EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Board of Directors Meeting

AGENDA

Wednesday, August 8, 2018
11:00 a.m. – 12:00 p.m.

San Joaquin County – Robert J. Cabral Agricultural Center
2101 E. Earhart Avenue – Assembly Room #1, Stockton, California

I. Call to Order/Pledge of Allegiance & Safety Announcement/Roll Call

II. SCHEDULED ITEMS – *Presentation materials to be posted on ESJGroundwater.org and emailed prior to the meeting. Copies of presentation materials will be available at the meeting.*

A. Discussion/Action Items:

1. Approval of Minutes of July 11, 2018 (See Attached)
2. Roadmap Update and Project Schedule
3. Outreach & Groundwater Sustainability Workgroup Update
4. GSP Update
5. Hydrogeologic Conceptual Model
6. Department of Water Resources Update
7. Schedule Recap

B. Informational Items (see attached):

1. July 24, 2018, westernfarmpress.com, "Capitol Rally to Protest Water Agency's Bay-Delta Plan"
2. July 24, 2018, pleasantonweekly.com, "Zone 7 Asked to Endorse New $8.8 Billion Water Bond Measure"
3. July 25, 2018, Eastern San Joaquin Groundwater Authority Letter of Support to Northern Delta Groundwater Sustainability Agency, "Groundwater Basin Boundary Modification Request"
4. July 25, 2018, agalert.com, "Commentary: Why a Water Board Plan Should Worry the Whole State"
5. July 27, 2018, mavensnotebook.com, "News Worth Noting: 58 Groups Sign on to Letter Demanding Stronger Flow Standards in Water Board's Bay-Delta Plan Updates; DISB Report on Water Quality Science in the Delta"

(Continued on next page)

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY
Board of Directors Meeting
AGENDA
(Continued)

---

6. July 30, 2018, news.UCSC.edu, "Newscenter – Groundwater Recharge Project Informs Statewide Sustainability Efforts"
7. July 31, 2018, westernfarmpress.com, "Ag Groups Urge Board to Reject Flows Plan"
8. July 31, 2018, newsdeeply.com, "Does the Bay Area Have Enough Water for Economic Growth and Salmon?"

III. Public Comment (non-agendized items)

IV. Directors' Comments

V. Future Agenda Items

VI. Adjournment

Next Regular Meeting
September 12, 2018 at 11:00 a.m.
San Joaquin County - Robert J. Cabral Agricultural Center
2101 E. Earhart Ave., Assembly Rm. #1, Stockton, California

Action may be taken on any item

Agendas and Minutes may also be found at http://www.ESJGroundwater.org
Note: If you need disability-related modification or accommodation in order to participate in this meeting, please contact San Joaquin County Public Works Water Resources Staff at (209) 468-3089 at least 48 hours prior to the start of the meeting.

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY
Board Meeting Minutes
July 11, 2018

I. Call to Order/Pledge of Allegiance & Safety Announcement/Roll Call

The Eastern San Joaquin Groundwater Authority (GWA) Board meeting was convened by Vice-Chair Mel Panizza at 11:05 a.m., on July 11, 2018, at the Robert J. Cabral Agricultural Center, 2101 E. Earhart Ave. Stockton, CA. Following the Pledge of Allegiance, a representative of the San Joaquin County Office of Emergency Services provided the required safety information.

In attendance were Vice-Chair Mel Panizza, Directors John Freeman, George Biagi, Jr., Russ Thomas, Mike Henry, Tom Flinn, Eric Thorburn, John Herrick, Alternate Directors Charlie Swimley, Paul Brennan and Doug Heberle.

II. SCHEDULED ITEMS

A. Discussion/Action Items:

1. Approval of Minutes of June 13, 2018

Motion: Director Mike Henry moved, and Alternate Director Doug Heberle seconded, the approval of the June 13 minutes as presented. The motion passed unanimously.

2. Roadmap Update and Project Schedule

Ms. Alyson Watson (Woodard & Curran) provided an overview of how the project is tracking regarding schedule.

3. Outreach & Groundwater Sustainability Workgroup Update

Ms. Watson gave a summary of activities related to outreach and the activities of the Groundwater Sustainability Workgroup. Ms. Mary Elizabeth, representing the Sierra Club, Delta-Sierra Group, showed the Stakeholder Engagement and Public Outreach Plan, noting that each GSA should have an outreach plan and be reaching out to citizens and residents to let them know what is going on with groundwater sustainability.

4. GSP Update

Ms. Watson gave an update on the approach for the Groundwater Sustainability Plan, as well as an update on sustainability indictors. Director John Herrick indicated that they do not have seawater intrusion, but they do have salt intrusion. Ms. Watson indicated that we are looking at the salinity under the sustainability indicator for Water Quality. Director Tom Flinn asked how the sustainability indicator for Depletion of Interconnected Surface Water relates to the Mokelumne River and suggested considering reoperation of reservoirs for the benefit of the groundwater basin. Ms. Watson indicated that surface waters in the basin are highly managed so we have a limited ability to change management of surface water. The GWA will look at impacts related to changing instream flows and how changes to instream flow requirements would potentially impact groundwater conditions.

5. Hydrogeologic Conceptual Model (HCM)

Ms. Watson gave an overview of the HCM, stating it is not the same as the groundwater model, rather it is the characterization of the hydrogeology of the subbasin at specific locations to be representative of the subbasin. This model will provide greater resolution at specific cross-sections of the subbasin. Such data will be useful in future project development or to provide greater understanding of areas of the basin where issues may be occurring. Ms. Elizabeth indicated that the Department of Water Resources has Best Management Practices available for the HCM which spell out the requirements, including two cross-sections and other information that should have been summarized in the water budget. She encouraged everyone to look at these documents and be informed because this is the basis of the graphical and mathematical

model. Director Tom Flinn indicated that the County publishes three cross sections and asked how this relates. Mr. Brandon Nakagawa, San Joaquin County Water Resources Coordinator, indicated that semi-annual reports focus on groundwater levels and will continue for CASGEM and local wells, whereas cross-sections can help with determining where recharge sites should go, as well as vertical and horizontal flows and well strata. Mr. Brian Moss from Calaveras County commented on the Eastside GSA geology and the relation of surface water to groundwater, indicating that no water moves from Camanche Lake into the Eastside basin, but much water flows on the other side. He emphasized the importance of geology on water flows, indicating fractured rock in the eastern area.

6. Update from Department of Water Resources

Mr. Paul Wells gave an update on DWR items, indicating that DWR is reviewing the grant work plan as well as the application for Technical Support Services (TSS). DWR is reviewing the umbrella TSS application, then the GWA can submit task requests. Mr. Wells gave a reminder that the Basin Boundary Modification submittal deadline is July 31 and Public Comment is due August 31.

7. Schedule Recap

GWA Board meeting topics for August include Minimum Thresholds, a GSP Development update, a Workgroup update, and a Public Meeting update.

8. Facilitator Transition

Ms. Carolyn Lott discussed the facilitator transition role, indicating that she is retiring.

B. Informational Items:

Vice-Chair Panizza referenced the five informational items in the agenda packet. No discussion took place on the items.

III. Public Comment (non-agendized items):

Mr. George Hartmann indicated that he has attended two Workgroup meetings, noting that Ms. Watson is doing a good job. He indicated that comments flowed from the first meeting and that many comments were produced. He further indicated that the last meeting dealt a lot on process issues. He then suggested that if the Board wants meaningful input, they need to come up with specific tasks and topics that they want input on or they will not get meaningful items. He then indicated that more engagement from the GWA Board is needed, requesting that the Board be more involved in guiding the process. He noted that the stakeholder group is not quite diverse enough yet and there have been suggestions made. As a second item, he indicated the State's upcoming adoption of the Water Quality Control Plan. He noted that this affects the work of the GWA as it will deprive us of water flows we thought would be available for recharge, and affects salinity in the southern Delta.

IV. Directors' Comments:

Director John Herrick congratulated and thanked Ms. Carolyn Lott. Following a question about replacement of facilitation services, Mr. Nakagawa indicated that the Board will continue without facilitation and that resources will be diverted to the Workgroup. Additional facilitation will be revisited beyond December.

V. Future Agenda Items:

Agenda items for next month include Minimum Thresholds, a GSP Development update, a Workgroup update, and a Public Meeting update.

VI. Adjournment:

The meeting was closed at 11:53 am.

Next Regular Meeting: August 8, 2018 at 11:00 a.m.

San Joaquin County - Robert J. Cabral Agricultural Center, 2101 E. Earhart Ave., Assembly Rm. #1, Stockton, CA

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Joint Exercise of Powers Board of Directors Meeting

MEMBER SIGN-IN SHEET

Location: SJ COUNTY ROBERT J. CABRAL AG CENTER Date: 7/11/18 Time: 11:00 AM

INITIAL	Member's Name	GSA	Phone	Email
	John Freeman	Cal Water Member	209-547-7900	jfreeman@calwater.com
	Steve Cavallini	Cal Water Alternate	209-464-8311	scavallini@calwater.com
	George Biagi, Jr.	Central Delta Water Agency Member	209-481-5201	gbiagi@deltabluegrass.com
	Dante Nomellini	Central Delta Water Agency Alternate	209-465-5883	ngmplcs@pacbell.net
	Grant Thompson	Central San Joaquin Water Conservation District Member	209-639-1580	gtom@velociter.net
	Reid Roberts	Central San Joaquin Water Conservation District Alternate	209-941-8714	reidwroberts@gmail.com
	Stephen Salavatore	City of Lathrop Member	209-941-7430	ssalvatore@ci.lathrop.ca.us
		City of Lathrop Alternate		
	Alan Nakanishi	City of Lodi Member	209-333-6702	anakanishi@lodi.gov
	Charlie Swimley	City of Lodi Alternate	209-333-6706	cswimley@lodi.gov
	Rich Silverman	City of Manteca Member	209-456-8017	rsilverman@ci.manteca.ca.us
	Mark Houghton	City of Manteca Alternate	209-456-8416	mhoughton@ci.manteca.ca.us
	Elbert Holman	City of Stockton Member	209-937-8244	hoytjr63@yahoo.com
	Mel Lytle	City of Stockton Alternate	209-937-5614	mel.lytle@stocktonca.gov

INITIAL	Member's Name	GSA	Phone	Email
RT	Russ Thomas	Eastside San Joaquin GSA Member	209-480-8968	rthomasccwd@hotmail.com
WW	Walter Ward	Eastside San Joaquin GSA Alternate	209-525-6710	wward@envres.org
	David Fletcher	Linden County Water District Member	209-887-3202	dqfpe@comcast.net
	Paul Brennan	Linden County Water District Alternate	209-403-1537	ptbrennan@verizon.net
	Mike Henry	Lockeford Community Services District Member	209-712-4014	midot@att.net
	Joseph Salzman	Lockeford Community Services District Alternate	209-727-5035	lcsd@softcom.net
ES	Eric Schmid	Lockeford Community Services District Alternate	209-727-5035	lcsd@softcom.net
	Tom Flinn	North San Joaquin Water Conservation District Member	209-663-8760	tomflinn2@me.com
	Joe Valente	North San Joaquin Water Conservation District Alternate	209-334-4786	jcvalente@softcom.net
ET	Eric Thorburn, P.E.	Oakdale Irrigation District Member	209-840-5525	ethorburn@oakdaleirrigation.com
		Oakdale Irrigation District Alternate		
	Chuck Winn	San Joaquin County Member	209-953-1160	cwinn@sjgov.org
	Kathy Miller	San Joaquin County Alternate	209-953-1161	kmiller@sjgov.org
JH	John Herrick, Esq.	South Delta Water Agency Member	209-956-0150	jherrlaw@aol.com
	Jerry Robinson	South Delta Water Agency Alternate	209-471-4025	N/A
	Dale Kuil	South San Joaquin GSA Member	209-670-5829	dkuil@ssjid.com
	Robert Holmes	South San Joaquin GSA Alternate	209-484-7678	rholmes@ssjid.com
MP	Melvin Panizza	Stockton East Water District Member	209-948-0333	melpanizza@aol.com
AW	Andrew Watkins	Stockton East Water District Alternate	209-948-0333	watkins.andrew@verizon.net
	Anders Christensen	Woodbridge Irrigation District Member	209-625-8438	widirrigation@gmail.com
DH	Doug Heberle	Woodbridge Irrigation District Alternate	209-625-8438	heberlewid@gmail.com

Eastern San Joaquin Groundwater Authority Staff & Support

INITIAL	Member's Name	Organization	Phone	Email
KM	Kris Balaji	San Joaquin County	468-3100	kbalani@sjgov.org
FB	Fritz Buchman	San Joaquin County	468-3034	fbuchman@sjgov.org
BN	Brandon Nakagawa	San Joaquin County	468-3089	bnakagawa@sjgov.org
MC	Mike Callahan	San Joaquin County	468-9360	mcallahan@sjgov.org
amc	Alicia Connelly	San Joaquin County	468-3531	aconnelly@sjgov.org
KV	Kelly Villalpando	San Joaquin County	468-3073	krvillalpando@sjgov.org
DB	Danielle Barney	San Joaquin County	468-3089	dbarney@sjgov.org
CL	Carolyn Lott	Carlon Consulting / Facilitator	402-2024	carolynlott@sbcglobal.net
RA	Rod Attebery Monica Fracchia	Neumiller & Beardslee / Legal Counsel	948-8200	rattebery@neumiller.com

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

Joint Exercise of Powers Board of Directors Meeting

OTHER INTERSTED PARTIES - SIGN-IN SHEET

Location: SJ COUNTY ROBERT J. CABRAL AG CENTER Date: 7/11/18 Time: 11:00 AM

INITIAL	Member's Name	Organization	Phone	Email
	Ken Vogel	S.J. Farm Bureau	209-815-5803	KenVogel@SJFB.com
	Christy Kennedy	Woodard & Curran	415-321-3409	cskennedy@woodardcurran.com
	Alyson Watson	Woodard & Curran	415-321-3409	awatson@woodardcurran.com
	Paul Wells	DWR	916-376-9656	paul.wells@water.ca.gov
	Joaquin Cruz	EBMUD	510/287-0968	jcruz@ebmud.com
	Yolanda Park	Catholic Charities		ypark@ccstockton.org
	[illegible]	CALAVERAS Co.	209-786-9050	
	Brad Hoss	Calaveras County	209-246-9108	bhosse@co.calaveras.ca.us
	Mary Elizabeth	Sierra Club	209 547-8869	elizabeth@marrc.us
	Ali Taghavi	Woodard & Curran	916-999-8760	ataghavi@woodardcurran.com
	Jane Wagner Tyack	League of Women Voters of SJ County	209-642-5105	JaneTyack@mac.com
	Fritz Buchman	SJ County		
	Lindy Dorn	Sacramento County	916 874-1085	dornL@saccounty.net
	Aaron Lewis	EKI Env. & Water	971 471-6295	alewis@ekiconsult.com

OTHER INTERESTED PARTIES – SIGN-IN SHEET

INITIAL	Member's Name	Organization	Phone	Email
	Scot Moony	Sierra		
	Schwartz	EBMUD		
	George Hartmann	RD 2030	2099569940	
	ANNETTE HENNEBERRY	SCHERMESSER ALEC		
	Rebschmann	Kleinfelder		

ATTACHMENT II
B.1-8.

An Aug. 20 rally at the California State Capitol will protest the state water board's Bay-Delta Plan.

REGULATORY > WATER

Capitol rally to protest water agency's Bay-Delta Plan

Democratic Assemblyman Adam Gray will hold the event Aug. 20 to voice opposition to the State Water Resources Control Board's plan.

Jul 24, 2018

Assemblyman Adam Gray, D-Merced, is holding a rally on August 20th at noon on the steps of the State Capitol to protest Phase 1 of the State Water Resources Control Board's Bay Delta Plan The plan would require an average of 40% unimpaired flows along the Merced, Tuolumne, and Stanislaus Rivers for the protection of fish.

The proposal, if it moves forward as released, will devastate farmers in that region and set a bad precedent for Phase 2 along the Sacramento River, critics say. The water districts and state agencies have been in voluntary settlement discussions for over a year after the initial plan was released. Opponents say the process being proposed by the State Board seriously threatens the ability for those negotiations to be voluntarily settled outside of court.

California Citrus Mutual leaders appealed for federal intervention during a visit to Washington, D.C., last week. SWRCB action to take water from tributaries north of citrus production did create consternation at both congressional offices and the Department of the Interior, they say.

"In our view," CCM Executive Vice President Casey Creamer relates, "this effort is nothing but a power grab by SWRCB that deserves the full attention of all bodies in the state. Where does it stop?"

CCM offered a few suggestions as to where federal authorities could play a positive role. "It's remarkable that last May the state touted its exploding economy and how it was larger than all but four countries. They noted the growth in all sectors but agriculture. Connect the dots folks. More water in the past 25 years hasn't helped the situation, but it has led to no growth in our sector!"

For more information on the rally or to RSVP, you can contact the Assemblyman's District office at (209) 726-5465. The Turlock and Modesto Irrigation Districts also have additional information at www.worthyourfight.org.

Source: California Citrus Mutual

TAGS: REGULATORY ORCHARD CROPS

Uploaded: Tue, Jul 24, 2018, 4:51 pm

Zone 7 asked to endorse new $8.8 billion water bond measure

Prop 3 would generate funds for projects statewide; directors postpone discussion

by Erika Alvero / Pleasanton Weekly

Zone 7 Water Agency directors heard a presentation on a proposed statewide water bond measure at last week's regular meeting, with the measure's proponent asking for their support the new proposal -- four years after California voters approved another multi-billion-dollar water bond.

If passed in November, Proposition 3 would issue $8.877 billion in general obligation bonds to generate revenue for water-related projects, including water infrastructure, groundwater supplies and storage, habitat protection and more.

The measure is sponsored by Californians for Safe Drinking Water and a Clean and Reliable Water Supply, and it has the support of a variety of conservancy and environmental justice organizations at this point -- the over 460,000 valid signatures it garnered were enough to put the measure on the ballot. However, Gerald Meral, former deputy director of the California Department of Water Resources and the proposition's developer, said he is seeking endorsements of local water agencies because they deal most directly with voters.

"The credibility of your agency, of water agencies throughout the state, with your consumers is very

Zone 7 Water Agency logo.

SEE MORE PHOTOS

high ... They trust you," he said. "And so your endorsement to our campaign is really important, because of all the various endorsements we could have, local water agencies are really the best."

No action was taken at the July 18 Zone 7 board meeting, with directors listening to and discussing Meral's presentation on Prop 3, also known as the Water Supply and Water Quality Act of 2018.

If passed, the largest chunk of bond revenue from Prop 3 -- $2.355 billion -- would be directed to conservancies and state parks for watershed lands restoration, and to nonprofits and local agencies for river parkways.

Additionally, the proposition allocates $640 million to groundwater sustainability agencies and $500 million for public water system infrastructure improvements. The measure also stipulates that $1.398 billion be spent on projects benefiting state-defined disadvantaged communities, with another $2.637 billion prioritized for disadvantaged communities.

The bond is expected to generate about $8.4 billion in interest over a 40-year period, according to the state fiscal analyst, which would cost the state a total $17.3 billion.

During his presentation, Meral compared Prop 3 to previous water-related measures that have passed. His proposal is similar to Prop 1, which passed in 2014 and issued $7.12 billion in bond money for water infrastructure and watershed protection.

"But the remaining funds that were in Proposition 1, by the end of next year those will pretty much be expended by the various departments that receive them," he said.

And Prop 68, which passed in the recent June election and was billed as "a parks and water bond," he said, would have some overlap with his proposed measure, in terms of the components regarding safe drinking water and wastewater recycling.

The Zone 7 directors reacted somewhat hesitantly to his solicitation of their support. An endorsement from the agency would be unprecedented, they said -- with the exception of their public support of the California WaterFix, which was not a ballot measure.

The directors debated for a while about whether to have staff analyze the proposition for a report in the future, with directors Angela Ramirez Holmes and Sandy Figuers saying they didn't want to waste staff time, though director Bill Stevens pointed out that a presentation could be a good educational opportunity for the public.

Linda Kelly, a local resident who leads the group Citizens for Sensible Water Rates, spoke against spending staff time on the measure.

"I think that staff has a lot of work ahead of it, and important work to be doing which is direct benefit to Zone 7 customers," she said. "To pull those resources for a state issue like this ... seems to me we're being asked to have our very capable staff spend more time than maybe is necessary, when it's probably got legs of its own."

The discussion was ultimately postponed to a future date.

In other business

*The meeting was preceded by a reception and swearing-in ceremony for the three of the water agency's newly elected directors, two of whom are new to the board.

Alameda County Supervisor Scott Haggerty conducted the swearing-in for the two new members: Olivia Sanwong and Dennis Gambs. Livermore Mayor John Marchand swore in incumbent director Bill Stevens. Director Sarah Palmer, also re-elected in June, was absent from the board meeting.

* General Manager Valerie Pryor presented on behalf of the Government Finance Officers Association that Zone 7 had been awarded a Certificate of Achievement for Excellence in Financial Reporting.

"As somebody who's been a CFO, previously for a long time, this is a very prestigious award, and all the credit goes to Osborn and his team," she said, singling out Osborn Solitei, the agency's treasurer and assistant general manager of finance.

Comments

Posted by **Chris Gilbert**
a resident of another community
on Jul 25, 2018 at 11:11 am

+ 2 people like this

It's interesting that either Meral in his presentation or the reporter in his/her reporting did not mention two projects that the funds would be spent on: fixing Oroville Dam ($200M) and the Friant-Kern irrigation canal ($750M). These are projects which the taxpayer should NOT be paying for as they are the responsibility of those who use the water; in the later case 14 irrigation districts around Bakersfield, mostly used by large corporate farmers, e.g. Resnicks. Much if not most of the funding for getting this proposition on the ballot and in trying to get it passed (including Meral's appearance before Zone 7 commissioners; he's not going this as a volunteer!), is from agricultural interests, including up to this point $100K from Wonderful LLC, Resnick's almond / pistachio company. They want the taxpayer to cover their costs of doing business. Of course, if you can get environmental and economic justice groups to sign on by getting them money too, that's how you get a lot of support. Sierra Club California put together a document on the problems with the proposition. (Web Link)

Email Town Square Moderator Report Objectionable Content

EASTERN SAN JOAQUIN GROUNDWATER AUTHORITY

1810 E. Hazelton Avenue
P. O. Box 1810
Stockton, CA 95201

(209) 468-3089
ESJgroundwater@sjgov.org
esjgroundwater.org

July 25, 2018

Erik Ringelberg
Northern Delta Groundwater Sustainability Agency
1717 I Street
Sacramento, California 95811

SUBJECT: GROUNDWATER BASIN BOUNDARY MODIFICATION REQUEST

Dear Mr. Ringleberg:

Thank you for your presentation to the Eastern San Joaquin Groundwater Authority (ESJGWA) Board of Directors at their regular meeting on June 13, 2018. The purpose of this letter is to express support of the ESJGWA Board of Directors for the Northern Delta Groundwater Sustainability Agency's basin boundary modification request submitted to the California Department of Water Resources, which would form a new Northern Delta Subbasin from the portions of the Eastern San Joaquin, Solano and South American Subbasins overlying certain North Delta islands.

Sincerely,

BRANDON W. NAKAGAWA, P.E.
Water Resources Coordinator
Staff to the ESJGWA

BWN:DB:me
WR-18G037-ME1

c: Eastern San Joaquin Groundwater Authority Board of Directors

AgAlert
THE WEEKLY NEWSPAPER FOR CALIFORNIA AGRICULTURE

Commentary: Why a water board plan should worry the whole state

Issue Date: July 25, 2018
By Justin Fredrickson

Justin Fredrickson

Don Pedro Lake on the Tuolumne River, would be one of the facilities directly affected by a proposal to redirect flows in three Central California rivers, but the proposal could affect water use throughout the state.
Photo/Kevin Hecteman

It's not just the northern San Joaquin Valley that should be concerned about the state water board's plan to redirect water away from farms and cities in a misguided bid to save fish. No matter where you live in California—and no matter your source of water—you should be worried.

For now, the focus rests on regions along the Stanislaus, Tuolumne and Merced rivers. From there, it moves to the Sacramento Valley and Sacramento-San Joaquin Delta, and from there, who knows where?

In their plan, staff at the State Water Resources Control Board aims to restore "unimpaired flows" below dams by cutting in half current diversions to people and farms.

The theory is that, by redirecting large volumes of water and dedicating them to highly modified rivers and ecosystems, the result will be more fish.

People in the regions around Manteca, Oakdale, Modesto, Turlock, Merced and other communities have made a compelling case about the significant impact the plan would have—fallowed farmland, lost jobs, damaged economies. Impacts in the Sacramento Valley would be similar.

But the threat doesn't stop with agriculture or the Central Valley. Here are nine reasons people throughout California should be worried about what's being proposed for the three rivers:

1. The plan would reduce water supplies throughout California. Along with its proposed redirection of 30 to 50 percent of the water in the Stanislaus, Tuolumne and Merced rivers, the board staff has already put the Sacramento River watershed on notice that it plans to seek 45 to 65 percent of the flows there. When half the runoff from the state's two largest watersheds is siphoned off, the shockwaves ripple up and down the state.
2. The proposal discounts years of successful, good-faith efforts to find different ways to improve the health of salmon populations. Functional flows—providing the right amount of water at the right times—have been shown to be more effective than the sort of flat-percentage standard the board would apply. For best results, functional flows must be combined with non-flow strategies to create habitat, improve fish passage, address salmon predators and manage water temperatures. Under the board's plan, significant progress toward comprehensive solutions would be hampered.
3. Significant reductions in surface water supplies would seriously hinder local efforts to balance groundwater basins under the Sustainable Groundwater Management Act.
4. Beyond the Central Valley, the flow proposals pose a direct threat to Bay Area water from the Tuolumne and Mokelumne rivers.
5. A fact that should make water rights holders elsewhere nervous: The proposed approach would call into question some of the most senior water rights in California.
6. By hampering reservoir operations and reducing available water for junior water rights holders, the proposal would inevitably reduce water exports from the delta—thus further constricting already tight deliveries to points south throughout Central and Southern California.
7. Droughts like California's terrible 2012-15 drought would pose an even greater threat to a system that would become less flexible and resilient than the one we have today.
8. Obstacles to desperately needed investments and improvements in our overall water system would become greater. The proposed river standards could drive up costs and reduce the benefits of possible system enhancements. By taking millions of acre-feet of water off the table for any other purpose, the standards could foreclose the few options left to address a large and growing supply-demand gap.
9. By reducing reservoir storage in both wet and dry years, the proposed standards would lead to chronic water shortages throughout the state. That would harm human uses of water and escalate conflicts among regions, and among water users within regions.

The plan is guaranteed to hurt people, but there's no guarantee it would help salmon or other fish. Instead, it would only be the latest version of the tried-but-failed approach that certain environmental groups and regulatory agencies have pushed since the early 1990s.

That approach is based on the simplistic formulation that more flow equals more fish—and if it doesn't, just add more flow. Except that has been tried, and it hasn't worked.

More than a quarter-century of laws and regulations devoted to enhancing flows for fish has only brought us to the mess we're in now: fish populations still struggling, water systems hamstrung, local communities—especially rural communities—in distress.

There has to be a better way—and, indeed, there is.

Irrigation districts and others in the San Joaquin River watershed have provided the state water board with alternatives for managing the system that include many of the elements discussed above. The alternatives focus on functional flows and non-flow strategies that could avoid the potentially widespread community impacts the board plans promise.

But, immovably focused on fixed percentages of flows, the board has, so far, rebuffed every solution.

That, to me, is disappointing.

If you live in California, it should concern you, too.

(Justin Fredrickson is an environmental policy analyst for the California Farm Bureau Federation. He may be contacted at jef@cfbf.com.)

NEWS WORTH NOTING: 58 groups sign on to letter demanding stronger flow standards in Water Board's Bay-Delta Plan updates; DISB report on water quality science in the Delta

July 27, 2018 Maven News Worth Noting

58 Groups Sign on to Letter Demanding Stronger Flow Standards in Water Board's Bay-Delta Plan Updates

Today, a coalition of organizations from fishing, environmental, tribal, Delta, and business communities submitted a letter to the State Water Resources Control Board (Water Board) demanding stronger flow standards in its update of the Bay-Delta Water Quality Control Plan—a document that sets regulatory standards for water quality and flow criteria in Central Valley Rivers and the San Francisco Bay Estuary, including the Sacramento-San Joaquin River Delta.

The Bay-Delta Water Quality Control Plan's updates consist of two parts—the first ("Phase I"), proposes final flow standards for the San Joaquin River and three of its lower tributaries, in addition to setting new south Delta salinity standards. The second ("Phase II"), currently exists as a draft framework for a long-awaited update to standards for the Sacramento River and its tributaries, through-Delta flows, and San Francisco Bay inflow.

SEARCH THE NOTEBOOK

Enter your search term here to search all posts:

Browse posts, filtering by category and/or tag:

All Categories

All Tags

Submit

In the letter, the 58 groups and businesses agree that the Water Board's proposed flow criteria for Phase I and Phase II are insufficient to protect and restore fisheries and ecosystems in the Central Valley and the Bay-Delta Estuary, according to recommendations from state and federal fishery managers and independent scientists.

The groups that signed on span the entire West Coast of the U.S. mainland, reaching as far south as Los Angeles, and as far north as Seattle, with other communities located in the Central Valley, and along the Pacific Coast in between. The widespread interest in the Water Quality Control Plan updates demonstrate the far-reaching, interconnected consequences of the Water Board's two-decade-long delay in addressing deteriorating Bay-Delta water quality conditions.

Gary Bobker, Program Director for The Bay Institute said,
"Everyone, especially the State Water Board, knows that the San Francisco Bay Estuary's fisheries and water quality are declining rapidly and that unsustainable diversions of water are the primary cause. That's why it's so disappointing that the Water Board hasn't secured even the minimum amount of water needed to maintain these resources, much less the volumes that science indicates are necessary to recover from decades of neglect."

Board President of Friends of the San Francisco Estuary, Mitch Avalon said,
"We welcome this proposal by the State Water Board as a long overdue step in the right direction; however, the currently proposed standards do not leave enough water in these mighty rivers and will not do enough to restore healthy populations of endangered species like Chinook salmon. We are counting on our state agencies to give California's fish and wildlife—our natural heritage—a fighting chance."

Larry Collins, President of the San Francisco Crab Boat Owners Association, said,
"As Salmon season is about to open off of San Francisco, two months late, we have another opportunity to do what's right for our rivers and their fish. The thousands of families from the fishing, processing, and consuming communities demand that we give these fish adequate flows. Time after time, water has been stolen from these fish and gifted to the moneyed agribusiness interests. It is time to re-water our rivers so our salmon thrive and we thrive with them."

The Water Board will close its public comment period for the Water Quality Control Plan this Friday, July 27. Over the next month, the Water Board is tasked with reviewing these comments before considering adoption of the proposed Phase I

Plan amendments at its public meetings on August 21 and August 22.

Background on the Bay-Delta Water Quality Control Plan

The San Francisco Bay Estuary is in an ecological crisis, as reflected by its half-dozen endangered fish species, declining and increasingly restricted recreational and commercial fisheries, and deteriorating water quality. After nine years of hearings, review, analysis, and extensive input from scientists, managers, and stakeholders on all sides, the State Water Board released proposed final flow standards for the San Joaquin River and three of its lower tributaries, as well as new south Delta salinity standards ("Phase I") and a draft "framework" for its forthcoming update of standards for the Sacramento River, its tributaries, through-Delta flows, and San Francisco Bay inflow ("Phase II") on July 6, 2018.

These proposed changes by the Water Board are the first significant updates to water quality standards since 1995. The Bay-Delta Water Quality Control Plan and its updates are required by both federal law (Clean Water Act) and state law (Porter-Cologne Act).

Now available: A Review by the Delta Independent Science Board of Water Quality Science in the Sacramento-San Joaquin Delta

From the Delta Stewardship Council:

The Delta Independent Science Board (Delta ISB) has finished its review of the scientific basis for assessing water quality in the Delta. This review focuses on contaminants and nutrients in the Delta, and on how findings about them have been sometimes used and sometimes neglected in decisions related to ecosystem health.

With the completion of this review, the Delta ISB is committed to undertaking an active outreach effort to engage the community about the findings and recommendations from this review.

To read the final water quality review, please click here.

Questions? Please contact the Delta ISB at disb@deltacouncil.ca.gov.

UPCOMING EVENTS

AUG 1 WED — Innovative Tech — 01 Aug @ 12:00
WEBINAR: Inla — 01 Aug @ 12:30
AUG 2 THU — Central Valley R — 02 Aug — 03 Aug
AB 1755 Water — 02 Aug @ 10:00
AUG 6 MON — Legislature rec — 06 Aug @ All-day
AUG 7 TUE — State Water Res — 07 Aug @ 09:30
LEG HEARING: — 07 Aug @ 09:30
AUG 8 WED — Central Delta C — 08 Aug — 09 Aug
Maximizing Am — 08 Aug @ 09:00
AUG 10 FRI — Delta Independ — 10 Aug @ All-day

Please

MORE WAYS TO STAY IN TOUCH

NEWSCENTER

Groundwater recharge project informs statewide sustainability efforts

Study shows how collecting storm-water runoff to replenish depleted groundwater supplies can be coupled with a simple strategy to reduce nitrate contaminants

July 30, 2018
By Tim Stephens

The depletion of California's aquifers by overpumping of groundwater has led to growing interest in "managed aquifer recharge," which replenishes depleted aquifers using available surface waters, such as high flows in rivers, runoff from winter storms, or recycled waste water. At the same time, there is growing concern about contamination of groundwater supplies with nitrate from fertilizers, septic tanks, and other sources.

Researchers at UC Santa Cruz are addressing both issues with an ongoing program in the Pajaro Valley, where they have been implementing and studying groundwater recharge projects and evaluating methods to improve water quality as it infiltrates into the ground.

"As we ramp up groundwater recharge efforts, it's important to avoid contributing to problems with water quality. If we're putting good quality water into the ground, it will dilute any contaminants that are already in the groundwater," said Andrew Fisher, professor of Earth and planetary sciences at UC Santa Cruz.

In a study accepted for publication in *Water Research* and available online, Fisher's team showed that simply adding a layer of woodchips where water infiltrates into the ground can remove nitrate from the water by stimulating microbial activity in the underlying soil. Sarah Beganskas, who led the study as part of her Ph.D. thesis research, said the wood chips provide a source of carbon needed by denitrifying bacteria in the soil.

"We were able to see an increase in the removal of nitrate from the water and, at the same time, increased abundance of the microbes that carry out this process," she said. "Wood chips increased nitrate removal even at fast infiltration rates, which is important because recharge sites with high infiltration rates are often preferred."

Just as important is that wood chips are relatively inexpensive. "It has to be a cost-effective technology to be practical," Fisher said.

Sustainable groundwater management

UC Santa Cruz hydrogeologist Andrew Fisher leads a team of researchers looking for better ways to capture runoff and use it to not only increase groundwater quantity, but also quality. (Link to video on UCTV)

Andrew Fisher at a managed aquifer recharge project in California's Pajaro Valley. (Photo by Michael Kiparsky)

Fisher's groundwater research program is yielding valuable results just as California has begun a serious push for sustainable groundwater management throughout the state. Under the Sustainable Groundwater Management Act (SGMA) passed in 2014, new agencies are being established throughout the state to manage groundwater resources.

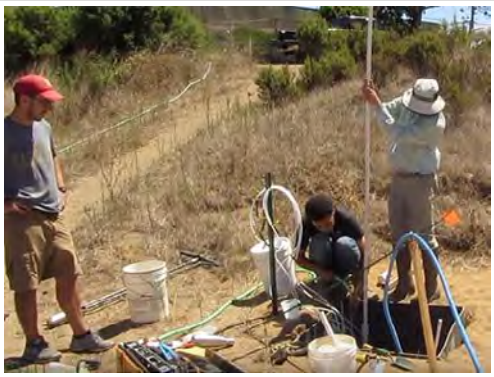
"This is a window of opportunity for us to get some of these ideas out there and give the agencies some choices and tools they can use," Fisher said. "California has an abundance of runoff. The problem is we don't have enough places to put it on the surface. We have a lot of space underground."

Fisher and his students have been working with the Resource Conservation District of Santa Cruz County to identify potential sites for groundwater recharge by mapping stormwater runoff and hydrologic conditions throughout Santa Cruz County and northern Monterey County. Their analysis identifies sites with both sufficient runoff and good conditions for infiltration of water into underlying aquifers. Their report, along with maps and other data from the project, is available online.

Beganskas noted that even in a dry year, a single intense storm can create a lot of runoff. Furthermore, many climate studies predict more extremes in precipitation patterns as global temperatures increase. That means more extremely wet years and extremely dry years. It also means more intense rainfall, with more of the rain running off rather than soaking into the ground.

"Both climate change and changes in land use, where development creates more impervious surfaces, are driving increased runoff. So that really motivates these efforts to collect runoff for recharging the aquifers," Beganskas said.

Groundwater recharge basins collect excess runoff during heavy rains and allow the water to infiltrate into the soil and replenish the groundwater supply.



Fisher's lab conducted experiments at recharge sites in the field, as well as in the laboratory using soil cores from field sites.

Recharge net metering

Fisher is also working to address the economic challenges of groundwater recharge projects. He proposed a program of "recharge net metering" to help landowners recover the costs of installing and operating groundwater recharge basins on their property. It was approved by the Board of Directors of the Pajaro Valley Water Management Agency in 2016 for a five-year trial, and Fisher said he hopes the program can serve as a model for other regions facing similar challenges.

"We've been trying to hit the problem at multiple levels by partnering with regional agencies and collaborating with other researchers," he said. Fisher serves as campus lead for the UC Water Security and Sustainability Research Initiative (UC Water), which is helping to build collaborations and partnerships to address water management issues.

The research on nitrate removal is part of a collaboration with microbiologist Chad Saltikov, professor and chair of microbiology and environmental toxicology at UC Santa Cruz, with funding from the Gordon and Betty Moore Foundation. In ongoing studies, the researchers are comparing the effectiveness of different carbon sources as soil amendments to stimulate nitrate removal, and they are investigating similar approaches for addressing other contaminants.

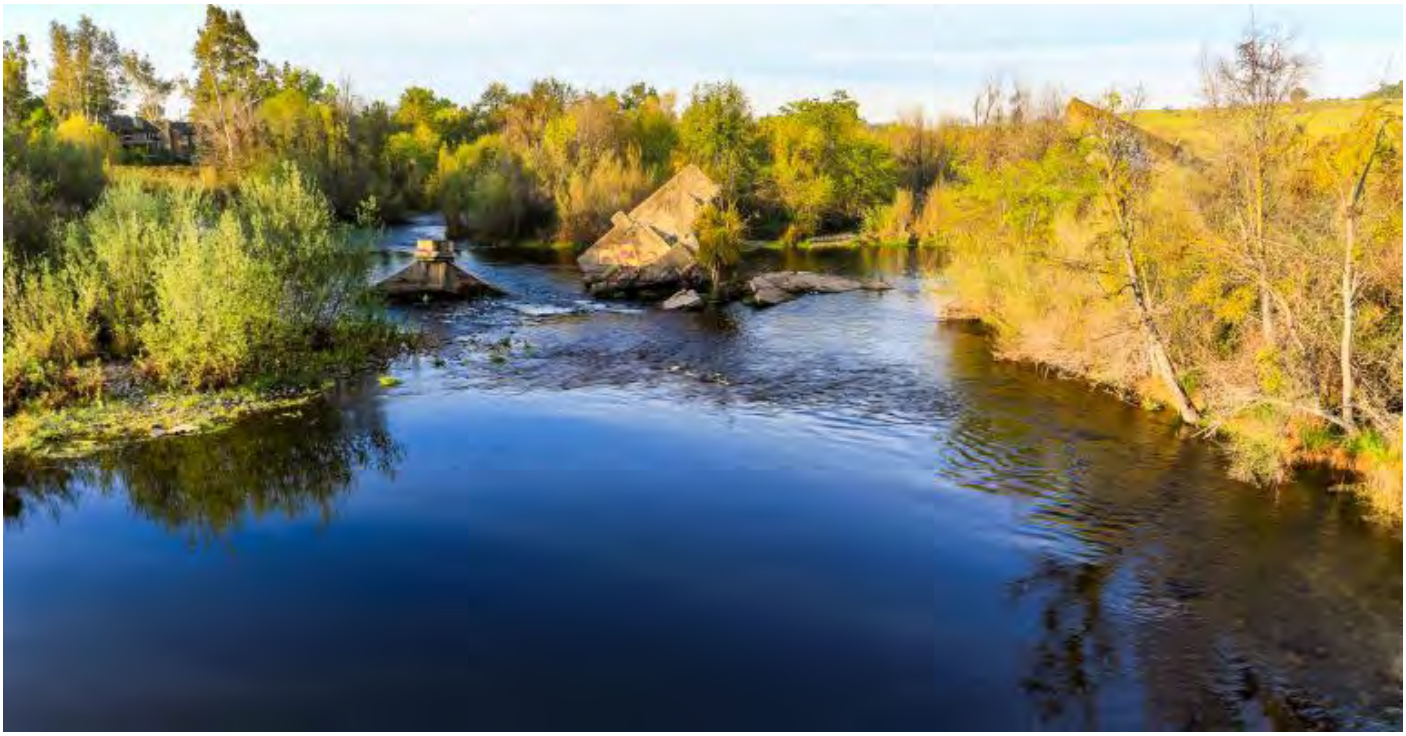
"Nitrate is arguably the most pervasive groundwater contaminant, so that was our number one concern," Beganskas said. "We are starting to look at other contaminants as well, such as arsenic, which is a growing concern in some areas."

Fisher said the Pajaro Valley has been a good site both for testing practical solutions and for doing interesting scientific research. The area is heavily dependent on groundwater and faces serious problems from overpumping, including saltwater intrusion from the coast. As a result, landowners and the regional water agency are highly motivated to try strategies like managed aquifer recharge.

"And there's good science to be done," Fisher said. "These recharge ponds give us a spotlight on the processes that occur as water infiltrates into the ground, and our findings are helping us design effective recharge strategies."

See Also

- UCTV Video: Growing Groundwater through Homes for Microbes
- UC Water Security and Sustainability Research Initiative



Unimpaired flows down rivers like the San Joaquin would have to increase in a state plan that opponents say will cripple the agriculture industry in California.

REGULATORY > WATER

Ag groups urge board to reject flows plan

More than 50 groups urge California's water board to renew efforts for voluntary agreements along key rivers.

Jul 31, 2018

Urging the state water board to reject a proposal to redirect flows in three Central California rivers, a coalition of more than 50 agricultural, water and business organizations encouraged the board today to renew efforts for voluntary agreements with affected water users.

“This unified response from groups representing farmers, ranchers, and urban and rural residents alike demonstrates the impact the water board’s proposal would have, and the need for the board to explore alternative methods that would help fish without the severe human cost of its current approach,” California Farm Bureau Federation President Jamie Johansson said.

Related: Capitol rally to protest water agency's Bay-Delta Plan

The State Water Resources Control Board is scheduled to vote on the proposal next month. It would commit much more water in the Stanislaus, Tuolumne and Merced rivers to “unimpaired flows” intended to benefit salmon and other fish.

The agricultural-water-business coalition said the proposal would have “large and unprecedented” impacts on the affected region and that “alternative pathways exist for the achievement of fish and wildlife goals.”

Well beyond the impacts to farms and water districts, the coalition said, shockwaves from the board’s proposal “are sure to ripple outward to adversely affect businesses, local governments and disadvantaged communities throughout the northern San Joaquin Valley.”

The coalition also warned that the proposal violates the state Constitution’s requirement that water be used reasonably, “by proposing the extraction of huge volumes of ‘unimpaired flows’ from otherwise legal and beneficial water users, at enormous human cost and without any reasonable and commensurate assurance of benefit to the environment.”

Describing the flow proposal as “an expedition in scientific uncertainty,” the coalition encouraged the board to support “voluntary and creative solution-finding” such as the use of functional flows—releasing just the right amount of water into rivers at the appropriate time to benefit fish—and non-flow alternatives including measures to create additional habitat or address species that prey on protected fish.

“Until every opportunity has been exhausted for creative conservation and collaboration,” the letter concluded, “a difficult and damaging regulatory path which is premised upon uncertain future fisheries successes should be avoided at all costs.”

The letter, drafted by CFBF, was signed by 54 organizations, including the Association of California Water Agencies; California Bankers Association; California Chamber of Commerce; Southern California Water Coalition; the Modesto and Turlock irrigation districts; agricultural and water organizations representing a wide range of crops, commodities and regions; and 26 county Farm Bureaus. The full text of the letter and full list of signatories may be found online.

Source: California Farm Bureau Federation

TAGS: REGULATORY

0 COMMENTS

RELATED

Summer almond irrigation can be challenging
AUG 01, 2018

USDA invests $164 million in upgrading rural water infrastructure
JUL 31, 2018

Farm's centennial a milestone for region
JUL 25, 2018

Lawmakers back WOTUS repeal, delist wolves in Interior bill
JUL 23, 2018

Does the Bay Area Have Enough Water for Economic Growth and Salmon?

A final draft of the state's plan to increase flows in key tributaries of the Bay-Delta will mean more water for fish but less for urban areas like the San Francisco Bay Area.

WRITTEN BY	PUBLISHED ON	READ TIME
Alastair Bland	July 31, 2018	Approx. 12 minutes

Traffic crawls along Highway 101 near San Francisco International Airport. George Rose/Getty Images

CALIFORNIA'S ECONOMY IS thriving and its population is growing. San Francisco County alone added more than 120,000 jobs in five years – a huge leap in economic productivity that owes itself largely to the lucrative worlds of finance, technology and biotechnology. As people from around the country and the world continue clamoring to find their place in one of the most expensive and most congested cities, an important question is emerging in public discussions: Does California have enough water to go around, or will natural resources be sacrificed for economic success?

"That's a question of carrying capacity and social values," said Peter Drekmeier, policy director of the environmental organization Tuolumne River Trust, which lobbies to protect the main waterway from which San Francisco receives its water.

Most Popular

1

Oil Boom in Southern New Mexico Ignites Groundwater Feud With Texas

Drilling new water wells is strictly regulated in New Mexico, causing hardship for an oil industry that needs water for fracking. So groundwater is being piped across the state line from Texas, prompting worry over the shared aquifer. July 16, 2018

2

New Groundwater Woes, and Regulations, in California Wine Country

July 2, 2018

3

Plug Pulled on Program Paying Farmers to Conserve Colorado River Water

Drekmeier is one of many who believe that California can grow as an economic powerhouse while maintaining productive aquatic ecosystems resembling their natural and unimpacted character – if, that is, water is divided fairly and consumed efficiently. Others, however, feel that the state's economy – including agriculture but also urban elements – will need more water in the future, even if this drives some fish species extinct.

These differing perspectives are at the heart of a current policy battle in California as the State Water Resources Control Board works to finalize a plan that will determine how much water should be left in critical rivers feeding the Sacramento-San Joaquin Delta. It's a decision that will impact not just fish and farms, but urban areas like the San Francisco Bay Area where strongly held environmental values may be challenged by economic aspirations.

Trouble for Fish

The Tuolumne River is a major tributary of the San Joaquin River, which feeds into the Bay-Delta, the linchpin for California's statewide water delivery system. It's also the

June 29, 2018

4 Efforts to Regulate California's Cannabis Capital Spark Legal Fight
June 25, 2018

5 Here's How the Largest Dam Removal Project in the U.S. Would Work
July 19, 2018

REPUBLISH THIS ARTICLE

place from which the San Francisco Public Utilities Commission draws the majority of its water to serve 2.7 million people in San Francisco, Alameda, San Mateo and Santa Clara counties.

As recently as the 1940s, more than 100,000 fall-run Chinook salmon spawned annually in the Tuolumne. In 2015, a little more than 100 of the fish swam up the river. Today, the river, studded with several dams and heavily diverted for human use, is considered by many to be in critical condition, and scientists and river advocates say what the Tuolumne and its native fishes need more than anything else is increased flows of water.

“Water is just one component of habitat, but it’s a very important one,” said Rene Henery, a biologist with the conservation group Trout Unlimited.

A worker holds a net as thousands of young fingerling Chinook salmon are released into a holding pen in the San Pablo Bay in June 2015 in Rodeo, California. (Justin Sullivan/Getty Images)

State agencies agree, and early in July the State Water Resources Control Board released its final draft of a plan to increase the amount of water left in the Tuolumne and two other San Joaquin River tributaries to about 40 percent of their historic, or "unimpaired," winter and springtime flows. This Bay-Delta Plan Update was announced on July 6 and would allow for flows as low as 30 percent and as high as 50 percent between February and June, a key period for juvenile salmon migrating toward the ocean.

"While multiple factors are to blame for the decline [in the Central Valley's Chinook salmon runs], the magnitude of diversions out of the Sacramento, San Joaquin and other rivers feeding into the Bay-Delta is a major factor in the ecosystem decline," the board said in a statement.

The water board will formally consider adopting the proposed amendment in late August, and if approved, the flow increases would be implemented by 2022. Proposed flow increases for the Sacramento River and its major tributaries, which also feed the Delta, are coming but have not yet been announced.

Supply Impacts

Eighty percent of the Tuolumne River is diverted before it reaches the San Joaquin for at least five months of the year, according to the Bay-Delta Plan. About 60 percent of the diverted water is used by farmers, with the rest going to the San Francisco Public Utilities Commission. The proposed flow increases would in most years double the amount of water that remains in the Tuolumne River and the lower reaches of the San Joaquin.

However, the water board's proposed plan appears to be a compromise that leaves both sides unhappy. Scientists and environmental advocates say the river would still need significantly more water than what is being suggested with the proposed flow increase in the Bay-Delta Plan. They want 60 percent of unimpaired flows. Water agencies and irrigation districts, though, oppose the proposal, for it would require them to give up a significant share of the water they currently use.

The San Francisco Public Utilities Commission, for instance, is concerned it will not have enough water to get through an extreme drought if the water board's

proposed target is realized. The commission aims to enforce water rationing of no more than 20 percent during an extended drought – a goal it claims is not achievable under the flow cuts proposed by the water board. According to the commission's assistant general manager for water, Steve Ritchie, the SFPUC currently uses an average of about 205 million gallons per day for its customers. Usage dipped to about 175 million gallons per day during the last drought.

Hetch Hetchy Reservoir in Yosemite National Park is the main storage area for the San Francisco Public Utilities Commission, which serves water to 2.7 million people the Bay Area. (Giuseppe Di Rocco, Getty Images)

Ritchie said the water board's proposed flow increases in the Tuolumne will impose severe hardships on his agency and its customers.

"We'd be looking at 50 percent cuts from where we are now," he said.

The average San Franciscan uses, on average, 44 gallons of water per day, he said. Half of that would amount to, by far, the lowest per capita water consumption rate of any city in the country – what Ritchie feels would be an unreasonable burden. The 60 percent flow desired by river advocates would strain water users even further. Ritchie noted that most of the conservation gains made during the last drought came from reductions in outdoor landscaping, both on public and private land. That means the additional water conservation that would be necessary under the water board's flow plan, combined with a drought, would place rationing burdens on indoor use, which could potentially have a harder economic and quality-of-life impact.

Nicole Sandkulla, chief executive and general manager of the Bay Area Water Supply and Conservation Agency, which represents SFPUC's wholesale customers in Alameda, San Mateo and Santa Clara counties, said her agency's customers reduced their water use by 27 percent on average during the last drought. The new

flow regime would require permanent use reductions of 25 percent or more beyond current consumption rates. That, she said, could threaten the region's urban economy. While water agencies would likely impose as much of the rationing as possible on residents, businesses – like restaurants and breweries – might face hardships, too.

"We strongly support the Bay-Delta Plan, but it's our responsibility to raise the question of how this will impact the core of the Bay Area," she said.

Drekmeier argues that the intensive cutbacks described by water agencies would not be necessary. That's because, throughout the last drought, the SFPUC's main reservoir – Hetch Hetchy Reservoir – remained mostly filled. At the end of the five-year dry spell, in fact, the commission had enough water in storage to last another three years. Ritchie explained this strategy is a necessary conservation measure to buffer against even more extreme droughts. If the last drought had lasted eight years, he pointed out, the commission would have been essentially out of water.

"In Australia, they had a drought that lasted 15 years," he said.

If, in an unlikely worst-case scenario, the utility commission's reservoirs did run dry, the agency could potentially buy water from farmers, though Ritchie said this idea – advocated by Drekmeier and others – has been tried already without success.

"In 2012 we offered $700 per acre-foot for water that farmers were buying for $7 an acre-foot, and they said no," he said. The farmers declined, he said, "because a lot of them have orchards. They need an ongoing water supply. They can't just fallow their fields."

Ecological Needs

It isn't just environmental advocates calling for more water. Research from state and federal agencies, in fact, shows that the water board's proposed target of 40 percent, with the flexibility to go as high as 50 percent, simply isn't enough to maintain large and self-sustaining salmon runs – a goal that environmental mandates require.

In a 2010 report on flow requirements in the delta, the State Water Resources Control Board itself concluded that the Sacramento River must be left with

75 percent of its unimpaired flows and the San Joaquin drainage with 60 percent during most of the winter and spring to protect public trust resources, like fish and other wildlife. That figure, however, was calculated without considering other needs, like municipal and agricultural, according to the board's Division of Water Rights Bay-Delta Team.

"The proposed updates to the Bay-Delta Plan are … meant to achieve reasonable protection for fish and wildlife considering these other needs for water," the board said in an email.

In a March 2013 report submitted to the water board, the California Department of Fish and Wildlife stated "that approximately 50-60 percent unimpaired flow is the minimum necessary to re-establish and sustain fish and wildlife beneficial uses" in the San Joaquin River system. It also warned the water board that existing allocations to farms, cities and environmental needs would lead to the deterioration of the rivers' ecosystem. "[T]he San Joaquin River and its tributaries have been tasked to provide more services than are sustainable," the department wrote.

More than any other component of habitat, salmon need water. Strong correlations exist between high-flow water years – like during El Niño events – and abrupt and dramatic spikes in adult salmon numbers two years later, when fish born in the river have grown to spawning size. In 1985, in the wake of the 1982–1983 El Niño, the Tuolumne's fall-run Chinook return jumped dramatically to 40,000 fish. By the early 1990s – right after a major drought – the Tuolumne's returns shriveled away, hovering in the low hundreds for several years. In 2000, after the 1997–1998 El Niño, almost 18,000 adult Chinook swam up the Tuolumne. Since 2005, the returns have averaged several hundred fish, jumping to 1,926 in 2013 – two years after the high-rainfall year of 2011.

On the other hand, when flows fall below a critical threshold, survival of young fish declines, said Jon Rosenfield, a conservation biologist with The Bay Institute. Temperatures increase to intolerable levels for eggs and smolts, the adjacent floodplain habitat dries up and the overall time period in which salmon will find favorable conditions is shortened from both ends.

The Tuolumne River winds though Tuolumne Meadows in Yosemite National Park. The river is the main source of water supply for the San Francisco Public Utilities Commission. (Brian van der Brug/Los Angeles Times via Getty Images)

But water isn't the silver bullet for keeping native aquatic ecosystems alive, farm lobbyists and other water users argue. They have long called for alternative actions, like controlling invasive aquatic plants, eliminating non-native predator fish like striped bass, eliminating levees to restore natural floodplain habitat and reducing water pollution as ways to restore crumbling salmon runs.

"There are hindrances to salmon survival and out-migration that are not flow-related," said Sandkulla.

This approach began in earnest in 1995, when a settlement between water users – including the SFPUC – and environmental groups and fishery agencies mandated that dam operations on the Tuolumne be modified to help increase salmon numbers. The settlement has resulted mainly in measures that don't involve sacrificing water

rights, and in the decades since, salmon returns on the Tuolumne have overall declined.

“They’ve had 23 years to show that non-flow measures will work, but they just don’t,” Drekmeier said.

Ritchie countered that the non-flow measures were not adequately applied in that time due to state funding shortages. In other words, he said, salmon recovery tools other than extra water haven’t been given an honest shot yet.

Living With Less

As both sides scrap over the last dregs of what was once a robust and thriving river, the question arises of whether or not the rapid growth of the Bay Area, a generally left-leaning region with an environmentally conscious population, is driving a slow but steady series of extinction events just to the east.

Robert Lackey, a fisheries scientist at Oregon State University, said economic growth – often accompanied by human population growth – has historically correlated to drastic declines in wild, naturally reproducing salmon runs, and he expects the same to eventually be true of California.

"By the end of the century, California will have European population densities – salmon don't stand a chance," he said.

He said the fish are not likely to go extinct – just dwindle in number.

"We'll always have boutique runs – museum pieces," he said, describing minuscule runs of wild spawning salmon that are too small to be fished but can become popular tourist attractions.

Henery, at Trout Unlimited, is working on a number of research, restoration and lobbying projects aimed at restoring wild salmon runs. He is hopeful there may be enough water in California's rivers to support both human needs and thriving fish populations.

"I think it's still totally possible to meet the doubling goals of the Central Valley Project Improvement Act," he said. That 1992 law mandates that actions be taken to restore self-sustaining, naturally spawning fish populations in the Sacramento and San Joaquin systems. The law has hovered almost lifelessly over water discussions ever since, while salmon numbers have generally declined.

Henery thinks the water board's proposed targets for flows could possibly lay the foundation for rebuilding the Central Valley's salmon runs if applied in tandem with aggressive habitat restoration work.

"Water goes further when you have intact habitat," he said.

For example, water that is allowed to flow downstream and across restored floodplain habitat will have more of a positive effect than water that is released from dams into river channels contained within levees. A great deal of research has shown that salmon smolts that have access to inundated riverbank habitat are several times more likely to survive their downstream journey to the sea than young fish contained within a fast-flowing channel of water. In other words, sufficient water must be combined with appropriate habitat for each of the various inland life stages – spawning, incubation, emergence, rearing and out-migration – of salmon.

Henery said he is pleased that the water board has suggested targets for increased flows but said he is disappointed that the proposal has not been accompanied by detailed restoration project plans.

Salmon remain relatively plentiful in California only because fish hatcheries release millions of baby salmon each year. Without these facilities, the state's Chinook runs – largest in the Sacramento and Klamath basins – would collapse in just several years.

When it comes to water, humans in California do not face existential threats.

"The water board would never actually let San Francisco run out of water – that won't happen," Rosenfield said.

He discounts claims from the SFPUC that San Francisco is threatened by drought. The city, he said, could reduce its current demands for water through more water recycling, mandatory or subsidized installment of efficient toilets and showerheads, improved irrigation efficiency on public and private lands and fixing its own system's leaking pipes.

"There is so much low-hanging fruit," he said. "San Francisco is way behind the curve."

The commission is, in fact, looking at the possibility of potentially investing in a desalination plant and a potable reuse facility –

projects that Ritchie said, if implemented, could take 10 years to build. He is reluctant to impose further hardships on the agency's customers but recognizes challenges ahead for preserving river ecosystems in California.

"We'll need to be really creative and efficient in how we use water," he said. "Regulatory difficulties aside, nature is likely to become a problem for us as the climate changes." He foresees long droughts and the occasional disastrous flood as future climate realities.

Henery believes there is room in California for salmon if people make a little space, and probably sacrifice some water.

"Fish do absolutely everything they can to survive in the wild," he said. "Are people in California doing everything they can to use water more efficiently and get by with less? I don't think so." ■

#BAY DELTA PLAN #SALMON #SAN FRANCISCO #TUOLUMNE RIVER

About the Author

Alastair Bland

Alastair Bland is a freelance journalist in San Francisco, CA. He can be reached at allybland79@gmail.com or via Twitter.

Most Popular Stories

1 **Oil Boom in Southern New Mexico Ignites Groundwater**