The Bay Institute
Defenders of Wildlife
Natural Resources Defense Council
Pacific Coast Federation of Fisherman's Associations
Golden Gate Salmon Association

By email and hardcopy

November 9, 2017

Felicia Marcus, Chair
c/o Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
P.O. Box 100, Sacramento, CA 95812-2000

RE: INPUT TO INFORM THE DEVELOPMENT OF THE PROGRAM OF IMPLEMENTATION FOR THE PHASE 2 UPDATE TO THE BAY-DELTA PLAN

Dear Chairperson Marcus,

This letter is submitted as the comments of the Bay Institute, Defenders of Wildlife, the Natural Resources Defense Council, the Pacific Coast Federation of Fishermen's Associations and the Golden Gate Salmon Association regarding the State Water Resources Control Board's (SWRCB's) October 4, 2017 call for input to inform the development of the Program of Implementation for the Phase 2 Update to the Bay-Delta Plan (Water Quality Control Plan for the San Francisco Bay/Sacramento- San Joaquin Delta Estuary, or WQCP).

Responses to the SWRCB's call for input

Q1 What specific provisions should be included in the program of implementation to ensure the expeditious implementation of the inflow and cold water habitat objectives?

> *1.a. How long should the State Water Board allow for voluntary tributary or regional plans to be developed and implemented to meet the inflow and cold water habitat objectives and what are the minimum provisions those plans should include to be acceptable?*
>
> *1.b. What measures should the State Water Board take to implement the inflow and cold water habitat objectives if satisfactory voluntary tributary or regional plans are not developed?*

Given the precarious state of numerous native Bay-Delta fish and invertebrate species, and the habitats and ecological processes they rely on, that depend on the flow of fresh water in, through, and out of the Delta (as well documented in the final Scientific Basis

Report), the broad scientific consensus that flow conditions are inadequate to protect fish and wildlife beneficial uses and public trust resources (e.g., the findings of the SWRCB's 2010 Delta flow criteria report), and the long delay in updating and revising the existing, insufficiently protective WQCP objectives, time is of the essence. The SWRCB must provide rapid relief for the Bay-Delta estuary and the rivers which feed it, as these ecosystems have been poorly protected by existing water quality standards and there is a very real risk of permanent loss of these beneficial uses and resources, including both species and habitat types.

The Program of Implementation (POI) should make it clear that immediately following the completion of Phase 2, the SWRCB will commence the Phase 3 proceedings to allocate responsibility for meeting the WQCP objectives among water rights holders throughout the Bay-Delta watershed, and that Phase 3 will address water rights holders' responsibilities for flow contributions to protect estuarine habitat, fish migration and other fish and wildlife beneficial uses of the Bay-Delta estuary *and* to ensure conditions that support these uses throughout its watershed. The POI should also make clear that any voluntary plan that is not fully consistent and compliant with WQCP objectives will be rejected. In addition to being the legally and environmentally necessary action to take, initiating and pushing aggressively to complete the Phase 3 proceedings represents the best incentive for water rights holders and other parties to expeditiously develop voluntary tributary and regional plans to implement the WQCP.

The POI should also identify specific, measurable, achievable, relevant and time-bound (SMART) targets that define desired biological and environmental outcomes of implementing the WQCP and related actions, which will be used to evaluate the efficacy of, and identify necessary modifications to, WQCP implementation. Any voluntary plans must demonstrate not only that they will comply with WQCP requirements but that each plan is designed and expected to achieve relevant SMART targets. The articulation of SMART targets and a watershed approach in the POI will provide water users with guidance regarding the necessary level of protection and geographic distribution of improved flow conditions that any voluntary plan must meet or exceed in order to be acceptable to the SWRCB.

Although water management and reservoir operations are complex, there are substantial modeling tools available to water users to evaluate different scenarios for implementing the WQCP, and ample time for water users to do so during the period leading up to and immediately following adoption of final Phase 2 amendments to the WQCP by the SWRCB. Therefore, the SWRCB should call for the submission of voluntary plans within six months of a final Phase 2 decision; these plans should be able to be implemented immediately following approval by the SWRCB, and the SWRCB should commit to review and approval or disapproval of the plans within three months of submission.

Finally, the adoption of SMART targets in the POI should incentivize water rights

holders to develop and implement physical habitat restoration and other "non-flow" actions, in addition to the SWRCB requiring such actions as part of the POI under its own authority. TBI et al strongly support the implementation of large-scale restoration of wetland, floodplain and riparian habitats to provide broad, ecosystem-level benefits. It is also possible that restoration of functional habitat may be shown over time to effectively help achieve SMART targets for beneficial uses and public trust resources, and as a result less flow may be needed to support achieving those targets. However, the vast scientific record makes clear that there are powerful, widespread, persistent, and statistically significant biological and environmental responses to flow conditions, and that flow augmentation remains the single most effective management strategy to ensure protection and restoration of estuarine species and habitats. No plan to implement the WQCP, whether through a Phase 3 decision or a voluntary plan (which would be approved by the SWRCB), should defer full flow augmentation to comply with the WQCP's numeric objectives (i.e., the highest level within a permitted range) because of proposed habitat restoration actions. Rather, full flow augmentation should be required until such time as habitat restoration or other actions have been scientifically demonstrated to effectively help achieve the WQCP's SMART targets in lieu of some portion of required flow, and the SWRCB determines that a lower level of flow within the permitted range will not adversely affect the achievement of SMART targets or the fish and wildlife beneficial uses they measure.

2. How should the State Water Board ensure that water released to meet objectives is protected through the system and not rediverted for other purposes?

The final Report proposes a new Delta inflow numeric objective based on percentage of unimpaired flow, and a new Delta outflow numeric objective that is equivalent to the flow released to meet the Delta inflow objective. While we strongly support the direction the SWRCB is going with these objectives, there are several problems that need to be addressed in order to correctly execute this approach. (For a discussion of why the Delta inflow objectives should be based on the Delta outflow objective and not the other way around, see our November 9, 2017, comment letter regarding the final Scientific Basis Report).

First, compliance points should be identified not only where Central Valley rivers enter the Delta, but at appropriate locations upstream along Central Valley rivers to ensure that individual water user, tributary and/or regional flow releases are being made as required. In addition, groundwater withdrawals from aquifers that feed Central Valley rivers increase the likelihood that modeled reservoir releases will not be sufficient to comply with downstream flow requirements. Upstream of the Delta, compliance points below rim dams and below each point of diversion should complement specific Delta inflow and outflow compliance points. Existing and new gage locations should be identified for monitoring each flow requirement, with travel time, accretions, depletions, diversions,

and return flows quantified between each compliance point. Currently, daily unimpaired flow data are generally available within about 3 days.

Second, compliance needs to be required and measured downstream in the Bay-Delta estuary itself to ensure that required Delta inflows translate into the required Delta outflows. The WQCP should include both specific compliance points for the Delta outflow objective and must limit water diversions in order to ensure that the required Delta outflows are actually being achieved. Legally enforceable limitations on diversions and exports to ensure Delta inflows are protected through the Delta are critical, and must be implemented in Phase 3 and as a part of any voluntary plan for the Delta. We are available to work with the SWRCB on identifying specific compliance points and developing quantitative criteria and legal mechanisms to protect Delta outflows.

Q. *3. What improvements should be made to measure compliance with the existing Delta outflow objectives (that are intended to be retained), and with the proposed new inflow based Delta outflow objectives?*

The Net Delta Outflow Index (NDOI) has major flaws that often result in overestimates of Delta outflow, sometimes to a substantial degree. At a minimum, the SWRCB should work with the U.S. Geological Survey, the Watershed Sciences Center at the University of California Davis, and other experts to (a) periodically adjust calculation of the NDOI when the Delta water balance changes (such as in 2015), and (b) develop better methods for measuring Delta outflow directly. If and when new reliable direct measurements of net Delta outflow are developed, the adoption of these new methods is contingent on adjusting implementation of the WQCP objectives to ensure that they provide the same or better level of protection for beneficial uses and public trust resources (e.g., to the degree that NDOI is a biased estimator of outflow, then replacing NDOI with some other measure of outflow should not result in lower actual outflows). The SWRCB should require use of NDOI or an improved measure of Delta outflow as the compliance metric, and the SWRCB should discontinue the use of daily EC values, carryover days, and other compliance mechanisms under Table 4 of the existing WQCP to meet Delta outflow requirements in the new plan.

The SWRCB should require all water agencies to install and maintain sensors above and below their diversions to provide real-time measures of instream flow and other water quality characteristics as well as accurate and timely information regarding diversions. As mentioned above, the effect of groundwater recharge and accretions on flows into and through the Delta is almost completely unknown; this represents a tremendous gap in current monitoring efforts and the SWRCB should require all diverters in the Central Valley to develop and implement aquifer and river flow monitoring plans that provide this essential information on a timely (real time or near real time) basis. Compliance should be measured on a daily basis wherever possible, and the SWRCB should produce

and regularly update (e.g., on a weekly basis) publicly accessible reports on compliance with all water quality standards.

Question 4. Understanding that the proposed outflow objective is derived from the inflow objective but will require some accounting methodology to accommodate Valley floor and Delta accretions and depletions and floodplain inundation, how should implementation and compliance with the new inflow and inflow-based Delta outflow objectives be coordinated?

First and foremost, the Delta inflow objectives should be based on the Delta outflow objective, not the other way around. The narrative outflow objective encompasses a broader range of fish and wildlife beneficial uses and public trust resources than the narrative inflow objectives, therefore likely providing a higher level of protection, and the numeric Delta outflow objective should be controlling (see also our November 9, 2017 comments on the final Scientific Basis Report).

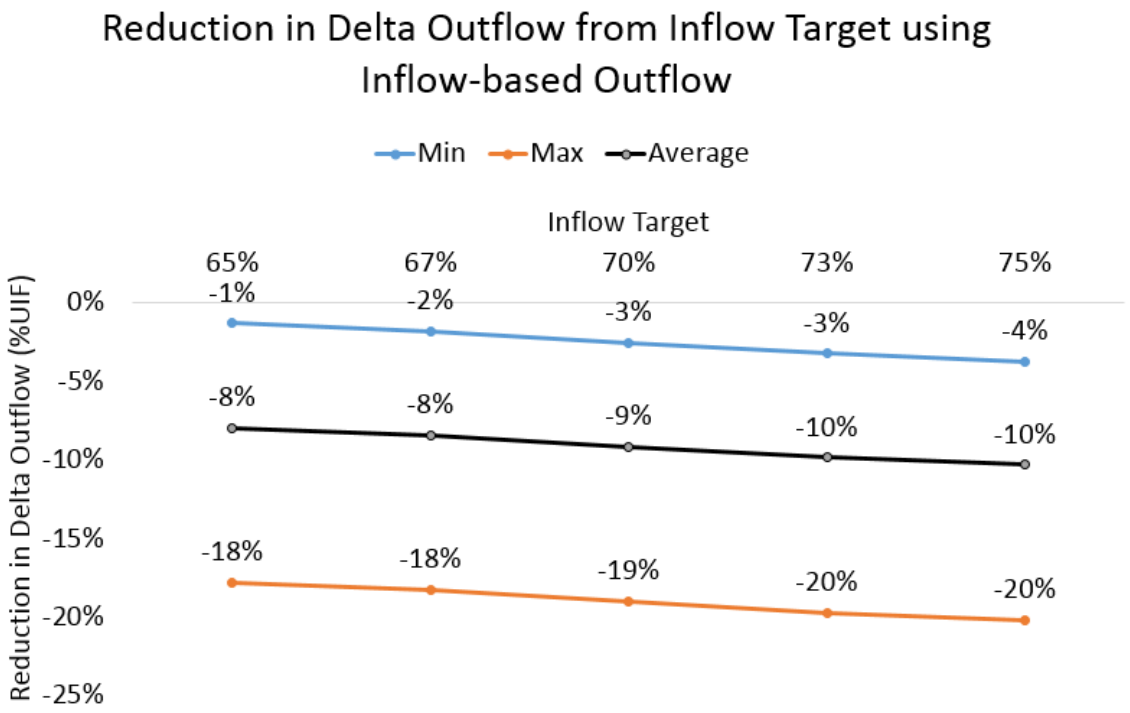
Second, the fact that Delta inflows are subject to diversion within and export from the Delta is another compelling reason why the numeric Delta outflow objective should be controlling, and outflow compliance points and quantitative diversion and export criteria should be adopted. Accounting methods should be developed for important components of Delta inflow, through flow, and outflow and these must be clearly linked to existing or new monitoring and modeling.

The responsibilities across different water users for providing required Delta inflow and outflow should be clearly articulated and quantified in Phase 3. If a water rights holder upstream of the Delta is not providing sufficient inflow to meet its contribution to the outflow objective, it must be held accountable to release additional water to make up the shortfall in outflow. Similarly, water rights holders that divert water in, or export water from, the Delta, must reduce their withdrawals to the extent necessary when inflows are insufficient to ensure that the outflow objective is being met, and other conditions affecting Delta through flows must also factored into the equation (inflow and outflow objectives being linked by transparent calculations).

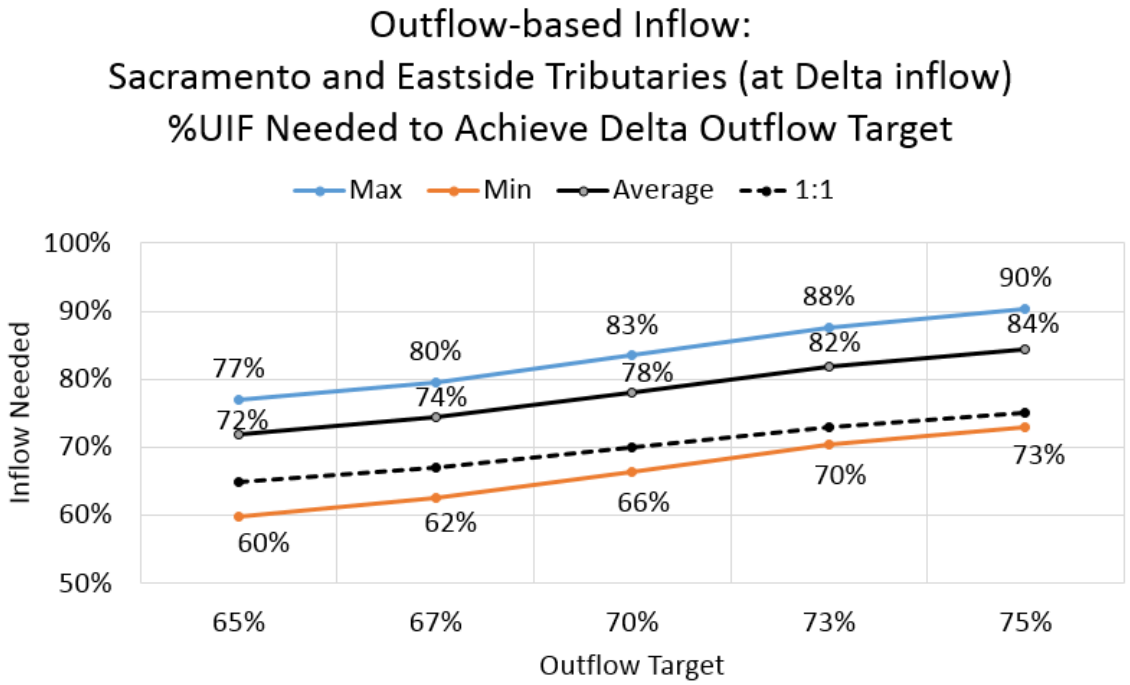
The final Scientific Basis Report describes the inflow-based outflow calculation (p. 5-24, footnote 8). To summarize, unimpaired San Joaquin River volume at Vernalis is subtracted from unimpaired Delta outflow (from SacWAM) to get the total unimpaired Delta outflow volume from the Sacramento and eastside tributaries. That volume is scaled by the percentage of unimpaired flow required from the tributaries, and added to the currently required Vernalis inflow. The result is a required percentage UIF-based Delta inflow, not percentage UIF-based Delta outflow. Unless the unimpaired Delta losses (e.g., in-Delta unimpaired ET) are added to the inflow requirement, the outflows will be lower than the sum of the required inflows from the tributaries—over 400 TAF

lower in most years (depending on how unimpaired Delta losses are calculated). As a result, the nominal percentage inflow target will always exceed the resulting percentage of unimpaired Delta outflow.

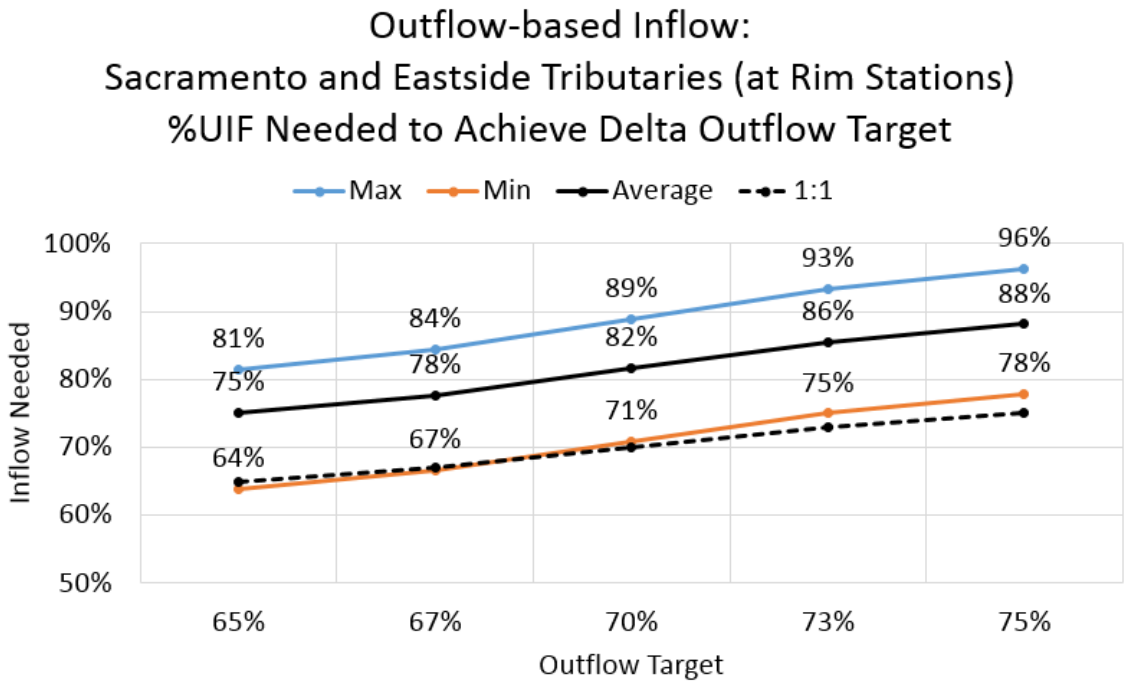
Finally, using Delta inflow as the controlling objective will likely result in Delta outflow that is less than the required inflow if the SWRCB adopts a Phase 1 amendment to the WQCP that significantly limits San Joaquin River inflow. Indeed, including San Joaquin River as one of the controlling objectives means that Delta outflow will almost always be less than the 65-75% of unimpaired flow value that is the upper part of the range identified for further evaluation in the final Report and that approaches the level of flow necessary to provide full protection of public trust ecosystem values per the findings of the SWRCB's 2010 flow criteria report. The following graph shows the difference between the inflow and outflow targets under this approach for the January-June period, assuming 40% unimpaired flow from the San Joaquin River during the February-June period and adjusting for unimpaired Delta depletions. For example, in 1977, an 18 percentage-point reduction from a 65% inflow requirement would have occurred (absent any other outflow requirements), resulting in only 47% of unimpaired Delta outflow January-June. The Delta outflow plan of implementation should clearly state the difference so as not to be misleading.



The following graph shows how much Sacramento and eastside tributaries Delta inflow would be required to achieve Delta outflows ranging from 65 to 75% of unimpaired flow, again assuming that San Joaquin River inflow is 40% of unimpaired flow, and assuming unimpaired Delta depletions). This shows the inflows needed to achieve the Delta outflows on the x-axis, 1975-2014. On average, the inflow requirement needs to be 7-9 percentage points higher than the outflow requirement.



The following graph shows the same analysis as above, but for rim station inflows only (subtracting valley floor contributions and minor eastside tributaries, which the report states will not be protected). This shows that the regulated instream flows at the rim stations would need to be, on average, 10-13 percentage points higher than the target Delta outflow.

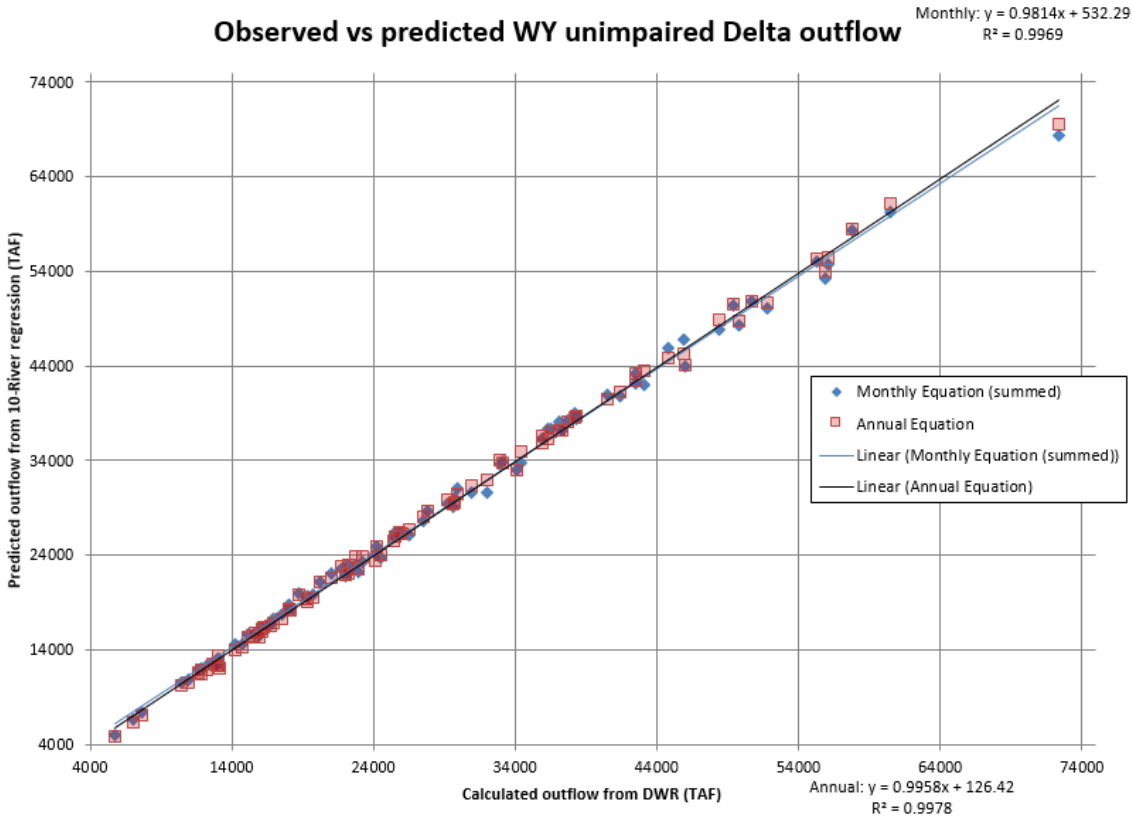


This analysis demonstrates that the assumption of only 40% of unimpaired flows from the San Joaquin River tributaries severely constrains the options for achieving Delta outflows in the 65-75% range. This underscores the need for the SWRCB to either reconsider the proposed San Joaquin River inflow objective in the Phase 1 SED or to secure additional flows from parties in the San Joaquin River basin in order to achieve a sufficiently protective Delta outflow objective.

Under the current approach, using existing or the SWRCB's proposed San Joaquin inflows means either that Sacramento River and eastside Delta tributaries will be forced to release even higher flows to make up for weak requirements in the San Joaquin basin or that the possibility of an adequate Delta outflow objective will be foreclosed. Neither alternative is acceptable.

Also, the calculation described in the final Scientific Basis Report applies a percentage UIF from the Sacramento River and eastside tributaries to calculate required inflow. Since the report anticipates only regulating salmonid-bearing streams, applying that same percentage to only the rim stations would result in a lower required Delta inflow. We estimate that applying the calculation to only rim station inflows (required rim station volume divided by unimpaired Delta inflow volume) would result in Delta inflows from the Sacramento River and eastside tributaries that are 3-7% lower than the nominal target.

Our methodology for estimating unimpaired daily flows at the Delta is as follows. We first developed a regression equation for each month of the year that relates unimpaired volume in the ten largest rivers to Delta outflow. The sum of the monthly equations and the water year equation both are shown in the plot below and have an R^2= .99. The individual monthly equations' R^2 is as low as .98 in April.



This is a good method for determining a monthly, seasonal, or annual outflow volume. However, in order to develop a daily unimpaired Delta outflow hydrograph, we wanted to incorporate rainfall runoff in the Delta (which can account for 10% of the unimpaired flow) instead of relying on the monthly averages. Therefore we developed a similar equation for predicting monthly unimpaired Delta inflow (with R^2 even higher than the outflow equation), and used the daily values for the Delta water balance (published on the Web each day by USBR, then adjusted for the difference between actual and unimpaired) to calculate unimpaired Delta outflow. This methodology maintains the monthly volumes of Delta inflow and outflow (adjusted for travel time) but applies the daily variation of the rim stations (adjusted for travel time) and the rainfall runoff in the Delta.

The daily unimpaired Delta inflow equation is as follows

10RI lagged to Delta inflow + (additional monthly unimpaired Delta inflow volume to date / day of the month)

where:

10RI lagged to Delta inflow = Sacramento (-2 days) + Feather (-1 day) + Yuba (-1 day) + American + Cosumnes + Mokelumne + Stanislaus (-1 day) + Tuolumne (-2 days) + Merced (-4 days) + San Joaquin (-7 days);

Additional monthly unimpaired Delta inflow volume to date = Result for to-date volume of monthly regression equation – 10RI lagged to Delta inflow (sum to date for current month);

And all AF volumes are converted to cfs

The daily unimpaired Delta outflow equation is as follows

Unimpaired Delta inflow – Net Delta Consumptive Use – (Difference between unimpaired Delta net use and actual Delta net use / day of month)

Where:

Unimpaired Delta inflow is from the equation above;

Net Delta Consumptive Use is from USBR's daily Web update;

Difference between unimpaired and actual Delta net use is unimpaired Delta inflow minus unimpaired Delta outflow minus actual delta net use (month to date, with unimpaired values from regression equations);

And all AF volumes are converted to cfs

In contrast to an inflow-based outflow objective, we recommend developing an outflow-based inflow objective, i.e.:

1. Set a target outflow range that protects the full suite of fish and wildlife beneficial uses and public trust resources in the Estuary, based on the information in the 2010 flow criteria report, the 2012 Phase 2 workshops, and the 2017 final Scientific Basis Report.
2. Determine the range of inflows that result in the desired range of outflows (this step was skipped in the final Scientific Basis Report--the exceedance curves in section 5.3.3.2 come close to accomplishing this; however they don't show needed frequencies, and the y-axis conflates inflow and outflow).

3. Use the outflow-based inflow analysis to inform the POI and the development of tributary and/or regional implementation plans.
4. Develop compliance mechanisms to ensure that actual inflows are sufficient to achieve the outflow objective and that inflows are protected through the Estuary.

For thoughts on the relationship between the outflow objectives and floodplain inundation, see our response below to Question 6. For further discussion regarding the relationship between the proposed new Delta inflow and inflow-based outflow objectives, see also our November 9, 2017 comments regarding the final Phase 2 Scientific Basis Report.

Question 5. What approach should the State Water Board use to transition from the current Delta outflow objective in Table 4 of the 2006 Bay-Delta Plan to a new inflow-based Delta outflow objective to ensure that Delta outflows are not reduced while the tributary inflow requirements are being implemented?

Responding to this question underscores the need for an integrated and time-bound approach to adopting plans to implement the WQCP. The obvious answer is that, until arrangements have been finalized to fully implement the WQCP, the federal Central Valley Project (CVP) and State Water Project (SWP) remain responsible for meeting the outflow objectives in the 2006 WQCP. The problem is whether and how the CVP's and SWP's obligations should be modified if voluntary plans for some tributaries and/or regions are approved but the responsibilities of parties on other tributaries and/or in other regions remain undetermined until issuance of the Phase 3 water rights decision. This seems impossible to do unless and until a master plan is in place to fully implement the WQCP, including a determination of the new responsibilities of the CVP and SWP to contribute to implementation of the WQCP. Therefore, the CVP and SWP remain responsible for meeting the 2006 objectives until a final water rights decision and/or implementation master plan are adopted, and additional outflows that result from implementing any new voluntary plans prior to those final adoptions will be additive to the 2006 baseline.

Question 6: How should the State Water Board account for flows provided for floodplain inundation to benefit native species?

For a variety of reasons documented in the final Report, the SWRCB should implement the WQCP in such a way, and take other actions, so as to encourage creation of periodically inundated, off-channel habitats for fish and wildlife with surface water connection to river channels (aka, floodplains or wetlands). These habitats will have different evapotranspiration and groundwater recharge characteristics than in-channel habitats. Such differences must be documented, and the total flow released to meet

downstream requirements must be sufficient to address these differences and ensure that Delta outflow objectives are actually being achieved.

The SWRCB must also protect the timing and shape of the hydrograph recession to protect floodplain and riparian habitats, working with reservoir operations to reduce or avoid situations where flood releases in excess of the percentage of unimpaired requirement are shut off suddenly. With advances in data collection and the accuracy of runoff forecasting, these abrupt changes in reservoir releases likely can be reduced without endangering public safety. It is very important to reduce flows at a slow enough rate to maintain important processes, especially the snowmelt recession when riparian recruitment and diverse macroinvertebrate populations depend upon a slow drawdown (Mahoney and Rood, 1998; Steel, et al, 2017). In addition, if the WQCP requires a high flow on June 30th (e.g., as in Phase I), then it must also require an ecologically appropriate drawdown from that high flow over the following months, even though they are outside the target minimum flow period. In wet years this can extend through August, and in dry years it may be achieved during the higher percentage unimpaired period in June. Because it tends to use more water in wetter years and less water in drier years, the water supply impacts of this recession are likely to be minimal in most years (Roberts, et al. 2002). Operational concerns regarding making daily flow changes over a month or two can be addressed in the POI and in implementation plans, based on each tributary's unique constraints.

Question 7. How should the State Water Board structure adaptive management for the new objectives?

In order for adaptive management of new inflow and outflow objectives based on a desired percentage of unimpaired flows to succeed in protecting public trust resources and designated fish and wildlife beneficial uses, the POI should include clear biological goals and enforceable SMART targets for securing desired biological and environmental outcomes, and appropriate limits on flow shaping (i.e., deviation from a multi-day average of UIF rule) that prevent shifting of flows to months outside the target period or even into subsequent years. The POI should also clearly describe the decision pathways associated with SMART targets, i.e., what actions will be taken if SMART targets are not attained. To the extent such SMART targets and related decision pathways are not currently available, the POI should commit the SWRCB to adopt final SMART targets and decision pathways within one year. An independent science review process should be conducted every 3 years to provide the SWRCB with findings regarding progress toward achieving SMART targets and recommendations for modifying implementation of the WQCP to better achieve these targets. More information on developing biological goals and SMART metrics is described in TBI et al, 2012 and SEP 2016.

Question 8. How should the State Water Board ensure that non-flow measures included in voluntary tributary or regional plans are implemented in a timely and effective manner?

The SWRCB has sufficient authority to require habitat restoration and other non-flow measures as part of the Program of Implementation for the WQCP and/or a Phase 3 water rights decision, as explained in prior comment letters to the SWRCB. In any case, per our response to Question 1, whether through a Phase 3 decision or a voluntary plan (which would be approved by the SWRCB), any plan to implement the WQCP should include full flow augmentation to comply with the WQCP's numeric objectives (i.e., the highest level within a permitted range) until such time as habitat restoration or other actions have been scientifically demonstrated to effectively help achieve the WQCP's SMART targets in lieu of some portion of required flow, and the SWRCB determines that a lower level of flow augmentation within the permitted range will not adversely affect achievement of SMART targets. This approach will incentivize water users to advance efforts to restore functional habitats and other measures and document the effects of these measures on attaining SMART targets, in order to justify an evaluation by the SWRCB of whether flows may be adjusted downward within the permitted range.

Question 9. What specific drought measures should be included in the Bay-Delta Plan?

First, the SWRCB should avoid and minimize the need for extraordinary drought measures (such as Temporary Urgency Change Petitions, or TUCPs) by adopting WQCP objectives that are designed to be applied under almost every hydrological scenario that has been encountered in the past and is reasonably foreseeable in the future (i.e., hydrological conditions that have even a 1-2% chance of occurring over the next 50 years, based on the historic hydrologic record, which includes drought conditions as or more extreme than any predicted under regional climate change scenarios. The fact is that "drought" is simply one kind of hydrological condition that occurs with somewhat predictable frequency, severity, and duration; there is no reason that the SWRCB cannot design and implement WQCP objectives that are appropriate when dry conditions prevail for one or more years. Using this approach, the WQCP objectives should be robust and effective under drought (and flood) conditions that are more extreme than those we have observed in the last 100 years. TUCPs should not be necessary under the new WQCP.

Furthermore, to the extent possible, the WQCP POI should consider additional actions to address potential problems with WQCP compliance before extreme drought conditions occur. For example, the SWRCB should consider measures to avoid or reduce potential conflicts between upstream cold water habitat objectives, downstream water quality objectives, and water deliveries under extreme drought conditions, such as improving fish passage to spawning habitat above dams; modifying dam outlets to provide better cold water pool management; using a portion of the hydroelectricity generated to chill the

water in strategic locations downstream of the hydroelectric plant; removing dams combined with alternate storage underground or in other reservoirs; and even rerouting rivers around smaller reservoirs (such as the recent Carmel River project where San Clemente Dam was bypassed). Another example would be to adopt best management practices and conservation standards for irrigated agriculture that promote more efficient use of water and diversion reduction programs to fallow land when conditions become drier, and that avoid, minimize, and mitigate any wildlife impacts associated with agricultural water conservation or land fallowing.

The SWRCB could also consider improving its planning and modeling for curtailment of water use during extreme drought conditions. For instance, the minimal volume of water (consistent with historic land use practices during extreme droughts) that might represent a minimum sustainable supply to be allocated to specific water users during extended (3+ year) droughts could be estimated in advance of extreme drought criteria being triggered. That volume may be a percentage of average use (for critical health and safety needs in large urban areas) or may be zero (in cases where land fallowing or conversion to dryland crops can occur). The potential for conflicts between this minimum extreme drought supply and WQCP objectives could be modeled in advance, measures to avoid or reduce the conflict identified, and funding and other resources directed to implementing these measures. Taking this proactive approach to extreme drought conditions should further avoid or reduce the need for extraordinary drought measures to be invoked.

The WQCP and associated Substitute Environmental Document (SED) must analyze the biological effects of granting TUCPs in future droughts, and how that will impact achieving biological goals and SMART targets. If TUCPs are anticipated under the WQCP in future droughts, then the WQCP must provide improved flow conditions in average and wetter years, in order to offset the additional harm to beneficial uses that will occur when WQCP objectives are not achieved in future droughts. The POI should also clearly indicate that the SWRCB will submit any TUCP orders that waive or modify standards to the U.S. Environmental Protection Agency for review pursuant to the Clean Water Act.

Further, minimum levels of Delta export to meet critical health and safety needs when extreme drought conditions occur must be precisely and quantitatively defined, and their use accounted for. During the recent drought, exports generally were not required to be reduced below 1500 cfs during the period when the WQCP objectives were not being met, even though USBR and DWR reported to the SWRCB on April 8, 2014 that exports for human health and safety were a small fraction of that amount (less than 300 cfs). The SWRCB should identify the appropriate minimum level for health and safety in the WQCP and require a precise accounting of where the water is applied each day that minimum export rates for health and safety are in effect.

Finally, in addition to prioritizing exports for critical health and safety needs, the SWRCB should ensure that, during drought, Level 2 refuge water supplies are prioritized over agricultural exports and M&I exports above those necessary for health and safety. Level 2 water supplies are essential for supporting listed species like the threatened giant garter snake and millions of birds migrating along the Pacific Flyway, and this wildlife beneficial use of Delta water must be protected during drought.

Question 10. What should be the threshold for triggering drought measures?

Droughts are a normal part of the California climate, and consecutive dry years can be planned for as readily as single ones. Extraordinary drought measures – defined here as changes to water quality standards, through TUCPs or other mechanisms – should not be necessary as the WQCP should evaluate the effects of the full range of hydrologic conditions and have water quality standards to address all hydrologic conditions.

Question 11. How could the State Water Board incentivize creative voluntary drought measures?

Voluntary drought measures should not be necessary under the updated WQCP, because it should evaluate and implement water quality standards that apply to the full range of hydrologic conditions, including severe drought conditions. By setting stronger, more protective WQCP objectives that address the full range of hydrologic conditions, the WQCP will help water rights holders anticipate water supply under future drought conditions. This will create incentives for measures to reduce reliance on the Delta and better prepare for droughts.

Thank you for considering our input on development of the POI for Phase 2 of the WQCP update. We look forward to working with the Board to ensure that Phase 2 results in strong and timely new flow objectives that reverse the current degradation of and provide broad ecosystem protections for the Bay-Delta estuary. Please contact us if you have any questions regarding these comments.

Sincerely,

Gary Bobker
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