State Water Resources Control Board

Informational Proceeding to Delvelop Flow Criteria for the Delta Ecosystem - Questions

Party submitting questions: **California Farm Bureau Federation**

Priority[1]	Question	Witness	Panel #
1	American River's and NHI's written testimony states on page 1 that: "Scientific information should be used to establish the minimum volume, quality, and distribution of unimpaired flows to protect public trust resources. It should not be used here to establish maximum flow volume. Continuously unimpaired flows, which would provide the maximum benefits for native fishes and other public trust resources, would be a social, economic, and legal impossibility."	American Rivers / Natural Heritage Institute	Panel #1--Hydrology
	Given that the California's human population and economy depend upon the continued availability of a reasonably reliable supply of a certain quantity of developed water, what is American River's and NHI's conception of what could minimally satisfy the flow needs of fish and wildlife consistent with the public trust, while at the same time adequately serving human needs in the broader public interest?	American Rivers / Natural Heritage Institute	Panel #1--Hydrology
2	At page 4, American River's and NHI's "Summary of Testimony" states that "The public trust doctrine, like the Water Code and other applicable law, requires that the Board consider costs, benefits, and the comparative effectiveness of alternative mitigation measures when it establishes flow requirements for an individual diversion." Similarly, on page 3, American River's and NHI's written testimony states that "Before flow requirements are imposed, each diverter and other stakeholders must and will be heard again in a subsequent water right proceeding, and the Board will hold a hearing and conduct an environmental review under the California Environmental Quality Act."	American Rivers / Natural Heritage Institute	Panel #1--Hydrology
	In supporting joint flow recommendations with TBI, NRDC, and EDF (See TBI's and NRDC's "Summary Testimony), have American Rivers and NHI considered this necessary balancing of public trust needs against the needs of the public at large and the broader public interest? If not, how are the State Water Board, the Legislature, and others to use such recommendations, developed in isolation from any overt consideration of the State's consumptive use needs?	American Rivers / Natural Heritage Institute	Panel #1--Hydrology

1	TBI's and NRDC's Written Testimony states at page 1 that "The Board should ensure that its findings in this proceeding include flow criteria that are relevant not only to existing conditions, but which also address issues raised by several ongoing processes, particularly the Bay Delta Conservation Plan, the Delta Stewardship Council's Delta Plan, and future water quality and water rights proceedings of the Board itself."	The Bay Institute / Natural Resources Defense Council	
	Per the Legislature, dual objectives "inherent in the coequal goals for management of the Delta" (and, thus, for the Delta Plan, the Bay-Delta Conservation Plan, or any other state-sponsored long-term management plan) include, not only "[r]estor[ing] the Delta ecosystem, including its fisheries and wildlife, as the heart of a healthy estuary and wetland ecosystem," but also "[i]mprov[ing] the water conveyance system and expand statewide water storage" and "[m]anag[ing] the Delta's water and environmental resources and the water resources of the state over the long term." (See Water Code, § 85020.) Additionally, under Water Code section 85023, the "longstanding constitutional principle of reasonable use and the public trust doctrine" are declared to be the foundation of state water management policy and to be "particularly important and applicable to the Delta."	The Bay Institute / Natural Resources Defense Council	Panels #'s 1 & 5-- Hydrology & Hydro-dynamics
	If the primary purpose of a set of flow criteria recommendations from the Board is to inform the Delta Plan and the Bay-Delta Conservation Plan, including the "co-equal" or dual water supply- and ecosystem-related goals of both, how do flow recommendations that fail to acknowledge competing consumptive use needs or the waste and reasonableness requirements applicable to all uses of water, comport with this purpose?	The Bay Institute / Natural Resources Defense Council	Panels #'s 1 & 5-- Hydrology & Hydro-dynamics
2	TBI and NRDC's Written Testimony, at page 3, includes the following recommendation regarding Old and Middle River flow requirements: "Old & Middle River Reverse Flows: In order to reduce the loss of millions of fish, eggs, and larvae of endangered fish species and other public trust resources and reclaim the southern Delta as habitat for public trust resources, ensure that reverse flows in Old and Middle River do not exceed -2,000 cfs in October and November, do not exceed -1,500 cfs in December through February and in June, and are greater than zero (i.e., positive) in March through May of most year types." These recommended OMR restrictions are considerably more restrictive than the already restrictive USFWS and NMFS biological opinions for smelt and salmon.	The Bay Institute / Natural Resources Defense Council	Panels #'s 1 & 5-- Hydrology & Hydro-dynamics

2A	How does this recommendation comport with recent analyses of salvage relative to OMR flows by Deriso and the -6,100 cfs threshold identified in that work, as described on pages 17-19 of San Luis Delta Mendota Water Users, et al.'s Written Testimony in these proceedings?	The Bay Institute / Natural Resources Defense Council	Panels #'s 1 & 5-- Hydrology & Hydro-dynamics
2B	How does this recommendation comport with the "co-equal goals" objective of the long-term Delta Plan and BDCP efforts these proceedings are meant to inform? (See Water Code, § 85020.)	The Bay Institute / Natural Resources Defense Council	Panels #'s 1 & 5-- Hydrology & Hydro-dynamics
2C	How does this recommendation comport with the California Constitution's prohibition on waste and unreasonable use and mandate that the state's water resources be "put to beneficial use to the fullest extent of which they are capable"?	The Bay Institute / Natural Resources Defense Council	Panels #'s 1 & 5-- Hydrology & Hydro-dynamics
2D	How does this recommendation comport with the California Supreme Court's description of the balancing process implicit in public trust considerations, including a feasibility analysis in light of competing uses and ultimate consideration of the broader public interest? (See Nat. Audubon Society v. Superior Court (1983) 33 Cal.3d 419, 446-47; see also State Water Resources Control Bd. Cases (2006) 136 Cal.App.4th 674, 778; Sacramento Valley Water Users' Written Summary and Written Summary of the Department of Water Resources at pages 1-3 in these proceedings.)	The Bay Institute / Natural Resources Defense Council	Panels #'s 1 & 5-- Hydrology & Hydro-dynamics
3	TBI's and NRDC's Written Testimony asserts at page 4 that "where flow recommendations overlap (e.g., for different species or different viability criteria), the most protective flow is recommended, because it should address the other public trust flow needs."		Panels #'s 1 & 5-- Hydrology & Hydro-dynamics
3A	What is the legal basis for the conclusion that protection of public trust resources requires "the most protective flow" in light of competing consumptive use demands on the State's water resources and California Constitution Article X, Section 2's mandate that waste and unreasonable use be prevented and all of the state's water resources be "put to beneficial use to the fullest extent of which they are capable"?		Panels #'s 1 & 5-- Hydrology & Hydro-dynamics

3B	How does this conclusion comport with the California Supreme Court's description of the balancing process implicit in public trust considerations, including a feasibility analysis in light of competing uses and ultimate consideration of the broader public interest? (See Nat. Audubon Society v. Superior Court (1983) 33 Cal.3d 419, 446-47; see also State Water Resources Control Bd. Cases (2006) 136 Cal.App.4th 674, 778; Sacramento Valley Water Users' Written Summary and Written Summary of the Department of Water Resources at pages 1-3 in these proceedings.)		Panels #'s 1 & 5-- Hydrology & Hydro-dynamics
1	TNC's Written Summary includes the following discussion at page 4: "The information provided by TNC Exhibit 2 suggests that reduction in freshwater flows to the Delta is most significant during the drier periods when water supply demands represent a greater proportion of the available flow. At the same time, drier years induce stress upon aquatic systems as a result of decreased freshwater flows. Water supply extraction during these periods adds to that stress. Implementation of conjunctive use practices (the integrated use of groundwater and surface water) on a regional basis could help to maintain water supply while leaving surface flows in river systems to provide for additional Delta flows when they are most needed.	The Nature Conservancy	Panel #1-- Hydrology
	As a proposed, partial physical or management solution to the hydrological disconnect with our existing, developed water system that is most evident in dry years particularly, has TNC or have others conducted further feasibility studies of the maximum degree of additional management flexibility which might be gained in this way and also of the legal and physical feasibility of such an approach, including water rights and area-of-origin assurances? Would such a strategy be substantially different from the way water is managed in California already?	The Nature Conservancy	Panel #1-- Hydrology
1	NMFS's Written Summary includes the following statements on pages 3 and 4: "NMFS encourages the SWRCB to establish initial flow criteria that provide a margin of safety for fish populations dependent on the Delta, including full public trust protection of fishery resources. […] Protection of imperiled species in the face of uncertainty requires a precautionary approach."	National Marine Fisheries Service	Panels #'s 1 & 3-- Hydrology & Anadro-mous
1A	What is the legal basis for these statements relative to the State Water Resources Control Board's "public trust obligations" and "necessary" protection of public trust resources, as the legislative charge for these proceedings, under Water Code section 85086(c)(1)?	National Marine Fisheries Service	Panels #'s 1 & 3-- Hydrology & Anadro-mous

1B	What is the scientific basis for this statement, where the pertinent scientific literature and the testimony of numerous witnesses in these proceedings establish that there is no clear recipe for fisheries and ecosystem health in terms of the flow variable alone, in isolation from all other relevant factors?	National Marine Fisheries Service	Panels #'s 1 & 3-- Hydrology & Anadro-mous
1C	How does this statement comport with California Constitution Article X, Section 2's waste and unreasonable use prohibition and direction that all of the state's water resources be "put to beneficial use to the fullest extent of which they are capable"?	National Marine Fisheries Service	Panels #'s 1 & 3-- Hydrology & Anadro-mous
1D	How does this statement comport with the public trust balancing process described by the California Supreme set forth in Nat. Audubon Society v. Superior Court (1983) 33 Cal.3d 419 at 446-47? (See also State Water Resources Control Bd. Cases (2006) 136 Cal.App.4th 674, 778; Sacramento Valley Water Users' Written Summary and Written Summary of the Department of Water Resources at pages 1-3 in these proceedings.)	National Marine Fisheries Service	Panels #'s 1 & 3-- Hydrology & Anadro-mous
2	NMFS's Written Summary, at page 1, includes the following discussion: "Section 7 of the ESA requires that Federal agencies insure that their actions do not jeopardize the continued existence of threatened or endangered species or adversely modify their designated critical habitat. Courts have interpreted this standard to require consideration of the action's effects on recovery of the species. Section 7 has not been found, however, to require that an agency action insure recovery of threatened and endangered species. Consequently, prescriptions in an ESA biological opinion are likely to be less than what is required for full recovery of the species. In contrast, protection of public trust resources means insuring the conditions that will support a sufficient number of self sustaining populations for the species as a whole to be self-sustaining for the foreseeable future – in other words, insuring recovery of the species."	National Marine Fisheries Service	Panels #'s 1 & 3-- Hydrology & Anadro-mous
2A	What is the legal basis for NMFS's conclusion that the protection of public trust resources under state law equates to a standard akin to the ESA's recovery standard, free of any balancing in the public interest?	National Marine Fisheries Service	Panels #'s 1 & 3-- Hydrology & Anadro-mous

2B	Mandatory provisions of the ESA do not require recovery and, rather, only require measures to ensure survival and avoid adverse modification of designated critical habitat, but at the same time allow no balancing of economic considerations against the costs of measures deemed necessary to ensure protection of species. Why would protection of public trust resources under state law require protection over and above that afforded by the ESA?	National Marine Fisheries Service	Panels #'s 1 & 3--Hydrology & Anadro-mous
2C	How does NMFS's conclusion comport with the California Constitution prohibition on waste and unreasonable use and direction that all of the state's water resources be "put to beneficial use to the fullest extent of which they are capable"?	National Marine Fisheries Service	Panels #'s 1 & 3--Hydrology & Anadro-mous
2D	How does NMFS's conclusion comport with the standard articulated by the California Supreme in Nat. Audubon Society v. Superior Court (1983) 33 Cal.3d 419 at 446-47, involving express consideration of practical feasibility and a balancing of public trust values against the broader public interest? (See also State Water Resources Control Bd. Cases (2006) 136 Cal.App.4th 674, 778; Sacramento Valley Water Users' Written Summary and Written Summary of the Department of Water Resources at pages 1-3 in these proceedings.)	National Marine Fisheries Service	Panels #'s 1 & 3--Hydrology & Anadro-mous
1	Water Code section 85086(c)(1) directs the State Water Resources Control Board to develop recommendations on "flow criteria" necessary to protect public trust resources in the Delta, including "the volume, quality, and timing of water necessary for the Delta ecosystem under different conditions." DOI's Written Summary, at page 4, includes the following discussion of the timing, volume, and magnitude of flows:	Department of the Interior	Panels #'s 1, 5--???
	"Flow in the Delta is one of the most important components of ecosystem function. Timing, magnitude and variability of flow are the primary drivers of physical habitat conditions including: turbidity, temperature, particle residence time, nutrient loading, etc. These physical habitat conditions created by flow are part of what drives ecosystem function and define the key attributes comprising ultimate habitat utility and quality for resident and migratory fish species. It is technically very difficult to define the optimal timing, magnitude, and volume of flows required to provide sufficient habitat quantity and quality to protect our trust aquatic species. However; it is generally logical to presume that flow conditions more similar to natural flows will provide beneficial flow conditions and improved habitat for native species; while the further flow conditions are from what naturally occurs, the less adequate habitat conditions are for our native species."	Department of the Interior	Panels #'s 1, 5--???

1A	What does DOI consider to be the relative importance of timing and variability, when compared to volume?	Department of the Interior	Panels #'s 1, 5--???
1B	Is it possible that adequate timing of flows in a way that more closely approximates naturally occurring patterns of runoff is more important than the volume of flows?	Department of the Interior	Panels #'s 1, 5--???
1C	Conversely, is it possible that inappropriately timed flows yield fewer benefits, regardless of volume, than smaller volumes of water at appropriate times?	Department of the Interior	Panels #'s 1, 5--???
1D	What potential options or measures does DOI see for improving the timing of flows in different years as a primary consideration above a certain volumetric threshold, while at the same more reliably providing for consumptive use by human beings?	Department of the Interior	Panels #'s 1, 5--???
1	Fleenor, et al. note in their expert submission at page 4 that "[c]onditions in the Delta are currently hostile to native fishes." As a specific example of these "hostile" conditions, Fleenor, et al. continue at page 5 with the following discussion:	Fleenor, et al. (UCD Delta Solutions Group)	Environ-mental Flows Experts Group
	"Flows needed to support desirable Delta fishes are likely to have changed from pre-European settlement conditions because of extreme landscape changes, illustrated by the 1873 map of the Central Valley in Figure 1 with vast often-connected areas of seasonal and permanent wetlands. The changes include upstream watershed changes, tidal marsh reclamation and channelization of the upstream and in-Delta landscape, impacts of biological invasions, and on-going climate change and sea level rise. Greater or lesser flows might be needed to adjust for the conversion of most of the Delta from marshland to agriculture and the severing of river channels from floodplains."	Fleenor, et al. (UCD Delta Solutions Group)	Environ-mental Flows Experts Group
	If "hostile" conditions in the Delta and it's extended watershed are contributing to an ever increasing need for flow to compensate adverse baseline conditions and an ever increase suite of additional stressors, is it possible that changes in the baseline condition (e.g., restored habitat, new points of diversion, contaminant, predator and invasive species control, etc.) could potentially alter the role of flows and enhance their efficacy per unit of water?	Fleenor, et al. (UCD Delta Solutions Group)	Environ-mental Flows Experts Group

1	Citing Kimmerer and Sommer in its Written Summary, at page 6, DWR notes generally that "the ecosystem is [currently, given various alterations in the Delta environment] getting much less 'bang for buck' for a given amount of flow than just two or three decades ago." If "hostile" conditions in the Delta and it's extend watershed are contributing to an ever increasing need for flow to compensate adverse baseline conditions and an ever increase suite of additional stressors, is it possible that changes in the baseline condition (e.g., restored habitat, new points of diversion, contaminant, predator and invasive species control, etc.) could potentially alter the role of flows and enhance their efficacy per unit of water?	Department of Water Resources	Panels #'s 1 & 5-- Hydrology & Hydro-dynamics
1	San Luis Delta Mendota Water Agency, et al.'s Written Summary describes the Bay-Delta Conservation Plan these proceedings are partly meant to inform as follows: "Since October 2006, a broad cross-section of stakeholders has been working to develop a plan to address the co-equal goals of restoring and protecting the State's water supply and providing for the consideration and management of species native to the Delta. Known as the Bay Delta Conservation Plan (BDCP), this effort is aimed at developing a level of protection for the Delta consistent with a Natural Communities Conservation Plan (NCCP) and its federal counterpart, a habitat conservation plan (HCP)."	San Luis Delta Mendota Water Authority, et al. (CVP & SWP Export Interests)	Panels #'s 1 & 5-- Hydrology & Hydro-dynamics
	"In developing the BDCP, stakeholders are taking a more holistic approach to addressing the array of stressors that have been identified through numerous scientific investigations as adversely impacting the Delta's species and ecosystem. The BDCP is utilizing an assortment of experts from various scientific and technical disciplines to bring forth the best available science to address these stressors. While this work is far from complete, and is not singular in its view as to what factors contribute in comparative degree to the decline of the Delta ecosystem, the resultant opinions and management recommendations will be a significant break from the past unsuccessful flow-centric approaches that have propelled prior efforts to protect Delta-related species. Importantly, the BDCP is considering flow in relation to the many stressors impacting the Delta ecosystem."	San Luis Delta Mendota Water Authority, et al. (CVP & SWP Export Interests)	Panels #'s 1, 2, 3, 5

	Under Water Code section 85086(c)(1), the State Water Resources Control Board is directed to develop new Delta flow criteria "for the purpose of informing planning decisions for the Delta Plan and the Bay Delta Conservation Plan." In addition, section 85086(c)(1) requires the State Board to base its decision on the "best available scientific information."	San Luis Delta Mendota Water Authority, et al. (CVP & SWP Export Interests)	Panels #'s 1, 2, 3, 5
	Given the significant amount of work that has gone into development of potential flow proposals in the BDCP, including extensive operational modeling and optimization, and considering that this work forms an important part of the existing body of scientific inquiry concerning long-term flow requirements of the Delta, is it possible that the BDCP should "inform" the State Board in setting flow criteria, just as the Board's flow criteria must "inform" the BDCP?	San Luis Delta Mendota Water Authority, et al. (CVP & SWP Export Interests)	Panels #'s 1, 2, 3, 5

[1]Please identify the top 10 priority questions concerning each participant's testimony or exhibits, with 1 being the highest and 10 being the lowest priority.