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102

RE: SFPUC's FY 2025-2034 Water Enterprise and Hetch Hetchy Enterprise 10-Year Capital Plans

Dear President Paulson and Members of the Commission,

Created by the California Legislature through AB2058 in 2002, the Bay Area Water Supply & Conservation Agency (BAWSCA) represents the interests of 24 cities and water districts, and two private utilities that serve over 1.8 million residential customers and 40,000 businesses in Alameda, San Mateo, and Santa Clara Counties. A primary role of BAWSCA is to monitor the San Francisco Public Utilities Commission's (SFPUC) operation and long-term maintenance of the San Francisco Regional Water System (RWS) that provides two-thirds of the water supply delivered by BAWSCA's 26 member agencies to their customers.

The SFPUC 10-year Capital Plan presents the critical projects necessary to ensure long-term water supply reliability for the BAWSCA member agencies and their customers. BAWSCA has reviewed the 10-Year Capital Plans for the Water Enterprise and the Hetch Hetchy Enterprise and offers the following findings and recommendations to the Commission.

BAWSCA Findings and Recommendations

Finding 1: BAWSCA is pleased to see that the SFPUC has included a robust list of projects and programs as part of the 10-year Capital Plan, and supports the budget proposed for both the Water Enterprise and the Hetch Hetchy Enterprise.

Finding 2: Known project deliverability issues continue to impact the implementation of Capital Plan projects.

The underlying issues of very lengthy recruitment and contracting processes continue and are cited on several project data sheets included in the FY 2025-2034 Capital Plan as reasons for project delays. Projects that noted their implementation was "pending available resources" or could be delayed due to a "lack of resources" include: the Sunol Valley Chloramination Facility (SVCF) Chemical Storage Improvements (\$8,519,221); the San Antonio Backup Pipeline (SABPL) Valve Redesign (\$1,012,500); the Harry Tracy Water Treatment Plant (HTWTP) Electrical Substation Upgrades (\$9,495,232); the San Antonio Pump Station Upgrades (\$18,360,849); and the Pulgas Facilities Upgrades (\$25,784,556). These projects represent \$63,172,358 of Water Enterprise capital work explicitly impacted by staffing issues.

On the slides developed for the budget hearing of January 29, 2024, details were provided regarding staff positions within both the Water Enterprise and the Hetch Hetchy Enterprise. From a strategic standpoint, some temporary positions would be turned into permanent positions and a small number of new positions were proposed. There were a number of likely staff retirements also assumed. A significant means the SFPUC proposes to address future staff challenges appears to be making position substitutions internally to realign with enterprise needs.

Project delivery, including staffing challenges, was a chief concern to be addressed internally by the SFPUC as part of their new Capital Planning Improvements Initiative, led by Deputy GM Ron Flynn.

Recommendation 1:

The team leading the SFPUC's Capital Planning Improvements Initiative should be tasked with providing, to the Commission, an annual report documenting its work efforts and progress. Documentation should include key metrics that allow the Commission and BAWSCA the ability to track how well (or not) the initiative is achieving its goals (including but not limited to the goals of removing barriers to project deliverability, addressing future staffing challenges, etc.).

Finding 3: The SFPUC is funding a significant portion of the first 2 years of the 10-year Capital Plan with funds that were already appropriated in a prior approved capital plan.

BAWSCA is concerned with the long-term implications of the approach that the SFPUC is following for funding the first 2 years of this 10-year CIP, which is to use money that is unspent in the current fiscal year and apply it forward (unencumbered carryover). The need for this approach has been explained to BAWSCA by the SFPUC. Specifically, the SFPUC staff provided BAWSCA with a simple bar chart and table documenting the unencumbered carryover funds as of July 1 for each fiscal year since 2017. These visuals offer a clear picture of the year-over-year changes in carryover. They show that the level of carryover funds each year ranged from a low of \$691.2M recorded in 2018 to a high of \$998.2M in 2023. The SFPUC staff agreed that the carryover balance was high, yet noted that a high balance allows for work continuity to take place (since without such carryover work may need to be suspended until the City Controller has secured additional appropriations).

BAWSCA agrees that continuity of work is important, and therefore some carryover is justified. Yet the high level of carryover continues to lead to the impression that the SFPUC has budgeted for more work than can be performed during a fiscal year.

Recommendation 2:

The Commission should require that an annual report documenting the steps taken internally to reduce unspent appropriations be included as part of reporting on the Capital Planning Improvements Initiative. The SFPUC must do more to reduce the level of unspent appropriated funds.

Finding 4: The SFPUC's projected water sales to wholesale customers, presented during SFPUC's January 22, 2024, Budget Hearing, referenced sales volumes that differ

from wholesale customer projected purchases from the SFPUC that are prepared by BAWSCA.

The SFPUC's finance department's projected future water sales volume calculation is designed to best assure that incoming SFPUC revenue will be sufficient to fund SFPUC's operating and capital budget. These projections are not based on actual anticipated or planned changes in population, employment or water use characteristics in the wholesale service area.

Recommendation 3:

SFPUC staff should be directed to include a reference (i.e., footnote and/or a discussion) when presenting data on future water sales that differs from the wholesale customer projected purchases from SFPUC that are provided by BAWSCA. While the Commission and SFPUC staff may be aware of that difference between the basis for BAWSCA's projections and those done by the SFPUC finance department, and moreover are aware of the SFPUC finance department's desire to utilize a different approach for estimating future water sales, the public is likely not aware, and therefore, more clarity is appropriate.

Finding 5: The proposed Moccasin Penstocks Replacement is the single largest cost project in the Hetch Hetchy Enterprise 10-Year Capital Plan; it has an as-yet-to-be-determined timeline for repair; and there is no project or funding for interim repairs to protect water supply reliability.

As noted by Mr. Ritchie in his presentation of the capital budget for the Hetch Hetchy Enterprise, \$322M in funds are anticipated to be spent on work associated with Moccasin Penstock Replacement Project within the coming 10 years. He also noted that repairs are not possible and that a preferred alternative for replacement has yet to be identified. This project is now the highest cost project in the Hetch Hetchy Enterprise 10-Year Capital Plan.

All drinking water from Hetch Hetchy must pass through the Moccasin Penstocks and therefore, they are critical for ensuring water supply reliability. Each of the alternatives being considered for replacement will take significant time to plan and implement, during which time, the Moccasin Penstocks will remain vulnerable to failure given their documented deteriorated condition. At this time, the Capital Plan does not include a project to address interim repairs to the penstocks to ensure continued operation for drinking water purposes while the long-term replacement project is implemented.

Recommendation 4:

BAWSCA requests to be engaged during the selection of a preferred alternative for the Moccasin Penstock replacement. Additionally, given the existing documented deteriorated condition of the penstocks and the extended time to implement the selected replacement alternative, BAWSCA also requests the SFPUC to provide plans for interim measures, including identified capital projects and associated funding, that ensure the operation of the existing penstocks until such time as they are replaced.

Finding 6: Several projects included in the 10-Year Capital Plan for the Water Enterprise and the Hetch Hetchy Enterprise show a proposed budget of \$0 and with project data sheets that provide limited discussion of the proposed work.

The following projects in the Water Enterprise Capital Plan have budgets of \$0:

- SVWTP Polymer Feed Facility;
- HTWTP Underdrain Replacement;
- Regional PCCP Repair;
- Metering Upgrades R&R;
- Vault Upgrades R&R;
- Sunol Valley Pipelines Seismic Upgrades;
- Sunol Yard Improvements R&R;
- Millbrae Yard Improvements R&R;
- Microwave Backbone System;
- Tesla/Thomas Shaft microwave to SVCF & Radio Replacement; and
- Sneath Lane Gate/San Andreas.

The following projects in the Hetch Hetchy Enterprise Capital Plan have budgets of \$0:

- Early Intake Dan Interim Improvements; and
- Mountain Tunnel Inspection.

Recommendation 5:

The Capital Plan should address these projects with \$0 budget, include a discussion as to why such a large number of projects were combined and reorganized, and provide details as to how combining the work improved deliverability or reduced costs.

BAWSCA appreciates the hard work of the SFPUC staff to develop the 10-year Capital Plans for the Water Enterprise and the Hetch Hetchy Enterprise.

BAWSCA's recommendations are presented to support a more robust Capital Plan that addresses the needs of the Regional Water System and the water users that rely on it.

Sincerely,



Nicole Sandkulla,
BAWSCA CEO and General Manager

cc: Dennis Herrera, SFPUC, General Manager
Steven Ritchie, SFPUC, Assistant General Manager of Water Enterprise
Stephen Robinson, SFPUC, Assistance General Manager of Infrastructure
Alison Kastama, SFPUC, BAWSCA Liaison
BAWSCA Board of Directors
BAWSCA Water Management Representatives
Allison Schutte, Hanson Bridgett, LLP, Legal Counsel

From: Los Vaqueros Reservoir JPA <info-losvaquerosjpa.com@shared1.ccsend.com>

Sent: Tuesday, January 30, 2024 4:00 PM

To: Nicole Sandkulla <NSandkulla@bawsca.org>

Subject: Los Vaqueros Reservoir Joint Powers Authority Update

January 30, 2024

Los Vaqueros Reservoir Joint Powers Authority Update

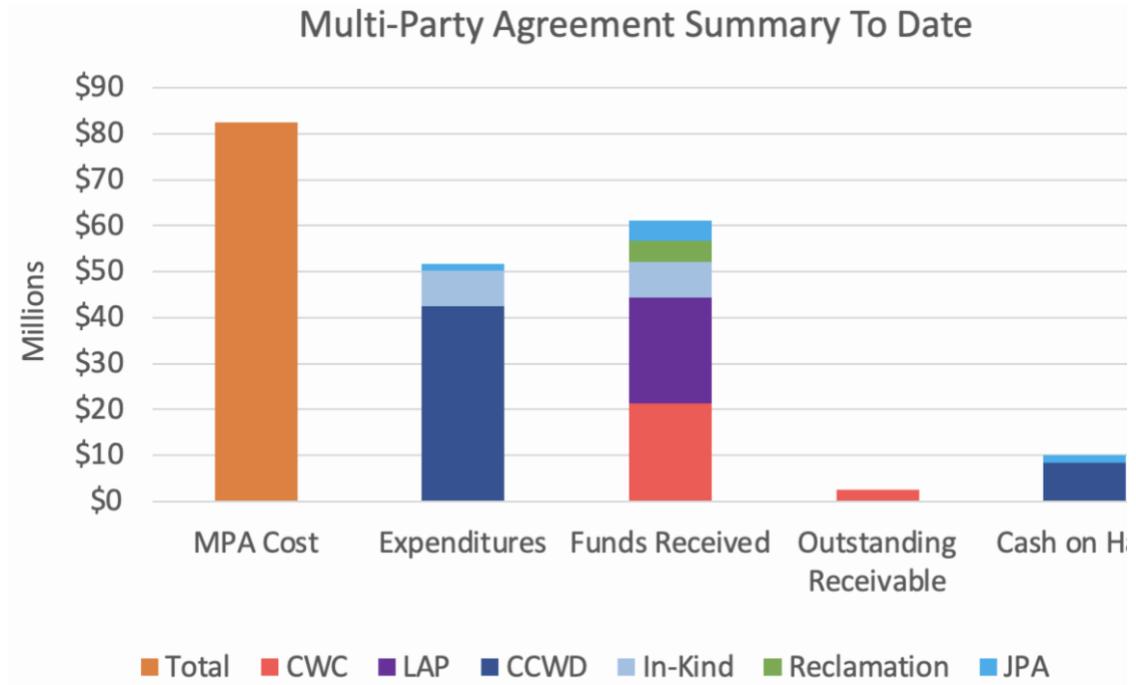


UPDATE ON MULTIPARTY COST SHARE AGREEMENT

Amendment No. 5 to the Multi-Party Cost Share Agreement (MPA) has been fully executed by the JPA and all Member Agencies. All payments have been received for the first round of Member Agency funding. The second invoice was sent to each Member Agency in mid-December 2023 with a scheduled due date of February 29, 2024.

As a result of the additional time required to enter into project agreements and obtain full funding approval from the California Water Commission, the JPA has developed a comprehensive near-term schedule that reflects a delay in project implementation. The schedule has been submitted to the Member Agencies for review, and the JPA continues working to ensure sufficient interim funding for project activities.

The following chart provides an overview of the MPA expenditures through December 31, 2023, as well as in-kind services, funds received, outstanding receivables, and cash on hand.



JANUARY BOARD OF DIRECTORS MEETING RECAP

On January 10, the JPA Board of Directors met in person at Zone 7 Water Agency. Action items included the election of Angela Ramirez Holmes (Zone 7 Water Agency) as the Chair and Anthea Hansen (San Luis & Delta–Mendota Water Authority) as Vice Chair for 2024. The Board also received updates on program management, budget, permitting, agreements, and design. The next JPA Board Meeting is scheduled for February 14 at Zone 7 Water Agency. In accordance with the Brown Act, the meeting agenda packet will be posted on the [JPA website](#) in advance of the meeting.

SUBMISSION AND REVIEW CONTINUE FOR PROJECT PERMITTING

U.S. Fish and Wildlife Service supervisory staff continue reviewing the draft Biological Opinion for construction activities.

Reclamation is working to finalize the Memorandum of Agreement required under Section 106 of the National Historic Preservation Act, with execution anticipated in the coming months. Additionally, Reclamation is continuing to define the timing and path forward for the Record of Decision.

California Department of Fish and Wildlife (CDFW) continues work on the Incidental Take Permit (ITP) for construction and the Lake and Streambed Alteration Agreement for construction activities. The JPA Member Agencies transmitted a letter to CDFW supporting Contra Costa Water District's (CCWD) counterproposal to the administrative draft ITP for operations. CDFW considered the counterproposal and issued a second administrative draft to CCWD. CCWD is currently reviewing the second draft and will continue communications with CDFW.

The U.S. Army Corps of Engineers continues work on the Section 404 permit and associated Decision Document.

JPA AND CCWD CONTINUE TO COORDINATE ON DESIGN AND ENGINEERING EFFORTS

Revisions to the draft preliminary design report and drawings for the Transfer-Bethany Pipeline (TBPL) are in progress. Seismic refraction surveys are being conducted and will be completed in January, and the draft data report for the first phase of geotechnical investigations is being developed. A response letter will be sent to the California Department of Water Resources (DWR) describing how their comments on the Turn-In design will be addressed. If approved, no further Turn-In design work will be required in advance of entering into the Turn-In Agreement. The draft Turn-In Agreement is also being reviewed by DWR.

Design of Pumping Plant No. 1 Replacement (PPI) continues. A technical memorandum outlining the recommendation to encase the Rock Slough Fish Screen afterbay to prevent aquatic vegetation growth and protect the new pump station will be submitted to the JPA for review in January.

The dam inundation study was revised to address comments and submitted to the Division of Safety of Dams (DSOD) for their records in December 2023. DSOD continues to review the drawings and technical specifications that were submitted for their approval in December 2023.

Implementation of the Project Management Information System (PMIS) continues, including design and system configuration for the various projects, facilities, and budgets.

UPCOMING MEETINGS

February 14 – 9:30 a.m.
JPA Board Meeting (Zone 7
Water Agency)

February 22 – 10 a.m.
JPA Finance Committee
Meeting (Virtual)



ADDITIONAL PROJECT INFORMATION

losvaquerosjpa.com
ccwater.com/lvstudies

Maven
Press Release
February 5, 2024

Contact:

Tom Stokely
tgstoked@gmail.com
(530) 524-0315

Trent Tuthill
ttuthill@trinitycounty.org
(530) 623-1382

C-WIN: Trinity River: The glaring omission in the State Water Board's Bay-Delta Plan Update

Proposed Changes Ignore the Contributions and Needs of the Trinity River, Imperiling Salmon, Native Communities, and North State Fishing Economies

A not-so-funny thing happened when the State Water Resources Control Board decided to update its Bay-Delta Plan, the document that authorizes protective temperature ranges and flow requirements for the Sacramento and San Joaquin Rivers and their shared Delta. Dubbed Phase 2, the proposed plan inexplicably omits protection for a major source of water for the Bay-Delta system: the Trinity River.

The Trinity is the largest tributary to the Klamath River and is critical habitat for some of the state's last wild salmon – fish that are essential to the food supply and culture of some of California's largest Native tribes and a lynchpin of the commercial fishing and sport angling industries. While it is not in the Sacramento-San Joaquin watershed, the Trinity contributes on average over 600,000 acre-feet of water annually to the Sacramento River via three reservoirs and two tunnels.

“Under the State Water Resources Control Board's authorization, the U.S. Bureau of Reclamation diverts a tremendous amount of water to the Sacramento River from the Trinity,” says Tom Stokely, a water policy and fisheries expert and a Board Member of the California Water Impact Network. “Most of that water is sent to corporate farms in the Central Valley for export almonds and pistachios. And each year, those diversions drain the cold-water supply in Trinity Reservoir, which the river's salmon need for survival.”

The Trinity was once one of the greatest salmon-producing rivers on the West Coast, and it is also essential for the health of the Klamath River's salmon runs, Stokely says. He characterizes the river as “the cold water tap for the entire Klamath Basin,” making it a critical component of the Pacific Northwest's salmon biomass and the industries that depend on it.

“It's also a social equity issue,” Stokely says. “Three major California tribes – the Yurok, Hupa and Karuk – live along the Trinity and Klamath Rivers. Salmon are essential to these

communities for both subsistence and ceremonial reasons, and protection of the fish is mandated by state and federal law.”

Given the significance of the Trinity River to the Bay-Delta system and the North State’s economy and environment, its exclusion from the State Water Board’s Bay-Delta Plan update is mystifying, says Stokely.

“It’s shocking that the Board decided against recommending specific protections that would safeguard the Trinity’s fisheries,” Stokely says. “It even identified impacts to the Trinity but offered no proposals for mitigation. It’s as though the Trinity doesn’t exist, so the Board doesn’t have to bother with any protective measures whatsoever. It’s a forgotten river.”

Trent Tuthill, Trinity County’s Administrative Officer, emphasizes the significance of the Trinity River to both the county and the northwest quadrant of California.

“The Trinity River has always been the life blood of Trinity County, and its importance to the entire Klamath River Basin must be elevated so decision makers understand that,” says Tuthill. “Our county’s natural resources are undervalued by the regulatory agencies, and we intend to hold them accountable.” Unfortunately, continues Stokely, a dismissive attitude from the Board and the Bureau of Reclamation is nothing new. Both have long ignored their legal and public trust obligations to the Trinity River, treating it as a mere spigot for corporate agriculture.

“But that has to change,” Stokely says. “We’re at a critical pass with the Trinity. The salmon are crashing, the river and the people who depend on it are on the ropes, and it’s time the Board acknowledges its obligations. Without the inclusion of safeguards – temperature requirements that are protective of salmon – the Phase 2 Bay-Delta Plan is a flawed and inadequate document. The Board must act in good faith, revisit Phase 2, and do what’s right for the Trinity River and the Californians who depend on it.”

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Sierra snowpack is below average. What it means for water users in Stanislaus County

Modesto Bee | February 1, 2024 | John Holland

After a slow start, Modesto's rain now exceeds the average, but snow in its mountain watershed continues to lag.

The Modesto Irrigation District has recorded 7.45 inches of rain at its downtown office as of 10 a.m. Thursday. Its water year starts July 1, but the storms happen mainly from November through March. MID has a historical average of 6.79 inches of rain by this point in winter. An average year brings a total of 12.17 inches.

MID and nearby water suppliers rely mainly on the central Sierra Nevada snowpack. It was 52% of average as of Thursday, the California Department of Water Resources reported.

The good news? Water stored in reservoirs is well above average, thanks to last winter's massive storms. That could mean no major cutbacks for many cities and farms as demand peaks from spring to fall.

The recent storms have been warmer than average, State Climatologist Michael Anderson said in a DWR news release. That means less snow than a year ago, "once again demonstrating how California can swing from one extreme to another," he said.

WATER RIGHTS VARY AROUND VALLEY AND STATE

In any year, the water outlook varies for suppliers around the state based on river rights and access to reservoirs.

MID and the Turlock Irrigation District have senior rights to the Tuolumne River and own one of the state's largest reservoirs, Don Pedro. It was at 81% of capacity as of Thursday and at 115% of average for this time of year.

That carryover from last year would help MID and TID meet demand even if the rest of winter is drier. The districts irrigate large farmland expanses and supplement groundwater tapped by residents of Modesto, Ceres and Turlock.

On the Stanislaus River, storage in New Melones Reservoir was at 83% of capacity as of Thursday. It held 143% of the average water for this time of year. The senior rights are held by the Oakdale and South San Joaquin irrigation districts. The latter also provides part of the drinking water for Escalon, Lathrop, Manteca and Tracy.

It usually takes multiple below-average years to trigger cutbacks in MID, TID, OID and SSJID. Even then, most of the water continues to flow thanks to the sheer size of Don Pedro and New Melones.

WEST SIDE WATER CAN FLUCTUATE MORE

Water is trickier for the West Side of Stanislaus County, which is supplied mainly by federal water pumped from the Sacramento-San Joaquin Delta.

The contracts for many districts can mean zero water from the Central Valley Project during droughts. It can be reduced even in somewhat wetter times to protect fish from the delta pumps.

Four districts get most of their water even in drier years because of a 1930s agreement preceding the CVP's construction. They gave up their rights to direct use of the San Joaquin River in exchange for priority in the federal contracts. The largest is the Central California Irrigation District.

The CVP has not yet announced its water allocations for 2024. The initial estimate is made in February and can increase if March brings above-average storms.

This winter has brought El Niño, a warming of Pacific Ocean water near the equator that can send storms to California. DWR Director Karla Nemeth noted that it has had only modest impact so far.

"Californians must prepare for all possible conditions during the remaining months of the rainy season," she said.

###

California's Largest Reservoir Nears 7-Year Milestone as Water Levels Rise

Better Planet | February 1, 2024 | Anna Skinner

Water levels at Lake Shasta have climbed significantly over the past 10 days, spurring hopes that California's largest reservoir could hit a milestone it hasn't seen for seven years: dam spillover.

After years of drought, the lake's water levels reached near capacity last year following an abnormally wet winter. Water levels steadily declined throughout the fall but have since started to rise again after a series of atmospheric rivers dumped excessive rain in the area. The levels have risen 12 feet since January 19 and might continue to climb this week after another storm arrives on Wednesday.

Despite the lake's recovery, officials haven't needed to open the dam's spillway since 2017.

Now, at just over 1,028 feet, Lake Shasta's water levels are more than 40 feet higher than this time last year. However, the last measurement was taken on January 24, meaning the water levels could be even higher as of Monday.



Lake

Lake Shasta, California's largest reservoir, is seen with historically low levels in 2015. The lake jumped 12 feet in a little over a week this month after a series of storms. GETTY

Lake levels peaked last year at 1,064 feet in late May, 3 feet below full pool, before beginning a steady decline throughout the summer. Levels began slowly rising again in December before they experienced the steep jump in the last few weeks.

If the lake rises by another 39 feet, it will reach full capacity. The gates at Shasta Dam have been raised to prevent any spillover, and U.S. Bureau of Reclamation (USBR) officials don't expect the spillway to be breached, KRCR-TV reported.

"We still have room in the reservoir for flood control," Don Bader, USBR area manager, said in the report. "So we still have another 10 feet of room that we can have more storms come in before we would start flood operations."

USBR spokesperson Mary Lee Garrison-Knecht told Newsweek that beginning on Tuesday, the USBR will increase releases "at Shasta and its regulating reservoir...for storage management."

Bader said he is being conservative with any speculation about how much the water levels will rise because precipitation isn't consistent in the winter, even though the lake looks good right now.

However, others cling to hope that the lake will keep rising.

"Lake Shasta 3/4 full. Confidence builds that reservoir will fill up this year," a social media user posted on X, formerly Twitter, on Thursday. "The water level in the lake is up 12' in just over a week, bringing it under 10' from where officials will start increasing flows from the dam."

The incoming atmospheric river is expected to hit northwestern California by midweek and move down the coast throughout the rest of the week. Forecasts predict that there will be widespread rain of at least 1 inch in much of California, but predictions are still uncertain given that the storm won't arrive until Wednesday.

###

Here's where California's snowpack stands with winter half over

San Francisco Chronicle | January 30, 2024 | Kurtis Alexander



People navigate through snow at Donner Summit California State Snopark in Nevada County in January. The state's snowpack is roughly half of where it normally stands by mid-winter, and the incoming storm is not expected to radically change things. Stephen Lam/The Chronicle

California has received barely half of the snow it typically gets by this point in winter, reinforcing concerns of a "snow drought" as the wet season moves into its second half and time grows shorter to produce cold, powder-producing storms.

State water officials reported 52% of average snowpack across California's high country in the second snow survey of the year on Tuesday, a day before a major storm was forecast to bear down on the state and at least slightly improve prospects for the season, particularly in the southern Sierra Nevada. Another big storm is expected to arrive Sunday.

Snow in the Sierra, southern Cascades and Trinity Mountains is vital for California, providing nearly a third of the state's water. Below-average snowpack bodes poorly not just for municipal and agricultural water supplies but for forest health and wildfire danger.

"There's always a chance of catching up," said Jay Lund, vice director at the Center for Watershed Sciences at UC Davis and a professor of civil and environmental engineering. But "it would be very hard for it to be a very wet year."

Federal forecasting models indicate that at least the next two weeks will be wet, and snowy, with a major atmospheric river-fueled storm arriving Wednesday. In fact, state officials moved up their manual February snow measurements, originally scheduled for Thursday, by two days because of the expectation of blustery conditions. The coming weather, however, is unlikely to undo the snow deficit that has emerged across much of the West.

Lund and other water observers say several big storms, like the one forecast this week, would be necessary over the next two months to bring precipitation levels up to average by the end of the season.

Many experts had high hopes for California's water year. They anticipated myriad fronts moving in from the Pacific as strong El Niño conditions developed in the tropics. A handful of storms in January brought improvement to the snowpack since measuring only 25% of average at the start of the month. Several ski resorts fully opened after early-season delays.

Still, January's weather did only so much.

"Most of the storms we've seen this year have been on the warmer side," said Sean de Guzman, with the Department of Water Resources. "Even though the storms during January slightly helped out with our snowpack, we're only about halfway of where we should be for this time of year."

Guzman took manual snow measurements Tuesday at Phillips Station, south of Lake Tahoe, one of more than 200 locations where the state monitors snow levels. At the site, the water content of the snow — a metric the state uses to gauge water supplies — was 58% of average.

Meanwhile, snowpack in California's far north logged just 60% of average, the central Sierra had 53% of average and the southern Sierra had 35% of average, according to the state's electronic snow sensors.

Rainfall this winter has been slightly better than snowfall. An all-important index that measures rain where the biggest reservoirs are counts 78% of average precipitation at this point in the wet season.

Snow, though, plays a distinct and critical role. It melts when the precipitation stops, usually starting around April or May, and can fill reservoirs as well as nourish wildlands and moderate fire risk well into summer. Snowfall has been an increasing concern because of the warming atmosphere with climate change, which means less of it.

Last year at this time, amid one of the wettest winters in modern history, statewide snowpack measured 216% of average. The big winter was an anomaly that followed three years of severe drought — not unusual given California's boom-and bust climate cycle.

The boom last year will provide some cushion should this winter stay dry. The state's largest reservoirs, as a result of the heavy runoff in 2023, remain fuller than they typically are at the end of January. Shasta Lake contained 122% of its average water and Lake Oroville held 132% as of last weekend.

"For the big systems, this is good news," said Lund, of UC Davis.

However, for communities and agricultural regions that rely on smaller reservoirs, which don't hold much carryover water from year to year, the situation is not as secure. Also, many areas dependent on groundwater still face challenges because of overpumping. This is particularly true in the southern San Joaquin Valley.

"California doesn't behave as one hydrological region," Lund said. "The most vulnerable parts of the state still have not recovered from the (recent) drought."

The state's wildlands, which have seen high levels of tree mortality and increases in wildfire, will continue to benefit from last year's wet weather.

"We still have plenty of moisture around," said Andrew Schwartz, station manager and lead scientist at UC Berkeley's Central Sierra Snow Laboratory. "It should help us avoid some drought stress and heat stress in the ecosystems moving forward in the summer."

Beginning on Wednesday and continuing through Friday, 1 to 2 feet of snow is forecast to fall above 7,000 feet across much of the Sierra, according to the National Weather Service. Snow levels will drop as the storm trends cooler as the weekend approaches. The weather service also warned of "hazardous" conditions, including possible landslides and flooding in parts of California.

But, Schwartz said the coming system won't do too much more than keep the state's snow deficit from growing.

Forecasters with the federal government's Drought.gov, a collaboration of nationwide forecasters, have expressed similar skepticism about closing the gap soon.

"Conditions in the Sierra Nevada were quite dry over the past month, with snow drought remaining firmly in place across the range," the collaborative's Jan. 10 report said. "A few small-to-moderate storms occurred over the past month, but larger atmospheric river storms with substantial moisture were absent."

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SECOND SNOW SURVEY SHOWS MODEST IMPROVEMENT FOR SNOWPACK

ACWA | January 30, 2024 | ACWA News

SACRAMENTO – The Department of Water Resources (DWR) today conducted the second snow survey of the season at Phillips Station. The manual survey recorded 29 inches of snow depth and a snow water equivalent of 10 inches, which is 58 percent of average for this location. The snow water equivalent measures the amount of water contained in the snowpack and is a key component of DWR’s water supply forecast.

Today’s results reflect a modest increase in the snowpack since January 1, but overall conditions are still far below normal. DWR’s electronic readings from 130 stations placed throughout the state indicate that the statewide snowpack’s snow water equivalent is 8.4 inches, or 52 percent of average for this date, an improvement from just 28 percent of average on January 1. One year ago, the snowpack statewide was 214 percent of average on February 1.

“This year’s El Niño has delivered below average precipitation and an even smaller snowpack,” said DWR Director Karla Nemeth. “Californians must prepare for all possible conditions during the remaining months of the rainy season.”

Despite additional precipitation in January, many storms so far this year have been warmer than average, producing rain rather than snow at higher elevations. Overall statewide precipitation is 82 percent of average for this date. Last year’s snowpack was aided by both above average precipitation and below average temperatures, which created a historic snowpack and improved reservoir storage statewide, which is still above average. Lake Oroville, the State Water Project’s largest reservoir, is currently 76 percent of average.

“Despite strong El Niño conditions in the Pacific Ocean, a high-pressure system and several other climate factors have led to below average conditions so far and most storm impacts have been focused along the coastal regions,” said Dr. Michael Anderson, State Climatologist with DWR. “Many of these storms have also been warmer than average and produced more rain and less snow, a far cry from last year’s near-record snowpack and once again demonstrating how California can swing from one extreme to another.”

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Sierra Nevada snowpack triples in past month, more storms on the way

Atmospheric river storm to hit Bay Area Wednesday and boost mountain snow, which is below normal but trending up

Mercury News | January 22, 2024 | Paul Rogers



In this photo provided by the Mammoth Mountain Ski Area, snow falls around a lodge and lifts in Mammoth Lakes, Calif., Monday, Jan. 22, 2024. (Christian Pondella/Mammoth Mountain Ski Area via AP)

California ushered in the New Year with a dry and disappointing snowpack in the Sierra Nevada — just 25% of the historical average.

But in the month since, like the stock market and the 49ers playoff hopes, the picture has improved significantly. On Monday, the snowpack, a vast 400-mile long frozen reservoir that provides nearly one-third of the state's water supply, had jumped to 52% of normal, boosted by several big storms that have taken ski resorts out of the doldrums in recent weeks and tempered talk of a 2024 "snow drought."

"We've come a long way from where we were at the beginning of the month," said Andrew Schwartz, lead scientist at the UC Berkeley Central Sierra Snow Laboratory near Donner Summit west of Lake Tahoe.

Between Oct. 1 and New Year's Day, just 35 inches of snow fell at the UC snow lab site, off Interstate 80. On Monday, that seasonal total had grown to 105 inches. For that location, at

nearly 6,900-foot elevation, Monday's total is 61% of the historical average — a number that while below normal is expected to grow in the coming days.

"There's still some hope we are going to see a wetter pattern the first few weeks of February," Schwartz said.

California's water officials on Tuesday will tromp out to Phillips Station near Sierra-at-Tahoe ski resort to take their second monthly manual snowpack reading of the season — a largely ceremonial event in an age when snow gauges across the Sierra provide digital readings every day.

A significant storm system is forecast to hit Northern California and the Sierra from Tuesday night through Friday, with chances of another rolling in Sunday and next Monday.

"It will be on the higher side of the storms we've seen this year," said Katrina Hand, a meteorologist with the National Weather Service in Sacramento. "You could see ponding of water on the roads this week, some creeks rising to near flood stage. And it will bring more snow to the Sierra."

The storm, an atmospheric river from Hawaii that is expected to be a 2 on a scale of 1 to 5 — with 5 being the strongest — is forecast to dump 1 to 3 inches of rain across much of the Bay Area by Friday. About 3 to 5 inches is expected over the North Bay, and up to 4 to 6 inches is forecast for the Santa Cruz Mountains and Big Sur.

The heaviest day will be Wednesday with chain controls expected throughout the Sierra and gusty winds forecast to reach 50 mph or more.

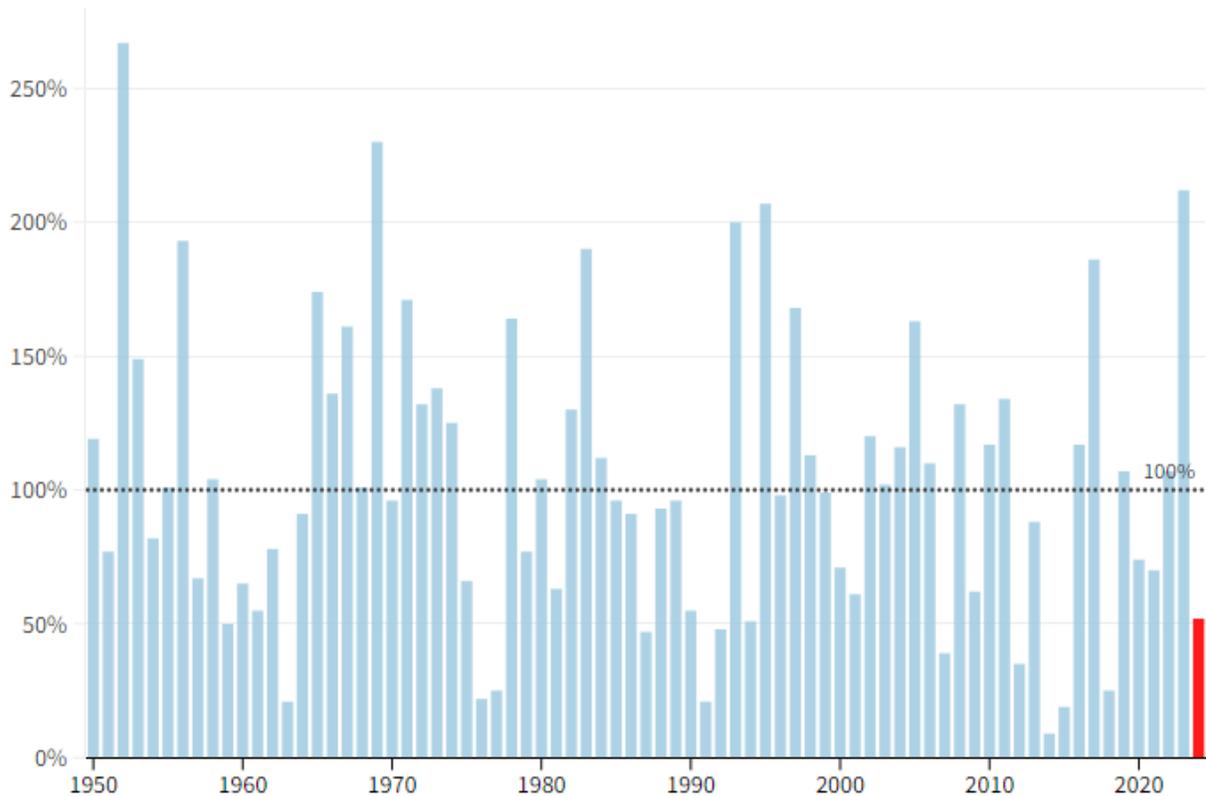
By Friday, the storm is forecast to bring up to 2 feet of new snow to the Lake Tahoe area, up to 3 feet farther south at Sonora Pass, and up to 5 feet on Mount Lassen.

California often experiences big swings in the amount of rain and snow it receives each year.

"Every winter, water managers are biting their nails and investing in Pepcid," said Felicia Marcus, a visiting fellow at Stanford University's Water in the West Program. "The start to this winter was anemic, but right now it's pretty OK."

As the Earth continues to warm from climate change, scientists say that California is seeing more "weather whiplash" between very dry and very wet years. Eight of the past 12 years have been drought years in the state, punctuated by some drenching years (2017, 2023).

Last year, a series of huge atmospheric river storms battered California, ending the state's severe 2020-22 drought. Last Feb. 1, the Sierra snowpack was a staggering 212% of normal. By April 1, it was the biggest snowpack in 40 years, at 232% of the historical average. A few ski resorts stayed open until the Fourth of July last year.



Source: [Calif. Dept. of Water Resources](#) • Graphic by Bay Area News Group

The fact that this year has begun much more modestly is in many ways a good thing, experts said Monday.

Reservoirs around the state filled last year because of the relentless rain and in many places are still above average for this time of year. If this winter had started with a new series of big atmospheric river storms, it could have filled them to the top, causing flooding downstream.

“You don’t want to fill them up this time of the season, because if the storms come in faster than you were expecting, then you have a flood risk,” Marcus said. “Droughts are bad, but floods kill people.”

Reservoir operators around the state, working off historical records showing the probability of rainfall each day of the winter, release more water out of reservoirs early in the winter between November and February, and then typically begin to capture more in March as the winter winds down and melting snows flow in from rivers, adding more water into the reservoirs.

Even with that conservative approach, some of California’s biggest reservoirs have seen impressive gains this past month as January storms have swept across the state.

The water level at Shasta Lake, the state's largest reservoir, near Redding, which is 35 miles long, has risen 20 feet since Jan. 1. A critical source for farms and cities, it was 79% full on Monday — 112% of normal for this date.

Similarly, the state's second largest reservoir, Oroville, in Butte County, has risen 23 feet since Jan. 1, and on Monday was 76% full — 132% of normal for this date.

One of the most important reservoirs in Southern California, Diamond Valley Lake in Riverside County, on Monday was 93% full, a big shift from a year ago when it was 61% full.

Unless all the rain and snow turns off completely starting in mid-February, California should be in decent shape from a water supply standpoint this summer, experts said Monday, with the chances of urban water restrictions low.

"I think this year we are probably going to be OK," Marcus said. "But we never want to waste water, because next year could be the beginning of a 10-year drought."

###

San Joaquin Valley Stakeholders Contest State Water Board's Bay Delta Plan Update

The Water Blueprint for the San Joaquin Valley criticizes the State Water Resources Control Board's draft report for underestimating water availability and potential bias against the region. The report's proposed Unimpaired Flow Objectives could significantly reduce water supplies, impacting agriculture and the socioeconomic health of the Valley.

The People's Network | February 8, 2024 | Dil Bar Irshad



San Joaquin Valley Stakeholders Contest State Water Board's Bay Delta Plan Update

The State Water Resources Control Board's draft report, designed to update the Bay Delta Plan, has sparked a wave of criticism over its potential impacts on the San Joaquin Valley. A coalition of regional stakeholders, known as the Water Blueprint for the San Joaquin Valley, argues that the report's proposed Unimpaired Flow Objectives (UIF) from tributaries will lead to significant water supply reductions. This, in turn, could adversely affect the region's agricultural sector and overall socioeconomic health.

Underestimating the Valley's Water Supply

One of the major criticisms levied against the report stems from the claim that it underestimates the water available to the Valley by 300,000 acre-feet. This miscalculation could lead to an erroneous perception of water scarcity and potentially biased policy decisions against the region. The report's assumptions are also under fire for being inconsistent with other statewide objectives.

Disregarding Biological Opinions and Export Limits

The Blueprint has further criticized the report for neglecting to factor in recent biological opinions and the Incidental Take Permit's export limit. The oversight could result in a 10-15% reduction in

water allocation for Central Valley Project agricultural contractors, dealing a significant blow to the region's agricultural sector.

Unfeasible Mitigation Suggestions

The Blueprint also challenges the feasibility of the report's mitigation suggestions, such as diversifying the water portfolio and increasing water transfers. These suggestions may not be feasible due to existing regulations and infrastructure limitations. There are also concerns about the negative impact of reduced surface water supplies on groundwater management under the Sustainable Groundwater Management Act (SGMA).

Anticipated Socioeconomic Consequences

The Blueprint warns of dire socioeconomic consequences in the wake of these water supply reductions. It predicts increased land fallowing, job losses, and economic downturns, further exacerbating the region's struggles. In light of these concerns, the Blueprint has called for an evaluation that accurately assesses the impacts of both the proposed flow objectives and SGMA implementation.

###

BLUEPRINT RESPONSE TO STATE BOARD DRAFT REPORT, FEBRUARY 7, 2024

Water Wrights | February 7, 2024 | Don Wright



Proposals contained in a draft report prepared by the State Water Resources Control Board staff recommending updates to the Bay/Delta Plan have triggered warnings of extensive harm due to bias against the San Joaquin Valley and its people. The draft report can be a tough read with just the title and the table of contents taking up 72 pages. That's partially why it was released last year in September with a comment deadline of January 2024. It takes a while to get through.

The report is titled "DRAFT Staff Report/Substitute Environmental Document in Support of Potential Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary for the Sacramento River and its Tributaries, Delta Eastside Tributaries, and Delta."

The duties of the State Water Resources Control Board (State Board) includes, as stated in the draft report, ". . . updating the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan or Plan) to protect beneficial uses of water in the San Francisco Bay/Sacramento-San Joaquin Delta (Bay-Delta) watershed

related to water diversions and operations. The Bay-Delta Plan identifies beneficial uses of water to be protected in the Bay-Delta watershed; narrative and numeric, including flow and salinity, water quality objectives for the reasonable protection of those beneficial uses; a program of implementation to achieve the objectives; and monitoring, evaluation, and special study provisions to evaluate and inform planning and implementation.”

The Water Blueprint for the San Joaquin Valley is a coalition of San Joaquin Valley community leaders, businesses, water agencies, local governments, and agricultural representatives working together to advance common sense water solutions and to improve socioeconomic health for the Valley’s residents. Lidco Inc.

The Blueprint is the correct entity to evaluate and comment on proposed regulatory and often legislative offerings from the state government to help ensure the Valley isn’t treated like some red headed stepchild, third world, Appalachian afterthought. Something that happens far too often in Sacramento.

The Blueprint reviewed the draft report and came to some startling conclusions in a comment response recently submitted. For one, the report underestimates the amount of water available to the Valley by 300,000 acre feet.

The State Board is limited in its response to regulating flows through the Delta. It can turn water on and off. The more water it directs through the Delta the less water is available for use in other areas of the state. This is known as the Unimpaired Flow Objectives. State Board staff wants more water flowing out to sea. This additional UFO, whoops sorry it’s referred to as UIF in the report, comes from tributaries along the San Joaquin River – the Merced, Tuolumne and Stanislaus Rivers. Brandt Water Treatment

The UIFs are cited by the Blueprint as of particular concern, “Although the Draft Staff Report contains significant information on hydrology, water supply, and agricultural resources, it presents that information in a disjointed manner and is based on inaccurate or inconsistent assumptions.”

It goes on to state, “. . . adoption of the UIF alternative is inconsistent with other statewide policy objectives advanced by the Newsom Administration, including the human right to water, advancement of the coequal goals, and implementation of the Water Resilience Portfolio and Water Supply Strategy.”

An analysis of surface water supplies included in the draft staff report was called out as inaccurate as it was based on Delta operations from biological opinions from 2008 and 2009. This analysis is called inaccurate because the description of existing water supplies didn’t take into account the modifications imposed on the Central Valley Project and the State Water Project by the more recent 2019 biological opinion.

Proposed water supply reductions to the Valley through the CVP and SWP were significantly underestimated in the draft staff report based on an erroneous assumption based on the 2020 Incidental Take Permit's I:E export limit. This I:E is an inflow-to-export ratio that limits surface supplies available to the Valley.

The Blueprint response, "The magnitude of this underestimation is significant; in some below normal and above normal years, it could be as much as 300,000 acre-feet. For south-of-Delta Central Valley Project agricultural contractors, this represents a potential 10-15% reduction in their contract allocation."

The Blueprint response had in its footnotes the staff draft report didn't uniformly set the limits, including the CVP but not others and potential socioeconomic impacts were "likely significantly underrepresented."

Impacts on Agriculture

The draft staff report included a chapter "Agriculture and Forest Resources" which describes potential impacts from the UIFs to prime, unique and farmland of statewide importance. It states, ". . . reduced water availability decreases agriculture's profitability by increasing the price of water, reducing the land's productivity, or both, the economic incentive to convert to urban use could grow."

The report got that right, and wrong. In 2015, a dry year 522,000 acres were fallowed in the San Joaquin Valley due to inadequate water supplies compared to 2011, a wet year. UIFs will exacerbate an already dire situation.

The Blueprint states the draft staff report, ". . . fails to appropriately characterize the disparate impact of reductions in Sacramento/Delta surface water supply to differing regions of the San Joaquin Valley."

The staff draft report states, "While the reductions in Sacramento/Delta surface water supply represent a substantial amount of water, when compared with the total San Joaquin Valley region average annual supply of over 18.4 MAF as estimated by historical water deliveries data, the reductions are proportionally smaller. The reductions in total supply amount to 1 percent and 2 percent in the 45 and 55 scenarios, respectively (see Table 6.4-1)."

The Blueprint points out the most vulnerable areas for urbanization are being placed at greatest risk due to the reduction in surface supplies impacting the CVP and SWP along the Valley's westside. The area served by the northern portion of Delta Mendota Canal is particularly ripe for equity refugees from the San Francisco Bay Area.

Mitigation Measures

The draft staff report lists measures that might mitigate the reduced water supplies from UIFs. It suggests diversifying the water portfolio with sustainable conjunctive use of ground and surface water, recycling, conservation, efficiency upgrades and water transfers.

The Blueprint response voiced some doubts. It said large parts of the San Joaquin Valley is unlikely to benefit from the actions described. Mostly, if not entirely because sustainable conjunctive use depends on surface water supplies. During wet years irrigation and recharge of surface water is the only way to provide sustainable groundwater for the dry years when pumping is necessary. The reduced water transfers from the Delta to the CVP and SWP will prevent recharge. Increased efficiency also reduces recharge. Micro irrigation supplies water to the crops' root zones and doesn't oversaturate applications to the point of recharge benefits.

The Blueprint gives an example – 2015-16 water year for the Northern Sierra precipitation index was 57.9, well above average. Yet the South of Delta allocation for CVP agricultural water contractors was five percent while the SWP allocation was 60 percent. In 2019 the index was 70.7 making it the third wettest year on record. Both the CVP and SWP only received a 75 percent allocation.

The Blueprint response, “Sound principles of conjunctive use demand that in water years like 2016 and 2019, farmers in the San Joaquin Valley rely on surface water and that surplus water be used to replenish groundwater aquifers. However, existing regulations of the Central Valley Project and State Water Project and limited water storage infrastructure already frustrate the implementation of “sustainable conjunctive use,” and each of the unimpaired flow alternatives evaluated by the Draft Staff Report will only further diminish the water delivery capability of the projects in every water year type.” Also asked, “. . . from where will the water to be transferred come and how will it be conveyed to areas in the San Joaquin Valley seeking to offset reductions in surface water?”

The Blueprint response points out the main source of water for transfers in the San Joaquin Valley comes from the Sacramento Valley. Getting that water through the Delta is already a major challenge that will only be exacerbated by the UIFs.

Three problems are pointed out; the transfer window is only open from July 1st through November 30th. Capacity at the CVP and SWP pumping plants is often limited. And biological opinions for long-term CVP and SWP operations limit Sacramento River transfer water pumping to 360,000 acre feet during below normal, normal and wet years. The very types of years when the Sacramento water is available.

The Blueprint is also concerned the UIFs will further limit CVP and SWP operations. The draft staff report doesn't really address how transfers could play any meaningful role, “It is difficult to predict with certainty how reduced Sacramento/Delta surface water supplies will affect water transfers. With new instream flow and cold water habitat requirements, overall supplies of water from the Sacramento/Delta will decline. This may result in less water available for transfer. At the same time, it could incentivize transfers as the value of transfer water increases, leading to transfers from lower value temporary crops to higher value municipal uses and permanent crops.”

It's a conundrum, how will further limiting transfer supplies help mitigate limited transfer supplies? The Blueprint response, ". . . it is not difficult to predict with certainty how reduced Sacramento/Delta surface water supplies will affect water transfers to areas in the San Joaquin Valley presently benefiting from transfers. New instream flow and cold water habitat requirements that result in Sacramento/Delta surface water supply reductions in the Sacramento River watershed of the magnitude reflected in Table 6.4-2, (Draft Staff Report, pg. 6-57), will result in a significant decrease in water transfers to south-of-Delta areas served by Sacramento/Delta surface water."

Water conservation is another method listed in the draft staff report. The San Joaquin Valley's largest water district, Westlands is already at a 96 percent water use efficiency. And most of the Valley isn't far behind. At a certain point the law of diminishing returns kicks in. It's doubtful the expense of capital and effort of additional measures to increase efficiency another four percent will yield any realistic benefit. The reduction in recharge would be an unintended consequence.

On that note the Blueprint states, "Importantly, the Draft Staff Report is confusing because it suggests that increased reliance on groundwater pumping may offset surface water supply reductions, but it then goes on to note that the implementation of the Sustainable Groundwater Management Act ("SGMA") may restrict the use of groundwater to offset these reductions. (Draft Staff Report, pgs.6-80 – 6-81.) Herein lies one of the biggest challenges in the analysis contained within the Draft Staff Report; it fails to sufficiently evaluate the effects of simultaneously implementing the proposed unimpaired flow objectives and implementing SGMA."

SGMA Impacts

The Sustainable Groundwater Management Act by itself will bring significant socioeconomic and environmental impacts to the San Joaquin Valley. In February, 2020 a study by Drs. David Sunding and David Roland-Holst, UC Berkeley entitled "Blueprint Economic Impact Analysis: Phase One Results" paints a grim picture of increased land fallowing and retirement resulting in reduce crop production, job losses and economic disruption to the San Joaquin Valley. The Blueprint states enacting the recommendations of the draft staff report will exacerbate the project removal from production of one million acres or more of farmland and 42,000 jobs in the Valley with economic losses exceeding \$7.2 billion annually.

An additional 2022 study by Dr. Michael Shires, Pepperdine University entitled, "The Economic Impact of the Westlands Water District on the Local and Regional Economy: 2022 Update," states, "Perhaps even more importantly, the overall trend of these poverty levels moves concurrently with the reductions in water deliveries from the CVP to the Westlands Water District."

The draft staff report acknowledges under the Porter-Cologne Water Quality Control Act the State Board is required to consider economic impacts. The draft staff report includes a cumulative impact analysis but it finds the impacts of implementing SGMA are "speculative."

Air Quality Impacts

The Blueprint response claims the draft staff report mischaracterizes the public health impacts on Valley residents. Implementing the UIFs, diminishing the surface water supplies and fallowing land will create significant exposure to fugitive dust. This dust can be hazardous.

The draft staff report states, “Naturally occurring asbestos and Valley fever are endemic to areas within the study area (i.e., mountain counties and the Central Valley, respectively). The potential for exposure to Valley fever exists in agricultural areas, such as the southern portions of the San Joaquin Valley, where reported Valley fever cases have historically exceeded 10 per 100,000 people (CDPH 2016). Fallowed land could result in exposed soils and windblown fugitive dust, which could increase the likelihood of exposure to naturally occurring asbestos and Valley fever.”

Yet the draft staff report also maintains, “This impact would be less than significant.”

The Blueprint addresses this, “They [State Board staff] have not observed that fallowing fields results in a reduction of windblown dust. The anecdotal observations of people who live and work in the San Joaquin Valley are consistent with a recent analysis conducted by Elizabeth Ann Weaver at Virginia Polytechnic Institute and State University. In her doctoral thesis, Ms. Weaver found climate and land cover variables explain up to 76% of valley fever variability in Kern County. (Investigating the Valley Fever – Environment Relationship in the Western U.S, 2019, Virginia Polytechnic Institute and State University.) In the San Joaquin Valley, among the factors that most influence ground cover is the availability of water for irrigation.”

The Blueprint also states, “From the perspective of people who live and work in the San Joaquin Valley, any increase in the incidence of Valley Fever would be significant and contrary to public health goals advanced by the Newsom Administration.”

That statement could be paraphrased to describe the Blueprint’s priorities – from the perspective of the people who live and work in the San Joaquin Valley – cutting off water isn’t a defensible or moral choice.

###

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EPA Advocates for River Flows to The Sacramento River Delta

The Independent | February 7, 2024 | David Jen

REGIONAL — The Bay Delta Plan should focus more on the amount of water flowing through rivers and less on habitat restorations to restore its ecosystems, according to Environmental Protection Agency (EPA) comments submitted to the State Water Resources Control Board.

The Water Board, which is in the process of revising its draft Bay Delta Plan for public review, will decide what river-flow requirements and water-quality controls will govern uses within the Sacramento River watershed. The EPA's comments came as part of the plan's public comment period, which closed on Jan. 19.

The largest in the state, the watershed provides water for some two million people, including those in the Tri-Valley.

In their own written comments, environmental groups, such as Friends of the River and Restore the Delta, have pushed for increased flows in the rivers. Such flows would reverse the decline of river and delta ecosystems, which depend on the water at certain times of the year to support the different stages of fish life cycles, according to these groups.

Freshwater flows also influence algal blooms and salinity levels in the delta, which affect the communities dependent on its water, such as those in the Tri-Valley. As freshwater flows decrease, salinity rises, creating clean-water supply issues.

A Bay Delta Plan proposal from Water Board staff calls for an increase in required river flows from 40% to 55% of unimpaired flows — the river volumes that would run without human diversions.

In his written comment, EPA Water Division Director Tomás Torres said he supported using river flows as a primary objective of the plan.

“Numeric criteria serve as consistent and transparent targets to drive implementation and EPA strongly recommends that the State Water Board include numeric flow objectives in its amendments to the Bay-Delta Plan,” according to Torres.

But the California Natural Resources Agency states on its website that the so-called voluntary agreements – alternatives to the staff proposal – have advanced a more flexible approach to the watershed's management.

Voluntary-agreement proponents, including the East Bay Municipal Utility District (EBMUD) and the organization of State Water Contractors, of which the Tri-Valley's Zone 7 is a member, argue that habitat restoration projects — such as spawning gravel beds, fish passages and floodplain reactivation — in conjunction with less flows, would maximize ecosystem benefits.

“This more flexible, adaptive management is critical as climate change increases uncertainty and drives extreme conditions,” according to the Natural Resources Agency.

However, EPA’s Torres questioned the basis of the voluntary agreements.

The voluntary agreements do “not provide sufficient evidence to demonstrate that the proposed VA assets will protect beneficial uses in the Sacramento River and Delta watersheds,” according to Torres. He went on to stress river flows as the primary requirement for a healthy watershed, while voluntary agreements have focused on non-flow measures.

River flows also affect water quality in the Delta needed to supply freshwater to the Tri-Valley.

Beyond ecosystem benefits, EBMUD has also raised concerns that leaving more water in the rivers and out of reservoirs would hurt water supplies and thereby raise water rates.

But reservoirs, with their dual mandates of water supply and flood control, are forced to spill water during wet years anyway, said Peter Drekmeier of the Tuolumne River Trust (TRT). The same water released during those urgent, high-flow dumps could have been put to better use if the water had instead been spread out over several years — what the Water Board staff have proposed. In such a scenario, reservoirs would still retain enough supply while benefiting ecosystems.

“The State Water Board must lead this effort on the Bay Delta and rivers that feed it,” according to the TRT’s own comment letter. “We cannot allow our legacy to be that of the generation that allowed the ecological collapse to occur, squandering the miraculous natural resources we inherited and leaving little behind for our children.”

###

A Ranch, Rewilded: The Transformation of California's Next State Park

Floodplain restoration is one key way to make the Central Valley more resilient as climate change intensifies both flooding and drought.

Reasons to be Cheerful | January 25, 2024 | Elizabeth Hewitt



Waterline is an ongoing series of stories exploring the intersection of water, climate and food, told through the eyes of the people impacted by these issues. It is funded by a grant from the Walton Family Foundation.

On a bright morning in early January near the confluence of the San Joaquin and Tuolumne rivers in Central California, John Cain looks out over a small, curved lake. The trees are mostly bare for winter, but Cain, senior director of conservation of the nonprofit organization River Partners, points out that the wild landscape in front of him is buzzing. Bright white egrets swoop lazily down into the water while terns whiz by in the air. A California rose bush clings onto bright red rose hips. The low-lying plain across the water is dense with gray branches of adolescent trees.

For more than four months last year, as California was inundated with a series of major storms, this part of Dos Rios Ranch Preserve, about 20 miles west of Modesto, was submerged under water. That's exactly what it was designed for. And when the floodwaters recede, Cain says, "It's just an explosion of life out here."

Until a little more than a decade ago, this area was productive farmland, used for growing crops like tomatoes, alfalfa, melons and almonds. Now it's set to be California's next state park after a restoration project spearheaded by River Partners converted the ranch into rewilded riverside habitat. As climate change has doubled the likelihood of flooding in California, and is projected to increase runoff from storms by as much as 200 to 400 percent, this restored floodplain is proving to be a promising approach.

Not only does the area help buffer downstream communities from flood damage, it also maximizes environmental benefits from high waters.

“When we step back from the river, when we give the river more room, flooding actually is a very productive process for the ecosystem,” says Cain.

“It recharges groundwater. It filters polluted water. It nourishes riparian forests that support all kinds of wildlife. It’s alive.”

California’s Central Valley doesn’t get much rain, but the 400-mile-long region is naturally shaped by water. Before human intervention, rivers fluctuated with flow from the towering Sierra Nevada range to the east. But over the last century and a half, rivers have been tamed by dams and constricted by levees as land was converted for agriculture and urban development. Some 95 percent of the region’s native riparian and wetland habitat has been lost.

Even as rivers have been engineered with the aim of reducing flooding, communities and farmland have remained vulnerable. Bill Lyons, whose family owned Dos Rios Ranch for about 25 years, says that it was good farmland. But he recalls three times when the ranch was impacted by major flooding, resulting in loss of crops, erosion damage, and debris scattered across farmland.



An aerial of flooded farmland in April of 2023. Heavy flooding in Dos Rios in April of 2023. Courtesy of River Partners

Lyons’ family — which has been farming for four generations and has a century of history in this region — has long been committed to stewardship of the land. They are concerned with

supporting the health of the environment, he says. So the family was interested when River Partners approached them about buying Dos Rios Ranch.

“We looked at it from a point of view that probably its highest and best use would be to be returned to a natural state,” Lyons says.

In 2012, River Partners purchased the property and began restoration work along eight miles of river. Berms that had been built to protect farmland from high water were removed. To date, more than 350,000 trees and shrubs have been planted. River Partners uses existing irrigation infrastructure on former farmland to help young vegetation endure hot dry summers as it gets established. About 1,600 acres have been rewilded so far, and restoration work is ongoing on another 500 acres on an adjacent former farm.



California State Parks is aiming to add Dos Rios Ranch Preserve to the state parks system later this year. Credit: Saxon Holt / PhotoBotanic

Pausing on a rough single-track road that runs atop higher ground through the preserve, Cain points out a long, shrubby-covered berm that gently slopes down to the floodplain about three yards below the road. It's a ramp designed for riparian brush rabbits, an endangered species that has moved in to Dos Rios. The slope allows them to escape to higher ground when the area floods. To the right of the ramp, birds flit between bare branches of densely planted trees. To the left, a low-lying grassy meadow is primed to take on high water. When the San Joaquin River overflows onto the field, it offers an abundant feast of zooplankton and tiny bugs for juvenile salmon, which studies show grow faster on floodplains than in the river. Instead of

aiming to benefit any single species, the restoration was geared towards creating a varied ecosystem.

“It’s a more resilient landscape that supports a greater diversity of life,” Cain says.

The preserve hosts migratory Aleutian cackling geese, a formerly endangered species that’s on the rebound.

Beavers have been spotted, as well as deer, which hadn’t been seen in this area for about 60 years, according to River Partners.

Over the last decade, the restored floodplain quickly showed signs of success in supporting wildlife. And in 2023, the area got a chance to show how it performed in heavy flooding.

Lilia Lomeli-Gil walks by piles of branches and brush a few feet away from the backyard fences of houses on the edge of the small town of Grayson, across the river from Dos Rios Ranch Preserve. The debris was left by high water last winter, she explains, as the river overflowed near this small community, home to many farmworkers.

The record-breaking precipitation that hit California last year was devastating for some communities. Thousands of people were evacuated when a levee broke along the Pajaro River, 50 miles southwest of Grayson.

In Grayson, residents watched the rising river warily. A few families evacuated out of precaution, according to Lomeli-Gil, co-founder of the Grayson United Community Center. The water came up within a couple feet of several houses, she says, but the town didn’t sustain major damage. She attributes that to the floodplain restoration work.

“I can only imagine if ... River Partners had not opened up the levees,” she says. She believes giving the water room to spread out helped the town avoid flood damage. “I think that made a difference.”

Awareness has been growing that California’s old flood management approach of confining rivers has not been working, according to Brian Johnson, a board member of the Central Valley Flood Protection Board.

But during the winter and spring of 2023, the Dos Rios project proved that floodplain restoration is an effective flood control approach.

“You need to give the water a safe place to go,” he says, “or it’ll go to a place that’s not safe.”

Across the Central Valley, similar projects are in development, he says. Cost is a limitation — the board’s recommended flood protection measures, including projects like Dos Rios, have an estimated price tag of \$25 to \$30 billion. But those measures could avoid around \$1 trillion damage from major flooding. The permitting process can also be slow and a hurdle. But

Johnson says there's a lot of opportunity to develop similar floodplain habitat restoration projects across the valley.

"In order for it to work at a system-wide scale, we want to be doing it in a bunch of different places," Johnson says.

Floodplain restoration can also help California weather drought, which is predicted to become more intense with climate change, according to Cain. Not only does growing native vegetation require less water than agriculture, when floodwaters spread across the land, the water seeps down into the groundwater, recharging overdrawn aquifers.

For all its benefits, this type of floodplain restoration isn't appropriate everywhere, according to Joshua Viers, a watershed expert at University of California, Merced. Dos Rios is well-suited because the confluence of the two rivers makes for dynamic conditions that are particularly good for habitat restoration. In other parts of this heavily agricultural region, other approaches may be more appropriate, he says. Certain crops, like grape vines, can handle some flooding, which also benefits groundwater stores. Some types of farming can be incorporated into habitat restoration; rice fields can support salmon. According to Viers, using a range of different approaches can help manage flooding and support ecosystems along California rivers.

"You can't do all things in all places," Viers says. "If you can string these together, you can have mutually reinforcing benefits."

There are also social benefits to habitat restoration: Through the Grayson United Community Center, Lomeli-Gil has been working to engage Grayson residents with Dos Rios and surrounding restored natural areas. Several locals have gotten jobs with River Partners planting vegetation. And now, California State Parks is aiming to open the new state park to the public later this year.

"It's in our backyard, so how blessed will we be," Lomeli-Gil says.

As other floodplain projects are in development across California, Dos Rios is still expanding.

Cain walks along furrows on a plowed field on former farmland adjacent to Dos Rios. Instead of crops, this plot will soon be planted with young native trees and shrubs. Cain checks little white labels on sticks that mark where each new plant will go: a Modesto ash, box elder, and, his favorite, elderberry.

Cain and his colleagues at River Partners have set a long-term goal of restoring 100,000 acres in the San Joaquin Valley. That would restore about 10 percent of the wetlands that used to be in this area.

On the other side of the bare field, two large wonky Vs of Aleutian cackling geese fly by. Even though they are hard to see from such a distance, their characteristic honks echo across the field.

#

SPOTLIGHT JAN. 2024: AGENCIES COLLABORATE ON SALMON HABITAT RESTORATION ON TUOLUMNE RIVER

ACWA Newsletter | January 19, 2024 | ACWA STAFF



Workers with River Partners plant vegetation as part of projects that restored riverine habitat along the Feather River. Photo courtesy of River Partners

The Modesto and Turlock Irrigation Districts (MID and TID) and the San Francisco Public Utilities Commission (SFPUC) are teaming up with a nonprofit organization to design and implement a collaborative, holistic habitat restoration program along the lower Tuolumne River to improve the health and long-term recovery of the fishery and local communities it serves, according to an MID news release.

The joint effort demonstrates the power of public-private partnerships in making critical, lasting improvements to

ecosystem and community health along California waterways like the Tuolumne River. The agencies are self-funding the \$80 million multi-year program and recently chose the leading California riverway restoration organization, River Partners, to lead planning and restoration efforts.

Over the next 12 months, River Partners will design a series of restoration projects along the lower Tuolumne River and its floodplain from Don Pedro Reservoir downstream to the San Joaquin River that will improve conditions for salmon and other native aquatic species. By 2030, project partners aim to develop 77 acres of suitable salmon rearing and floodplain habitat and add approximately 100,000 tons of gravel in specific river reaches for optimal salmon spawning and rearing.

River Partners will lead a multi-disciplinary team of biologists, ecologists and other technical experts, including Applied River Sciences (formerly McBain Associates), in the restoration planning and design needed to implement the comprehensive program.

MID, TID and the SFPUC chose River Partners for its long track record of innovative and effective river and floodplain restoration throughout the Central Valley and across the state, which has earned the organization numerous honors for its on-the-ground impact. Since its founding in 1998, River Partners has restored nearly 20,000 riverside acres across the Central Valley and beyond in over 20 watersheds. Its portfolio of successful projects includes creating interconnected, thriving floodplains that sustain wildlife and habitat, support Valley agriculture, preserve and replenish freshwater resources and enhance surrounding communities.

“MID is proud of our continued stewardship and commitment to the Tuolumne River and our communities that rely on it,” stated MID General Manager Jimi Netniss in the news release. “We’re eager to begin this partnership with River Partners given their rich knowledge of our watershed and impressive track record of success in procuring, designing, permitting, constructing and monitoring habitat improvement projects across California. Building upon decades of collective stewardship and Tuolumne River-specific science, together we can deliver a robust and impactful program.”

“We’re making significant investments and partnering with renowned experts to put years of discussions, scientific-based planning and river studies into action and accelerate momentum in implementing our unwavering commitment to a successful habitat restoration program,” stated TID General Manager Michelle Reimers in the news release. “We’re excited to continue the ongoing stewardship of the Tuolumne River – improvements that our community will see the benefits of for generations to come.”

“We’re proud to collaborate with River Partners, the irrigation districts, and others on the Tuolumne River to restore habitat and make improvements that will benefit salmon and other native species,” stated SFPUC General Manager Dennis Herrera in the news release. “We’ve always been willing to do our part to further protect natural habitats, including in times of drought. We and the districts have committed to self-fund millions of dollars in habitat improvement projects, as well as ensure more water for the Tuolumne, even in dry years.”

“River Partners believes creating a thriving future for California’s natural resources, ecosystems and people requires deep commitment with diverse public and private partners,” stated River Partners President Julie Rentner in the news release. “That’s why we’re excited to partner with the unique alliance of MID, TID and the SFPUC who are working proactively to restore the lower Tuolumne River and achieve real, lasting benefits for species on the brink and vulnerable communities. Our hope is that this partnership and its impact will serve as a model for effective collaboration and results along other California rivers and communities.”

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Newsom announces strategy to help salmon populations

AgAlert | February 7, 2024 | Christine Souza



A spring-run Chinook salmon is shown in a Sacramento River tributary. A new California Salmon Strategy document maps out intensified actions officials urge to safeguard the threatened species. Photo/Lisa Thompson, University of California, Davis

As California experiences hotter, drier temperatures due to climate change, Gov. Gavin Newsom has announced the state's first strategy to protect and help restore salmon species to reduce their risk of extinction.

The California Salmon Strategy, released last week, is a 37-page document that outlines actions state agencies are already taking to stabilize and recover salmon populations. It also maps out additional or intensified actions needed in coming years. The document identifies six priorities and 71 actions.

The salmon strategy's priorities call for: removing barriers and modernizing infrastructure for salmon migration; restoring habitat; protecting water flows in key rivers at the right times; modernizing hatcheries; transforming technology and management systems; and strengthening partnerships.

California Farm Bureau senior policy advocate Alexandra Biering said, "Many of the strategy actions—from dedicated habitat to dam removal and ecosystem flows—require the participation of private landowners and water rights holders."

Biering said farmers would also like to see thriving salmon populations. She said the state's objective to "recover salmon in the state across their range is a worthy goal but one that might not be completely attainable."

The state's salmon strategy includes several projects that are already underway, including removal of four hydroelectric dams on the Klamath River. The Copco 2 Dam in Siskiyou County was removed in 2023.

The deconstruction of two other Siskiyou dams, the Iron Gate and Copco1 dams, and the JC Boyle dam in southern Oregon is expected to happen in May or June.

Other ongoing efforts include a push by tribes and the Pacific Gas & Electric Co. to decommission and remove the Scott Dam on the Eel River in Mendocino County.

In addition, work continues toward finalizing agreements for passage and reintroduction of fish in the Yuba River. Other efforts include developing minimum instream flows and a long-term management plan for the Scott and Shasta rivers in Siskiyou County and completing a salmon conservation and rearing facility below Friant Dam on the San Joaquin River on the border of Fresno and Madera counties.

Dennis Thibeault, executive vice president of forestry for the Humboldt Redwood Co. and the Mendocino Redwood Co., called the state's new salmon strategy "a major step forward."

He said, "Conserving this keystone species will require a coordinated effort throughout its range in California on both public and private lands."

In a related effort, the California State Water Resources Control Board, at its Feb. 6 board meeting, will consider a proposal to approve final biological goals for unimpaired flow objectives to help improve salmon populations in the Lower San Joaquin River tributaries.

The state's decision to set flows on the Stanislaus, Tuolumne and Merced rivers is part of the state's Bay-Delta Water Quality Control Plan.

The Newsom administration and the California Legislature have spent almost \$800 million in the past three years to protect and restore salmon.

With projections showing Chinook salmon population at historic lows last year, the salmon season was closed, and the state requested a federal fishery disaster declaration to support impacted communities.

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Learn more about the California Salmon Strategy at www.gov.ca.gov/wp-content/uploads/2024/01/Salmon-Strategy-for-a-Hotter-Drier-Future.pdf.

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

Newsom's salmon strategy gets mixed reviews

Maven News and Features | February 5, 2024

Last week, the Newsom administration released its salmon strategy aimed at aimed at protecting and restoring salmon “amidst hotter and drier weather exacerbated by climate change.” Here’s what conservation groups and other stakeholders had to say:

California Salmon and Steelhead Coalition (CalTrout, Trout Unlimited, and the Nature Conservancy)

The California Salmon and Steelhead Coalition today expressed support for Governor Gavin Newsom’s California Salmon Strategy, released January 30th. The Coalition, a partnership between California Trout, The Nature Conservancy, and Trout Unlimited, noted that many elements of this plan have been vetted for years by Coalition members and project partners and have proven effective in enhancing salmon habitat and recovery.

The California Salmon and Steelhead Coalition works to increase streamflow in North and Central Coast watersheds to benefit salmon and steelhead while improving water supply reliability for communities.

Salmon and steelhead are a keystone species in many of California’s coastal ecosystems and an important indicator of watershed health. Yet up and down the state many salmon and steelhead populations are crashing or in long-term decline. Over the past five years, abysmally poor salmon returns have twice caused the closure of commercial and sport salmon fisheries and severely limited tribal harvest in California. There is no time to lose in implementing the policy changes, restoration, and barrier removal actions described in the Strategy.

“Restoring salmon runs amidst changing climate is not just an environmental imperative, but a societal necessity,” said Liz Forsburg Pardi with The Nature Conservancy. “We applaud Governor Newsom’s leadership and California’s Salmon Strategy for a Hotter, Drier Future. Guided by science like the California Environmental Flows Framework, which tells us how much water healthy rivers and fish need to thrive, and by collaborating with tribes, agencies, and conservation partners, we can build a legacy of protecting our ecosystems, cultures, and water resources for the future.”

[Continue reading this statement from the California Salmon and Steelhead Coalition.](#)

California Sportfishing Protection Alliance

The “California Salmon Strategy” announced January 30, 2024 by the Newsom Administration is a tour de force of avoidance and deflection. It blows right past the single largest issue facing California’s salmon: inadequate flows into and through the Bay-Delta Estuary.

The Newsom administration has been, and continues to be, on the wrong side of Delta flow. The new Strategy document does not cure that unacceptable position. On the contrary, it ducks it.

The Newsom administration is the ringleader of the “Voluntary Agreements” that would increase Delta inflow and outflow by an average of about 5%. A flow increase of 5% is far, far short of what the State Water Board is proposing for the update of the Bay-Delta Plan and what its science says Central Valley salmon need. If it were dollars, 5% wouldn’t even pay the sales tax.

Worse, the Newsom administration is a vocal supporter of two huge water development projects in the Central Valley: the proposed tunnel under the Delta (branded “Delta Conveyance”), and Sites Reservoir. Those two projects alone would take more water out of the Delta than the Voluntary Agreements would put in.

[Click here to continue reading from the California Sportfishing Protection Alliance.](#)

Golden State Salmon Association

Governor Newsom’s new Salmon Plan is packed full of good stuff that we have been fighting to get for years. We welcome increased hatchery production and are excited to see improvements on the Feather River and other actions. The problem is that the salmon community has been poked in the eye way too many times and the plan, on paper, directly conflicts with the Newsom Administration’s implementation track record and what he has actually been doing for years to devastate California’s most important salmon runs. So, what it potentially boils down to is conveniently timed smoke and mirrors and we’re left wondering if this is yet another public relations stunt.

We will know that the Governor is serious about helping salmon communities when he finally abandons the extreme water diversion rules forced on us under the previous presidential administration. The current salmon season closure – the Newsom shutdown – was caused by the administration’s irresponsible decisions during the drought. The core problem is simple. Lethal temperatures and inadequate flows are killing our largest salmon runs.

[Continue reading at the Golden State Salmon Association.](#)

Northern California Water Association

On Tuesday, Governor Gavin Newsom’s administration released the “California Salmon Strategy for a Hotter, Drier Future: Restoring Aquatic Ecosystems in the Age of Climate Change.” This document outlines the administration’s broad strategy to recover California’s salmon populations, including the four runs of Chinook salmon that return to rivers and creeks in the Sacramento Valley to spawn.

We encourage you to read the new strategy. Categories of actions in the plan include: Remove Barriers and Modernize Infrastructure for Salmon Migration, Restore and Expand Habitat for Salmon Spawning and Rearing, Protect Water Flows and Water Quality in Key Rivers at the Right Times to Support Salmon, Modernize Salmon Hatcheries, Transform Technology and Management Systems for Climate Adaptability, and Strengthen Partnerships.

This approach and the action items are generally supported by the “Holistic Approach to Healthy Rivers and Landscapes” that water agencies in the Sacramento Valley and our many partners (including a collaboration of state fisheries and water management agencies and conservation partners) are advancing to recover fish species in the Sacramento Valley, recreate floodplains and other Pacific Flyway habitat for birds and other species through land and water management actions, and habitat for other wildlife while protecting communities and sustaining farming in the region.

[Click here to continue reading this post from the Northern California Water Association.](#)

Restore the Delta

Barbara Barrgian-Parilla: “There is no salmon recovery plan without science-based river flows with set standards. The voluntary agreements will finish off Sacramento and San Joaquin River salmon runs. The Governor needs to stop with the obfuscation and decrees that appear like action and start building a comprehensive water plan that will serve river and Delta communities and Southern California water users. He has a moral obligation to protect our rivers and drinking water supplies as we face climate change.”

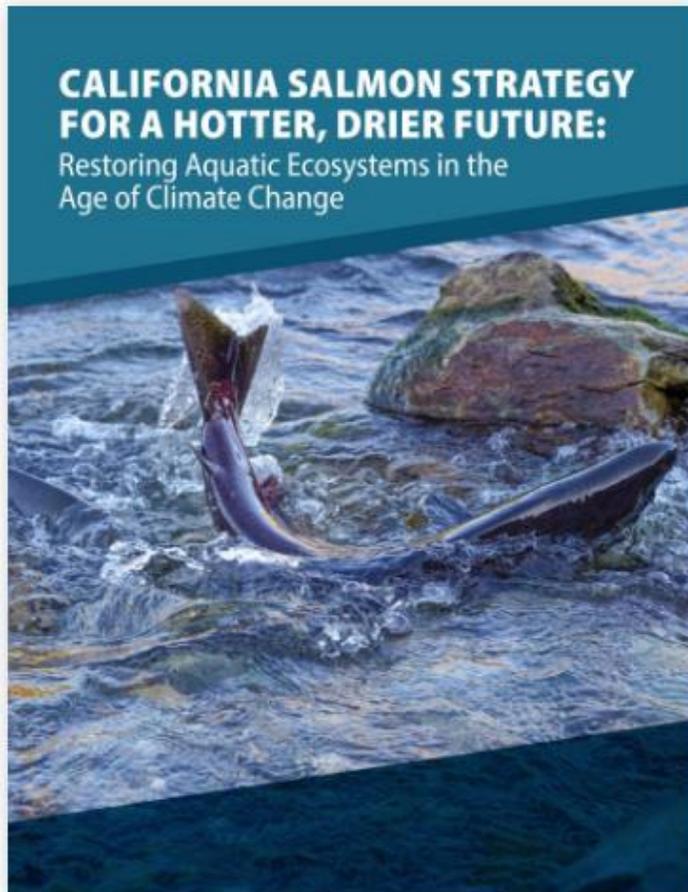
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Newsom Administration Develops Comprehensive Salmon Strategy for California

Northern California Water Association | January 31, 2024 | Todd Manley

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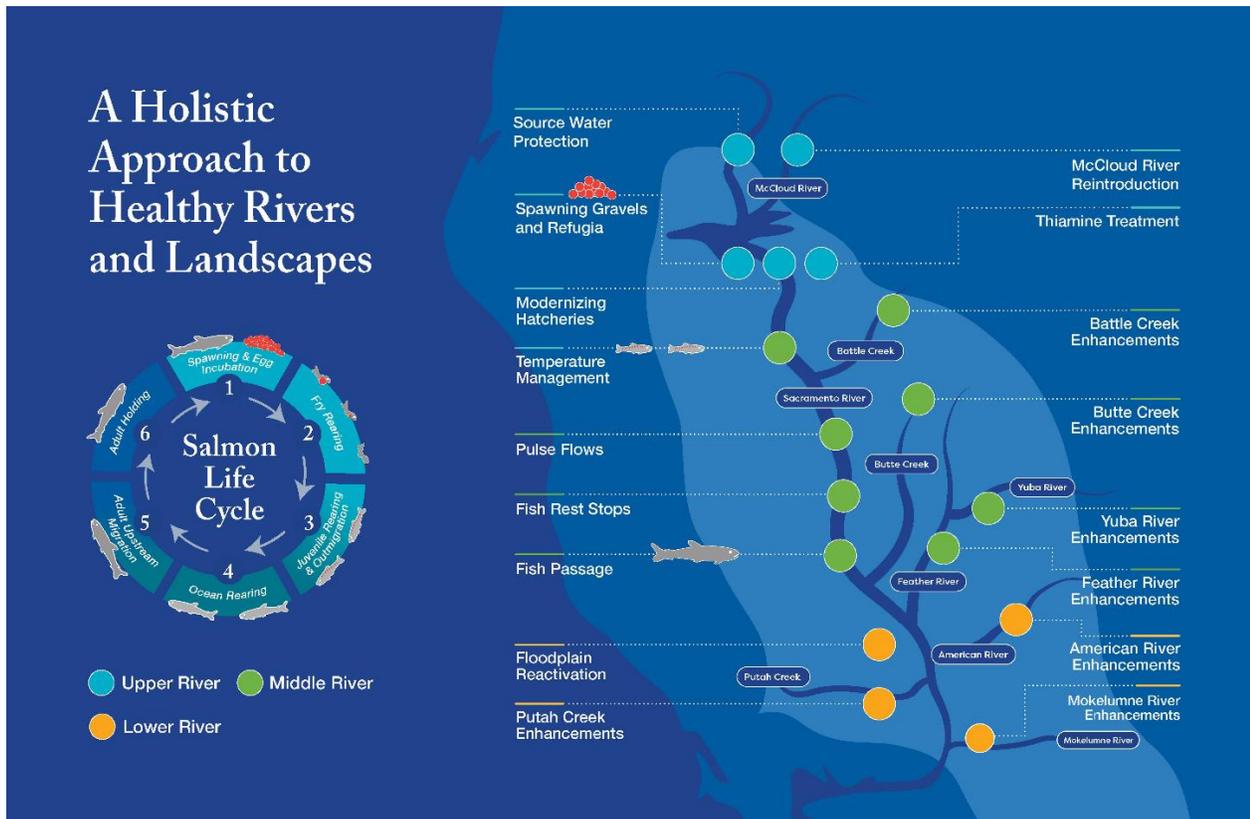
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through land and water management actions, and habitat for other wildlife while protecting communities and sustaining farming in the region.

Our healthy rivers and creeks depend upon on a sufficient volume of water interacting with a healthy landscape at the right time and place to deliver water for multiple benefits and approximate the habitat patterns to which the native flora and fauna are adapted. Our approach includes a portfolio of actions in every river reach designed to provide flows with function—the sufficient water necessary to reactivate the landscape-scale patterns of biophysical habitat conditions that robust, resilient populations of salmon (and other native fish, bird, and wildlife populations) depend upon. Our goal for this Holistic Approach is to provide salmon with a riverscape that they recognize.

For the past several decades there has been a regulatory focus on one species or even one-life-stage for salmon, without the desired improvement in fisheries or aquatic health. Scientists are pointing the way forward for a new ridgetop to river mouth water management approach that is essential for the recovery of the four runs of salmon in the Sacramento Valley. The Sacramento Valley Salmon

Recovery Program will continue to be used to coordinate and prioritize salmon recovery actions with a focus on collaborative actions to advance the NOAA “Species in the Spotlight” and Fisheries Recovery Plan, the new California Salmon Strategy for a Hotter, Drier Future, the California Natural Resources Agency’s Sacramento Valley Salmon Resiliency Strategy and Salmon Action Plan. Every water management action from ridgetop to river mouth is necessary to improve conditions for every freshwater life-stage of salmon as they migrate up and down the river systems, and to avoid a weak link in the salmon life-cycle. The Holistic Approach, with collaborative actions on each of these elements and river segments, is the best opportunity for salmon recovery in the Sacramento Valley.



The leaders living and working in the Sacramento Valley are embarking on a once-in-a-generation opportunity to advance a holistic and comprehensive approach for fisheries by aligning the current leadership, science, available funding, and a devotion to “give salmon a chance” by improving freshwater conditions for salmon throughout the Sacramento Valley. Our goal the next several years is to broaden the focus on salmon to include all life stages, rather than focus entirely on temperature management issues on the upper Sacramento River. This will focus on working with the agencies to further unconfine the Sacramento River System and activate the landscape as the best solution for fish and wildlife, including floodplain reactivation, improving access and habitat on Butte Creek and Battle Creek, reintroduction opportunities above Shasta Dam, and improved hatcheries. These actions are part of a concerted effort to improve all freshwater life-stages for salmon: spawning gravel, temperature management for incubation, rearing habitat, migratory corridors, and nourishment, as well as decreasing predation impacts.



Source: Northern California Water Association

This holistic approach is described in detail here and offers a macro-view of the Sacramento Valley, showing the comprehensive efforts underway—from ridgetop to river mouth—to improve freshwater conditions for each life-stage of all four-runs of Chinook salmon. This approach and the actions throughout the region are all designed to restore ecosystem function of the landscapes and riverscapes, while concurrently helping secure water supplies for communities, farms, other fish and wildlife, recreation, and hydropower. We look forward to implementing an action plan to support the new Salmon Strategy with the state and federal agencies and conservation partners.

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This Sierra river needs more water for salmon. San Francisco wants to give it gravel |
Modesto Bee Opinion | February 1, 2024 | Peter Drekmeier

Nature designed the Tuolumne River to be a fast-moving, cold river. Dams and diversions have turned it into a slow-moving, warm stream. Its operators are trying to solve the problem with physical changes to help native fish. That won't work if the river also doesn't get some of its water back.

The Modesto and Turlock Irrigation Districts, along with the San Francisco Public Utilities Commission, recently announced a plan to invest \$80 million to restore fish habitat in the river. Unfortunately, a critical issue remains: More water to make the habitat work. Without this, the Tuolumne River's beleaguered salmon population will not recover.

Past attempts to restore Tuolumne fish populations without significantly increasing flow have all failed. Following a 1995 voluntary agreement, the Tuolumne diverters embarked on a plan to restore instream habitat. Their signature project involved filling a mining pit in the river with gravel to disrupt bass (a non-native predator of salmon) habitat. It failed. The districts' own post-project report highlighted the resilience of bass populations in the Tuolumne River due to persistent low river flows.

There is no getting around that the core problem facing the Tuolumne River is the altered flow pattern, a river left with a fraction of its water. Less water means warm, slower-moving water. And warm water favors warm-water species like bass over native species. This is glaringly apparent during drier years when the river becomes clogged with non-native water hyacinth. Beneath the pariah vegetation, bass lurk in the shallows, awaiting their next meal of baby salmon.

The new habitat restoration program is essentially the proposed Tuolumne River Voluntary Agreement, which the diverters put forward as an alternative to the State Water Board's Bay Delta Water Quality Control Plan. The state's plan would require a range of 30%-50% of the River's natural flow between February and June, starting at 40%. The idea behind the flow range is that if other measures (that don't involve increasing flow) work, then the river might not need as much water. But if those measures fail, there will be a back-up plan. This approach encourages effective solutions, as opposed to the Tuolumne River Voluntary Agreement, which is more like a set of tasks to be checked off a list.

This proposed agreement is to sidestep a necessary rebalancing of the beneficial uses of the Tuolumne by its primary regulator, the State Water Resources Control Board. In a years-long process that is still under way, the Board is examining alternative agreements such as this one rather than exercise its authority and provide more flow to the river as a necessary use of the water.

If the voluntary agreement is implemented and the measures fail, the Tuolumne River ecosystem will continue to degrade.

The main focus of the Tuolumne River Voluntary Agreement is to add spawning gravel to the river. However, research indicates that this isn't what the river needs most. A study by the U.S. Fish and Wildlife Service found that while poor spawning habitat limits baby fish (fry) production, the river is already producing more fry than its rearing habitat can support. So just adding gravel would likely not lead to more adult fish.

To improve rearing habitat for baby fish we need to restore the river's floodplains, as proposed by the districts. We also need to activate them with water, as dry floodplains do not serve an ecological function.

Proponents of the Tuolumne River Voluntary Agreement claim it's based on science, but that "science" has been challenged by a number of natural resource agencies and fish biologists. A peer review commissioned by the National Marine Fisheries Service found major flaws in the fish models the voluntary agreement is based on.

The truth is, the Tuolumne River has been the subject of an unintended experiment for decades. The unasked question? Can native fish survive with only 20% of the river's natural flow? The unequivocal answer is no. The Tuolumne salmon population is worse off than on any other Central Valley river.

Habitat restoration is important, but it must be coupled with higher flows. Non-flow measures cannot substitute for desirable water temperature, inundated floodplains and sufficient flow to transport juvenile salmon down the river and out to the Bay-Delta quickly so they are less likely to get eaten by bass.

Commitment to the restoration of the Tuolumne River requires a shift from traditional, single-focused solutions to a more integrated, science-based approach. Fortunately, there are very reasonable solutions that can help restore the Tuolumne while protecting our water supply and reducing flood risk in Modesto. For example, we need to capture potential floodwater and use it to recharge our groundwater basin, an initiative that could attract financial support from the SF Public Utilities Commission given its cost-effectiveness compared to developing new water supplies in the Bay Area.

We encourage the Tuolumne River diverters to take the next step toward a more sustainable community, economy and river ecosystem. Tuolumne River Trust stands ready to be part of a comprehensive solution.

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Peter Drekmeier serves as policy director for the Tuolumne River Trust.

Will S.F.'s population grow in the future? New study predicts city may follow a different trend than others

San Francisco Chronicle | January 24, 2024 | Sriharsha Devulapalli



Large crowd moves through the Night Market in the Sunset District of San Francisco, Calif., on Friday, Sep. 15th, 2023. Felix Uribe/Special to The Chronicle

San Francisco's population declined dramatically during the first part of the pandemic, spurring worries that the city is headed for a "doom loop" scenario, in which the negative impacts of a decreasing population cascade. But since then, the city's population has been rising slowly, and according to new research, San Francisco is among the large U.S. cities poised to see population growth by the year 2100, even as other cities lose population. That positive projection is in part a result of the city's density and relative resilience to climate change.

Researchers from University of Illinois Chicago found that over half of all cities in America could see declines in population by the end of the century, leading to disruptions in basic services like transit, clean water, and electricity. Except for D.C. and Hawaii, all states are expected to undergo some level of depopulation, with the Northeast and Midwest facing the largest losses, according to study authors Uttara Sutradhar and Sybill Derrille. The authors anticipate that by 2100, most places that are experiencing population growth will be urban areas located in the South or the West.

The researchers used current U.S. census data and recent growth trends to model future population growth. They also considered five possible climate scenarios, known among researchers as "Shared Socioeconomic Pathways," which account for how society could change based on how climate change would be addressed. The most optimistic scenario assumes that society prioritizes sustainability-focused growth, with less greenhouse gas emissions, while the most pessimistic scenario involves fossil fuel-dependent development.

The map below shows two potential population growth scenarios — one assuming moderate global development (SSP2) and the other anticipating high regional disparities and limited global cooperation between countries (SSP4).

Even in the more favorable scenario, a quarter of all cities in California are expected to see declines in population, with several in the less urban parts of Northern California. Eureka, South Lake Tahoe, Susanville, Clearlake and Shasta Lake are forecasted to be among the hardest hit.

However, the largest cities in the state — Los Angeles, San Diego, San Jose, San Francisco and Fresno — are projected to see population growth. Cities that currently have higher incomes, less

vehicle ownership, and have higher population density, like San Francisco, are likely to attract more people, according to the study.

In the less optimistic scenario, which assumes that there are highly unequal investments in human capital and increasing inequality, the model still projects growth in population for cities in the Bay Area and the northern coast of California. That's in contrast to a general depopulation trend across the country.

The analysis does not take into account immigration and domestic migration trends, because of the uncertainty associated with them. Those things may have a huge impact on whether reality unfolds according to these projections.

"Immigration would seem to be the key towards population growth in the decades to come," said Dr. William Frey, a senior fellow at Brookings and a long-time demographer focused on urbanization in the U.S. "[But] in a lower growth environment, domestic migration patterns continue to determine which cities survive."

The authors acknowledge that immigration, as well as drastic events like extreme weather or war, could certainly impact how these cities grow or decline.

Nevertheless, this overall depopulation trend could have consequences for how cities in the U.S. and their infrastructures operate, the study says. The loss of population in developed cities could lead to poorly maintained and underutilized infrastructures, leading to disruptions in basic services like transit, clean water and electricity, according to the study.

Although this model suggests San Francisco's population would continue to grow, the city is already facing some of the threats of depopulation. Last year, due to a decline in ridership, Bay Area transit agencies were preparing for a future with massive service cuts. Pandemic-era work-from-home policies have led to massive office buildings downtown going empty.

"We are so used to talking about access to infrastructure, but in large parts of the US, we have too much infrastructure and it is becoming a liability," said Derrible, a co-author and professor of urban engineering at UIC.

The authors urged policymakers to shift away from growth-based planning, which assumes cities will see more people moving in, and start finding solutions for cities that are likely to depopulate. "You have to be creative and come up with solutions that are tailored to the local context," he said.

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Read more:

[Charts show extremely detailed look into California's changing population](#)

[Is the San Francisco exodus over? Here's what population data shows](#)

[The California exodus continues. Chart shows how unusual the population drop was](#)