



SAN FRANCISCO
BAYKEEPER



Merced River
Conservation Committee

NORTHERN
CALIFORNIA COUNCIL



FEDERATION OF
FLY FISHERS



May 25, 2023

Division of Water Rights Mail Room
Attn: San Joaquin Unit
State Water Resources Control Board
1001 I Street, 2nd Floor
Sacramento, CA 95814

RE: NOP Comment Letter – Tuolumne River Voluntary Agreement

Dear Chair Esquivel and Members of the Board:

On behalf of the Natural Resources Defense Council, San Francisco Baykeeper, the Bay Institute, Pacific Coast Federation of Fishermen’s Associations, Institute for Fisheries Resources, Sierra Club California, California Sportfishing Protection Alliance, Friends of the River, Tuolumne River Conservancy, Merced River Conservation Committee, Tuolumne River Trust, Northern California Council Fly Fishers International, Central Sierra Environmental Resource Center, Restore the Delta, and Golden State Salmon Association, we are writing to provide written comments on the Notice of Preparation for a Possible Amendment of the Bay-Delta Plan to Incorporate Voluntary Agreement for the Tuolumne River (“NOP”).

We are disheartened to see the State Water Resources Control Board (“State Water Board”) spending its limited time and resources – and the public’s limited time and resources – to re-analyze the proposed Tuolumne River Voluntary Agreement (“Tuolumne River VA”). The State Water Board has repeatedly reviewed the Tuolumne River VA and concluded that it would not provide reasonable protection for fish and wildlife beneficial uses or attain objectives of the Bay Delta Water Quality Control Plan (“Bay-Delta Plan”). Indeed, extensive scientific evidence produced by state and federal agencies over the past decade have demonstrated that the Tuolumne River VA is inadequate to protect fish and wildlife and is inconsistent with the best available science, including:

- The California Department of Fish and Wildlife and National Marine Fisheries Service concluded that the State Water Board’s 2012 proposal to require only 35 percent of unimpaired flow from the Stanislaus, Tuolumne, and Merced Rivers failed to provide reasonable protection of fish and wildlife, including salmon and steelhead, with NMFS explicitly finding that this proposal “is not adequate to achieve a viable salmonid population in the San Joaquin River system.” California Department of Fish and Wildlife concurred, and further noted, “without significant improvements to instream flows, implementation of non-flow measures will not meet the salmon doubling objective or protect fish and wildlife beneficial uses.”
- The California Department of Fish and Wildlife’s January 3, 2017 presentation to the State Water Board explained that habitat restoration on the Tuolumne River had not resulted in meaningful increases in salmon populations, whereas flow increases on the Stanislaus River significantly increased salmon abundance and survival, concluding that these “results indicate restoration action that primarily focuses on flow improvements are by far out producing those results produced by emphasis on non-flow actions.”
- The National Marine Fisheries Service’s 2020 independent peer review of the Chinook salmon population model prepared by the proponents of the Tuolumne River VA raised significant concerns regarding the accuracy of the model, including the model’s unjustified assumptions regarding predator control. The independent peer review concluded that the model demonstrates that: (1) very substantial increases in flow during the spring are necessary to prevent extirpation of salmon from the Tuolumne River, given the very low current survival rates; and (2) gravel augmentation, other non-flow actions, and increasing flow during spawning are likely to provide small or negligible benefits, particularly compared to the benefits of increased flow during the February to June period.
- The U.S. Environmental Protection Agency’s February 8, 2023 letter to the State Water Board regarding the proposed Bay Delta voluntary agreement explained that, “The Draft Supplement’s conclusion that marginal increases in flow are sufficient to protect salmon is not consistent with statements in previous SWRCB documents or the literature which state that substantial increases in flow are necessary to protect Delta fish, including salmon,” that “The draft report does not evaluate the effects of water temperatures on salmon and needs to do so,” and that “The Draft Supplement’s heavy reliance on habitat increase with only marginal flow increase will be most disproportionate during dry periods when aquatic life need flow the most.”

The overwhelming scientific evidence demonstrates that the Tuolumne River VA fails to provide reasonable protection of salmon or other fish and wildlife and fails to use the best available science. We urge the State Water Board to withdraw the NOP and focus on fulfilling its mandatory legal obligation to “fully implement” the flow requirements on the Tuolumne, Stanislaus, Merced, and Lower San Joaquin Rivers “by 2022.” Bay-Delta Plan at 24; *see* Cal. Water Code § 13247.

I. Subsequent Environmental Analysis is Required to Consider the Tuolumne River Voluntary Agreement Because it Violates the Bay-Delta Plan:

As the NOP explains, the proposed Voluntary Agreement for the Tuolumne River would result in instream flows that fail to meet the minimum flow requirements of the Bay-Delta Plan – even less than the minimum thirty percent of unimpaired flow under the adopted adaptive management range. The State Water Board has repeatedly found that flows less than 40 percent of unimpaired flow fail to provide reasonable protection for the Tuolumne River’s salmon and other native fish. *See, e.g.,* State Water Resources Control Board, Final Water Quality Certification for the Turlock Irrigation District and Modesto Irrigation District Don Pedro Hydroelectric Project and La Grange Hydroelectric Project, January 2021, at 23-24, 26.¹ Therefore, in order for the proposed Tuolumne River VA to be implemented, the State Water Board would have to weaken the narrative and numeric flow objectives for the Tuolumne River at Modesto in the Bay-Delta Plan to adopt an amendment that requires significantly less instream flow than what is currently required.

The approach to amending the Bay-Delta Plan described in the NOP appears unlawful. The NOP states that, “Specifically, it is anticipated that the program of implementation would be modified to allow for the Tuolumne River Voluntary Agreement to be implemented for the proposed 8-year period, with the possibility of extension.” NOP at 4. This approach appears to violate state law absent changes to the numeric flow objectives in the Bay-Delta Plan, as the Program of Implementation must achieve the narrative and numeric standards of the Bay-Delta Plan. *See, e.g.,* Cal. Water Code §§ 13050(j)(3), 13242, 13247; *In re State Water Board Cases*, 136 Cal.App.4th 674, 726-730, 732 (2006). The numeric and narrative flow objective for the Tuolumne River at Modesto in the Bay-Delta Plan would have to be amended to be consistent with the inadequate flow requirements proposed in the Tuolumne River Voluntary Agreement.

Ultimately, however, because the Tuolumne River VA fails to achieve the narrative fish viability objective, the State Water Board cannot lawfully approve it.

In addition, the Tuolumne River VA does not propose to modify the Bay-Delta Plan’s already inadequate minimum flow requirement at Vernalis. The Board must analyze whether the minimum flow requirement at Vernalis can be met under the Tuolumne River VA, and must either require more flows than the Tuolumne River VA requires from the Tuolumne River or require increased flow contributions from water rights holders on the Merced and Stanislaus Rivers.

¹ The proposed Tuolumne River VA is substantially similar to the FERC staff recommended flows, which the State Water Board specifically rejected in this water quality certification.

II. Limitations on Tiering from the 2018 SED:

The NOP proposes that this SED will tier to the 2018 SED. However, because the proposed Tuolumne River VA is fundamentally different from the alternatives analyzed in the 2018 SED, this SED cannot tier to the 2018 SED with respect to several important issues.

First, this SED cannot tier to the 2018 SED with respect to whether the Tuolumne River VA or other alternatives are adequate to implement and achieve the existing salmon protection objective in the Bay-Delta Plan. The Tuolumne River VA explicitly proposes to implement the existing narrative salmon protection objective in the Bay-Delta Plan, though it proposes to delay achievement of the narrative objective until the year 2050. *See* Term Sheet at §§ 1.2(A), (C). In contrast, the State Water Board argued in Superior Court, and the Court agreed, that the 2018 Amendments to the Bay-Delta Plan did not implement the existing narrative salmon protection objective. As a result, the 2018 Amendments to the Bay-Delta Plan and SED could not have sufficiently considered whether the alternatives were adequate to achieve the existing salmon protection objective. Thus, this SED must evaluate – without tiering to the 2018 SED – whether the proposed Tuolumne River VA and other alternatives are sufficient to achieve the existing salmon protection objective.²

Second, this SED cannot tier to the 2018 SED with respect to analyses that are based on modeled flows, rather than analyses based on minimum required flows. Unlike the 2018 Amendments to the Bay-Delta Plan, the Tuolumne River VA does not propose a specific flow requirement that would apply to and be enforceable against all water rights holders on the Tuolumne River. The record established by the State Water Board demonstrates that although existing flows exceed minimum requirements in certain years, new flow requirements are necessary in order to ensure that flow conditions are not degraded in the future as a result of new water diversion and storage projects or increased diversions under existing water rights. *See, e.g.*, 2017 Scientific Basis Report at 1-5, 5-10, 5-24; 2018 Framework at 6, 7, 17.

In contrast, the Tuolumne River VA does not identify specific flow requirements or guarantee that the modeled flows will occur, nor does it propose to prohibit new water diversions, new water storage projects, or increased water diversions by existing water rights holders, all of which would reduce flows compared to the results modeled in the 2018 SED. In addition, the Bay-Delta Voluntary Agreement assumes the purchase of environmental water (including on the open market) and environmental water from water storage projects that are not yet permitted. These flows are not reasonably certain to occur. Thus, Tuolumne River flows, flows into the Delta, and Delta outflows are almost certain to be less than the modeled results.

² Relatedly, as discussed *infra*, this SED must also analyze whether the Tuolumne River VA's proposal to delay achievement of the existing salmon protection objective to the year 2050 violates the State Water Board's anti-degradation policies.

Finally, the analysis in this SED must address new scientific studies that post-date the 2018 SED and analyses of impacts that were not included in the 2018 SED, including:

- The 2022 peer reviewed study by Willis et al, which found that a functional flow regime on the Tuolumne River would require significantly greater instream flows than the requirements of the Bay-Delta Plan (40 percent unimpaired flow) in dry, average and wet years; on average their functional flow regime was found to require approximately 64 percent of unimpaired flow. Willis et al 2022; *Finding the Sustainable Nexus of Hydropower and Environmental Flows in the San Joaquin River Watershed, California*. Front. Environ. Sci. 10:787711. doi: 10.3389/fenvs.2022.787711;
- The independent scientific peer review of the Tuolumne River fish population models facilitated by the National Marine Fisheries Service in 2020;
- The effects of reduced Delta inflows and Delta outflows on the frequency, magnitude, and duration of harmful algal blooms in the Delta (*see, e.g.*, Lehman et al. 2020, Lehman et al. 2022), which is particularly important given the proposed reduction in Delta inflows relative to the Bay-Delta Plan during the month of June under the proposed Tuolumne River Voluntary Agreement;
- Updated information regarding demand for water in the San Francisco Public Utility Commission (“SFPUC”) retail and wholesale service area, which is significantly lower than maximum contract amounts, and updated information showing very limited economic impacts from the reduction in water supply due to severe drought in recent years in the service areas of SFPUC and Bay Area Water Supply & Conservation Agency (“BAWSCA”), contrary to SFPUC’s assertion that billions of dollars in economic harm would arise from implementation of the Bay-Delta Plan;
- The SFPUC’s initial study of large-scale potable water recycling in San Francisco in 2022, which found that a 38.5 million gallon per day purified water project at the Southeastern Treatment Plant (which could reduce demand for diversions from the Tuolumne River) had an estimated cost of \$1,711 per acre foot, which is competitive with existing water rates. *See* San Francisco Public Utilities Commission, San Francisco Purified Water Opportunities Study, May 2022, at 2-68, available online at: https://sfpuc.org/sites/default/files/programs/PurifiedWaterOpportunitiesStudy_May2022_Final.pdf;
- Scientific studies of the effects of floodplain restoration on the survival and abundance of salmon, which have generally found that floodplain restoration may improve life history diversity and export food/prey to the river environment, but which have not found increased survival or abundance of salmon as a result of floodplain restoration (Takata et al 2017; Pope et al 2018; Johnson et al 2018; Sturrock et al 2022; *see also* Exhibit A);
- The peer reviewed study by Nobriga et al, which concludes that salmon survival is nearly zero when water temperatures exceed 16 degrees Celsius and that San Joaquin River inflow to the Delta has an inverse relationship with temperature during the April to June period (more flow results in lower water temperatures, which should increase survival). Nobriga et al 2021. Coldwater fish in a warm water world: Implications for predation of

salmon smolts during estuary transit. *Ecology and Evolution*.
<https://doi.org/10.1002/ece3.7840> C.;

- Peer-reviewed studies showing that increased flow generally reduces water temperatures, at least at certain times of the year. Bashevkin, S.M. and B. Mahardja. 2022. Seasonally variable relationships between surface water temperature and inflow in the upper San Francisco Estuary. *Limnology and Oceanography* 67(3) DOI: 10.1002/lno.12027; Vroom, J., van der Wegen, M., Martyr-Koller, R. C., & Lucas, L. V. 2017. What determines water temperature dynamics in the San Francisco Bay-Delta system? *Water Resources Research*, 53, 9901–9921. <https://doi.org/10.1002/2016WR020062>;
- Scientific studies concluding that predator control programs have failed to result in improved survival of salmon in the Bay-Delta watershed. *See, e.g.,* Michel et al 2020. Limitations of active removal to manage predatory fish populations. *North American Journal of Fisheries Management*, 40, 3–16. <https://doi.org/10.1002/nafm.10391> (which found “no statistically significant evidence for an effect of predator removals or additions on survival rates of Chinook Salmon (as measured by acoustic tags) or on predation rates (as measured by PERs), despite a one-time reduction of approximately 40–70% of all predators from ‘removal’ sites and relocation to ‘addition’ sites.”);
- Scientific studies and reports demonstrating (or predicting) that physical habitat restoration projects in the Tuolumne River have had little or negligible benefits in terms of improved salmon survival. *See infra*.

III. The SED Must Consider a Reasonable Range of Alternatives:

CEQA requires that an environmental impact report analyze a reasonable range of alternatives to the proposed project, including a no project alternative. Cal. Pub. Res. Code §§ 21002, 21061, 21100; tit. 14, Cal. Code Regs. § 15126.6. In this SED, the State Water Board must consider several alternatives that require greater minimum instream flow to implement the existing narrative salmon protection objective. All of the alternatives should be evaluated at the same level of detail (project specific versus programmatic).

For the Tuolumne River, the SED should evaluate:

- One or more alternatives that includes year-round minimum instream flows, with winter-spring flows based on a percent of unimpaired flow equal to or greater than 50 percent of unimpaired flow, and upstream reservoir storage and water temperature requirements in order to implement both the existing narrative salmon protection objective and the narrative fish viability objective;
- One or more alternatives that evaluates whether the Fourth Agreement between the San Francisco Public Utilities Commission and irrigation districts is unreasonable under Article X, section 2 of the State Constitution and that evaluates water supply reductions on the Tuolumne River based on seniority of water rights.

In addition, the Board should evaluate one or more alternatives that designate Tribal Beneficial Uses, in consultation with relevant Tribes.

IV. The Environmental Baseline for this SED is the Bay-Delta Plan, Including the Minimum Tuolumne River Flow Requirements Pursuant to the 2018 Amendments to the Bay-Delta Plan:

The environmental baseline for analysis in this SED must be the minimum flows required by the 2018 Amendments to the Bay-Delta Plan, as use of an alternative baseline would be misleading to the public and decisionmakers. CEQA requires that the proposed project and alternatives be analyzed against the existing environmental conditions (the “environmental baseline”), in order that the Project’s environmental impacts can be meaningfully analyzed and compared to alternatives. Cal. Code Regs., tit. 14, § 15125(a); see *County of Amador v. El Dorado County Water Agency*, 76 Cal.App.4th 931, 952 (1999); *Neighbors for Smart Rail v. LA County Metropolitan Transit Authority*, 57 Cal. 4th 310, 315 (2013). That environmental baseline is generally existing conditions at the time of the Notice of Preparation. Cal. Code Regs., tit. 14, § 15125. Under CEQA, the DEIR must “delineate environmental conditions prevailing absent the project, defining a ‘baseline’ against which predicated effects can be described and quantified.” *Neighbors for Smart Rail*, 57 Cal.4th 439, 447 (2013) (citing *Communities for a Better Environment v. South Coast Air Quality Dist.*, 48 Cal.4th 310, 315 (2010)). The purpose is to provide a “realistic baseline that will give the public and decision makers the most accurate picture practically possible of the project’s likely effects.” *Neighbors for Smart Rail*, 57 Cal.4th at 449 (citing *Communities for a Better Environment*, 48 Cal. 4th at 322, 325, 328).

Here, the Bay-Delta Plan requires that its Tuolumne River flow requirements be “fully implemented... by 2022.” While the State Water Board has failed to fulfill this legal obligation, the environmental baseline must include these minimum flow requirements. Excluding these existing compliance obligations from the environmental baseline in this DEIR would bias the environmental analysis, because the State Water Board already considered the environmental impacts of these instream flow requirements in the 2018 SED, and would be misleading to the public and decisionmakers. See *Neighbors for Smart Rail*, 57 Cal. 4th at 457; *Communities for a Better Environment*, 48 Cal.4th at 315.

V. The SED Must Evaluate the Likely Significant Environmental Impacts from the Tuolumne River Voluntary Agreement, Including Cumulative Impacts:

Below we identify several likely significant impacts that should be analyzed in the SED:

- The violation of numeric and narrative water quality objectives required under the Bay-Delta Plan constitutes a significant impact under CEQA;
- Water temperature impairment of the Tuolumne River, and resulting adverse effects on Chinook salmon, Central Valley steelhead, and other native migratory fishes;
- Reduction in survival of fall-run Chinook salmon, spring-run Chinook Salmon, and Central Valley steelhead, and other native migratory fishes;
- Failure to achieve the narrative fish viability objective;

- Failure to achieve the narrative salmon protection objective (salmon doubling);
- Reduction in flows in the San Joaquin River mainstem, and resulting adverse effects to spawning and early juvenile rearing success of White Sturgeon, Sacramento Splittail, and other native migratory fishes;
- Reduction in Delta outflow and resulting adverse effects on the abundance and survival of native fish species migrating through the Delta and water quality downstream in the Delta;
- Waiver of the Tuolumne River VA’s proposed Tuolumne River flows during drought conditions, including through Temporary Urgency Change Petitions (“TUCPs”), increased frequency of TUCPs to waive Delta water quality standards because of reduced contributions to flow from parties other than the CVP and SWP, and the adverse effects on salmon and other fish and wildlife from waivers of minimum flows and D-1641 requirements during droughts;
- Violations of the State Water Board’s anti-degradation policy, including but not limited to extending the time for implementation of the existing salmon protection objective to the year 2050;
- Likely increase in the frequency and magnitude of harmful algal blooms in the Delta, particularly as a result of instream flow reductions in the month of June.

In addition, the SED’s analysis of potential environmental impacts resulting from the Tuolumne River VA cannot assume that physical habitat restoration in the Tuolumne River will improve survival of salmon or other species, without citing specific scientific studies demonstrating such benefits. The administrative record is replete with information demonstrating that prior physical habitat restoration projects on the Tuolumne River have not meaningfully improved salmon survival. For instance, as several of our organizations noted in 2017 comments to the State Water Board, consultants for Turlock Irrigation District and Modesto Irrigation District have admitted that post-project monitoring revealed that the Special Pool Run 9 and 11 project did not meaningfully increase salmon survival or decrease predator density. Similarly, the California Department of Fish and Wildlife’s 2016 presentation to the State Water Board concluded that there was little evidence that habitat restoration projects on the Tuolumne River had improved salmon survival or abundance, particularly as compared to increases in instream flow. And NMFS’ 2020 independent scientific peer review of the Chinook salmon population model prepared by the proponents of the Tuolumne River VA concluded that gravel augmentation and other non-flow measures were likely to have small or negligible benefits on salmon survival. As a result, the SED cannot assume that physical habitat restoration is expected to have population level benefits to salmon.

Equally important, the SED’s analysis of potential environmental impacts from the Tuolumne River VA cannot rely on the salmon population model that consultants for Turlock Irrigation District and Modesto Irrigation District, which featured prominently in the FERC relicensing of the Don Pedro Project. As noted *supra*, the independent scientific peer review organized by

NMFS rejected the population model’s **assumption** that predator removal would result in proportional increases in survival.³

And as discussed *supra*, the analysis of impacts in this SED cannot rely on modeled flows or resulting flows that are not reasonably certain to occur, but instead must focus on flows that are required and protected from diversion.

VI. The Geographic Scope of Analysis Must Include Analysis of Changes in Delta Outflow and their Effects on Fish and Water Quality:

Finally, the SED must evaluate the effects of reductions in instream flow under the Tuolumne River Voluntary Agreement on Delta outflow, and the biological effects on fish and water quality from reduced Delta outflow. This includes the purported outflow protection per section 8.3 of the Voluntary Agreement Term Sheet (“All San Joaquin River watershed flows required as a result of implementing the 2018 Bay Delta Plan Update or VAs will be protected as Delta outflows to the maximum extent feasible.”). Because the Term Sheet does not describe the mechanism for such protection as outflows or the criteria for determining the feasibility of such protection, the SED must consider these purported effects on Delta outflows as speculative and not reasonably certain to occur, and the modeling should not assume the flows under the Tuolumne River VA Voluntary Agreement contribute to Delta outflow.

³ As described by consultant Noah Hume of Stillwater Sciences in a February 5, 2021 public workshop conducted by the San Francisco Public Utilities Commission,

The [salmon population] model was constructed as an individual-based modeling [of] spawners through eggs and fry and all the way out to smolt[s]. What we used, was an assumption that the predation or the observed mortality between the traps we saw was proportional to the population size of predators in the river. And so, we took that and said, ok, we don't know the functional relationship in terms of relaxation of [predation] or compensatory [predation] and the things you were just talking about, so we'll go with a one to one and that's what we did. We basically said if we can reduce predator populations by 10%, our [predation] rates would go down by 10%. ... we had to make some operational assumption and that's what we did. ... We have done mixing and matching of measures and in fact, the predator control measure is the biggest sort of bang for your buck.

This stunning public admission affirms that the creators of the Districts’ salmon population model:

- did not know the effect of removing bass from lower Tuolumne River on juvenile salmon survival;
- simply assumed a one-to-one relationship between the removal of a percentage of bass and the survival of a percentage of juvenile salmon;
- relied most heavily in their model on the output from a relationship they simply made up.

VII. Conclusion:

Thank you for consideration of our views. Please contact us if you have any questions regarding these comments.

Sincerely,



Doug Obegi
Natural Resources Defense Council



Jon Rosenfield, Ph.D.
San Francisco Baykeeper



Gary Bobker
The Bay Institute



Glen Spain
Pacific Coast Federation of Fishermen's
Associations
Institute for Fisheries Resources



Erin Woolley
Sierra Club California



Chris Shutes
California Sportfishing Protection Alliance



Jan Dorman
Friends of the River



Allison Boucher
Tuolumne River Conservancy



Michael Martin
Merced River Conservation Committee



Mark Rockwell
Northern California Council, Federation of Fly
Fishers

NOP Comment Letter – Tuolumne River Voluntary Agreement
May 25, 2023



Peter Drekmeier
Tuolumne River Trust



Barbara Barrigan-Parrilla
Restore the Delta



John Buckley
Central Sierra Environmental Resource Center



Scott Artis
Golden State Salmon Association