STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

INFORMATIONAL PROCEEDING TO DEVELOP FLOW CRITERIA FOR THE DELTA ECOSYSTEM NECESSARY TO PROTECT PUBLIC TRUST RESOURCES

ENVIRONMENTAL DEFENSE FUND: CLOSING COMMENTS
April 2010

Introduction

The extensive written testimony submitted and three days of hearings in this proceeding have revealed substantial scientific consensus. As the State Board's Delta Environmental Flows Group stated: "Recent Delta environmental flows are insufficient to support native Delta fishes for today's habitats." In other words, contrary to arguments that the Delta's problems are largely unrelated to flows, the proceeding has demonstrated that addressing the issue of reliable and appropriate environmental water for the ecosystem is essential. The Environmental Flows Group further stated that: "Recent flow regimes both harm native species and encourage non-native species," and recognized that flow is a "major determinant of habitat and transport." The Board's experts challenged the notion that the Bay-Delta's ecosystem can be addressed largely with habitat restoration projects instead of environmental water and stated to the contrary: "Flow and physical habitat interact but are not interchangeable." No one doubts that the Bay-Delta Estuary is a complex ecosystem and that numerous factors and stressors are involved in its decline, or that addressing all of these will play a role in its restoration. However, the clear message from the testimony and hearings is that water for the ecosystem – volumes, timing, duration and frequency, rate of change – is at the heart of the problem, and the continued failure to address this issue will continue to lead public trust resources down the adverse spiral of the last three decades.

The Boards' experts' specifically rejected the argument that we do not know enough to establish environmental water criteria for the Estuary stating: "Current science provides enough insight to act."[i] This is key in light of the argument that science is too "uncertain" to establish flow criteria. Obviously, a scientific study that could predict with certainty a particular biological response from a particular policy or management action would be beneficial for everyone. Just as obviously, biology rarely, if ever, produces such a result. As one of the witnesses remarked at the hearing: "This isn't engineering, we're not building bridges here." A policy decision to delay establishment

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of quantified and clear flow criteria until the science reaches this ideal level of predictability would be tantamount to a policy decision to tolerate the continued decline of the Bay-Delta ecosystem and its fishery resources. Indeed, processes such as the Bay-Delta Conservation Plan are depending on this information which is central to developing a comprehensive and robust plan to contribute to the recovery of species

As the testimony demonstrates, the Bay-Delta Estuary is among the most studied ecosystems in the world. As several of the witnesses pointed out, our society regularly makes major policy decisions based on far less certainty than the substantial evidence demonstrating the need for more and better environmental water for the Estuary. For example, smoking only explains 50% of the variation in whether people got lung cancer, and high cholesterol only explains 31% of the variation in whether people died of heart disease. The Board has more than sufficient evidence before it to comply with the State Legislature's direction to "develop new flow criteria for the Delta ecosystem necessary to protect public trust resources… [using] the best available scientific information."[ii]

Summary of Recommended Flow Criteria

As set forth in our Summary of Testimony submitted earlier in this proceeding, Environmental Defense Fund (EDF) supports the flow criteria developed by The Bay Institute of San Francisco (TBI). Exhibits TBI-1 through TBI-4. These exhibits present a comprehensive set of flow criteria for the Bay-Delta Estuary and, as documented in that testimony, these flow criteria are founded on the extensive scientific data and literature available regarding the Bay-Delta ecosystem and related fisheries. The flow criteria set forth in this testimony is reasonably likely to first restore, and then maintain, the Estuary's public trust resources to viable and self-sustaining levels for the long-term. **On this basis our organizations recommend that the State Board adopt TBI's recommendations as its public trust flow criteria for the Estuary pursuant to The Sacramento-San Joaquin Delta Reform Act of 2009.**

EDF also submitted a report by Stillwater Sciences (Stillwater) to supplement the TBI effort by reviewing the ecosystem restoration analyses conducted by public agencies over the last two decades as well as the primary literature, EDF-1. Like the Board's Delta Environmental Flows Group, Stillwater took a functional approach to public trust flow analysis using selected focal species that examines both proximate and ultimate functions of various flow parameters in the service of accomplishing desired ecosystem objectives (e.g., floodplain inundation, flow direction, salinity, etc.) and linkages to public trust resources.

Per the Board's request that the parties include a table with flow criteria, we have summarized Stillwater's analysis in Table 1 below:

Table 1: Delta outflows to maintain ecosystem functionality for the selected focal species within the Sacramento-San Joaquin River Delta.

Season	Fall			Winter			Spring			Summer		
Month	**Sept**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**June**	**July**	**Aug**
Water Year Type[1]	**Average Flows (cfs)[2] to Maintain Ecosystem Functionality by Month and Water Year Type**											
D/CD[3]	4,800	6,500	5,300	7,500	11,500	26,800	26,800	17,500	17,500	7,500	4,800	4,800
BN	7,500	7,500	7,500	11,500	26,800	26,800	26,800	26,800	26,800	11,500	7,500	7,500
AN	11,500	11,500	11,500	17,500	26,800	26,800	26,800	26,800	26,800	11,500	11,500	11,500
W	17,500	17,500	17,500	26,800	26,800	26,800	26,800	26,800	26,800	17,500	17,500	17,500
Recommended Peak Flows (cfs)[4] to Maintain Ecosystem Functionality by Month and Water Year Type												
D/CD[3]	4,800	6,500	5,300	7,500	11,500	26,800	26,800	17,500	17,500	7,500	4,800	4,800
BN	7,500	7,500	7,500	11,500	26,800	90,800[5]	90,800[6]	26,800	26,800	11,500	7,500	7,500
AN	11,500	11,500	11,500	17,500	26,800	105,600[7]	105,600[8]	26,800	26,800	11,500	11,500	11,500
W	17,500	17,500	17,500	26,800	26,800	105,600[9]	105,600[10]	26,800	26,800	17,500	17,500	17,500
Mean Historical Delta Outflow Volumes (TAF)[11] for 1956–2003 by Month and Water Year Type												
D/CD	255	424	575	783	868	995	1,082	547	453	268	243	205
BN	464	745	904	1,168	1,677	2,712	2,009	892	621	258	243	309
AN	468	416	651	1,051	3,800	3,895	4,329	1,921	1,714	800	441	368
W	925	823	1,370	3,693	5,837	6,196	5,380	4,025	2,861	1,779	878	651
Total Recommended Flow Volume (TAF) to Maintain Ecosystem Functionality by Month and Water Year Type												
D/CD[3]	286	295	315	461	707	1,488	1,648	1,041	1,076	446	295	295
BN	446	461	446	707	1,648	2,013[5]	1,648[6]	1,595	1,648	684	461	461
AN	684	707	684	1,076	1,648	3,195[7]	2,483[8]	1,595	1,648	684	707	707
W	1,041	1,076	1,041	1,648	1,648	4,212[9]	3,390[10]	1,595	1,648	1,041	1,076	1,076
Mean Unimpaired Flow Volumes (TAF)[11] for 1956–2003 by Water Year Type												
D/CD[3]	280	469	773	1,004	1,284	1,733	2,660	2,287	2,104	1,032	395	269
BN	357	431	763	1,038	1,989	3,547	3,195	3,176	3,047	1,504	558	349
AN	467	501	830	1,643	5,405	5,529	5,339	4,134	4,792	2,971	1,118	487
W	518	725	1,803	4,739	6,952	6,349	6,337	5,523	5,948	4,051	1,718	697

Notes:

1. Water Year Types are: **D/CD** = Dry & Critically Dry; **BN** = Below Normal, **AN** = Above Normal, **W** = Wet. Designation of water year type based on Sacramento River Basin classification system and assumes flows would be applied based upon probability of occurrence of these types. In addition, due to the inability to predict water year types accurately early in the season, flow volumes assume the development of carryover storage and other rules necessary to ensure that excess water released in Feb/Mar would not jeopardize available water supplies to be provided later in the season due to changing water year classification.
2. Average flow recommendations do not include flows to address identified hydrodynamic issues such as reverse flows and entrainment, additional flows necessary for riparian recruitment, or any additional flows necessary for the protection of species endemic to San Francisco Bay.
3. For flow recommendations that had differences between Dry and Critically Dry years, the value for Critically Dry years was selected.
4. Peak flows required to provide floodplain inundation are assumed to be concurrent between the Sacramento and San Joaquin River basins as well as the east side tributaries. However, the duration of the peak flows varies by water year (See notes 5–10 below).
5. Includes 14 days of floodplain inundation flow of 64,000 cfs in the Sacramento River.
6. Includes 7 days of floodplain inundation flow of 64,000 cfs in the Sacramento River.
7. Includes 21 days of floodplain inundation flow of 64,000 cfs in the Sacramento and 14 days of floodplain inundation flow of 14,800 cfs in the San Joaquin River.
8. Includes 14 days of floodplain inundation flow of 64,000 cfs in the Sacramento and 7 days of floodplain inundation flow of 14,800 cfs in the San Joaquin River.
9. Includes 28 days of floodplain inundation flow of 64,000 cfs in the Sacramento and 21 days of floodplain inundation flow of 14,800 cfs in the San Joaquin River.
10. Includes 21 days of floodplain inundation flow of 64,000 cfs in the Sacramento and 14 days of floodplain inundation flow of 14,800 cfs in the San Joaquin River.
11. Historical and unimpaired flow values are based on Water Years 1956–2003 using California Central Valley Unimpaired Flow Data, 4th ed. (CDWR 2007).

Again, EDF strongly supports the flow criteria recommended by TBI and offers the Stillwater analysis as a supplement to those recommendations.

The SWRCB's Public Trust Obligations

The Legislature directed the State Board to conduct this flows proceeding "pursuant to its public trust obligations." This provision asks the Board to do no more than it has always had the power, and the legal obligation, to do: examine the current state of the science and determine the environmental water requirements for arguably the most important public trust resources within its jurisdiction, the Sacramento-San Joaquin Bay-Delta Estuary. The Board itself has acknowledged the failure of past, piecemeal approaches to dealing with the poor condition of the Estuary's ecological health.[iii] Indeed, the legislation is consistent with the Board's own Strategic Work Plan for the Bay-Delta which contemplates the need for the agency to conduct a public trust assessment for the Estuary.[iv]

The basic tenets of the Public Trust Doctrine thus frame the legislature's action regarding development of the public trust flows criteria. In the wake of the Mono Lake case,[v] it has become somewhat commonplace to describe the Public Trust Doctrine as a water rights concept. However, the doctrine exists entirely distinct from appropriative rights law. The public trust is more fundamentally a property law concept imported from England in the 17th Century. Following the American Revolution, the Supreme Court held that rights in the beds of navigable waters were held "in trust" by the English Crown and that the states – rather than the federal government – succeeded to this trust burden.[vi] As the states gained admission to the Union, they succeeded to ownership of the navigable waters within their domain subject to public trust restrictions under the Equal Footing Doctrine.[vii] The Public Trust Doctrine has a particularly robust history in California. From its earliest days, California courts "recognized and enforced the trust obligation."[viii] This responsibility extends not only to tidal waters, which were the subject of English Common Law, but also to the beds of navigable freshwater streams and lakes.[ix]

The basic premise of the Public Trust Doctrine is that the State holds navigable waters and related resources in trust for the benefit of its people. The State is therefore limited in its authority to alienate those resources. The trust responsibility is an attribute of state sovereignty and is therefore beyond legislative modification:

> The sovereign power itself…cannot, consistently with the laws of nature and the constitution of a well ordered society, make a direct and absolute grant of the waters of the state, divesting all the citizens of their common right.[x]

Granting private control of trust property is permitted only under the rare circumstance when such a grant would affirmatively serve the purposes of the public trust itself.[xi] However, such a situation is very different from state abdication of control over navigable waters.

> Abdication is not consistent with the exercise of that trust which requires the government of the State to preserve such waters for the use of the

> public… The State [cannot] abdicate its trust over property in which the whole people are interested, like navigable waters and the soils under them, so as to leave them entirely under the use and control of private parties…[xii]

Application of the Public Trust Doctrine calls for a two-step analysis: (1) Is the water body at issue "navigable;" and (2) Do the uses sought to be protected fall within the public trust canopy? The first question effectively defines the geographic reach of the trust, while the second addresses whether trust protections extend to the resources at issue. While originally a major limitation on the reach of the public trust, the concept of navigability has expanded to reflect evolving public interests in water resources as this Board has often recognized. It is now settled in California that the public trust extends to virtually all waters, fresh and tidal, susceptible to navigation by "pleasure craft," meaning generally a raft or even canoe.[xiii] National Audubon extended these boundaries even further to include non-navigable tributaries that flow into navigable water bodies.

As the geographic range of the trust has expanded, so too has the range of interests protected. In its early formulations, the doctrine protected a trio of interests in public trust resources; commerce, navigation and fishing.[xiv] Over the last century, the California Supreme Court has found the Public Trust Doctrine "sufficiently flexible to encompass changing public needs including specifically ecological preservation."[xv] The National Audubon court affirmed this application of the doctrine holding public trust embodies the state's duty "to protect the people's heritage" in natural resources.[xvi]

As the range of uses protected by the public trust expands, the question arises whether the trust will be diluted such that all uses of water advancing public interests would fall under its umbrella. Thus, some have argued that the public trust should be considered to include consumptive use of water, in addition to instream uses. Obviously consumptive uses, and domestic consumption in particular, serve critical public needs and play a vital role in the State's economic health. However, the California Supreme Court considered this possibility in National Audubon and rejected an all-encompassing view of public trust resources as incompatible with the legal doctrine. The Court observed that including consumptive uses within the trust would effectively turn the law inside out, and would impose no restrictions on the state's ability to allocate trust resources regardless of the harm such allocations might cause to the state's rivers, lakes and streams which were, of course, the resources the public trust is intended to protect for the benefit of the people. The Court declined to accept the State's argument in this regard noting:

> We know of no authority which supports this view of the public trust, except perhaps for the dissenting opinion in [Illinois Central Railroad]. Most decisions and commentators assume that 'trust uses' relate to uses and activities in the vicinity of the lake, stream or tidal reach at issue.[xvii]

On this basis, the Court went on to hold that the public trust is not simply an affirmation of the power of the state to employ water resources for general public purposes, even the critically important public purpose of domestic water consumption. Instead, the public trust is:

> [A]n affirmation of the duty of the state to protect the people's common heritage of streams, lakes, marshes and tidelands, surrendering that right only in rare cases when the abandonment of that right is consistent with the purposes of the trust.[xviii]

Thus, as characterized by the California Supreme Court, the Public Trust Doctrine establishes not only the authority of the State to act to preserve its rivers and streams, but also an ongoing obligation to do so. The court effectively tied public trust protection to the maintenance of natural resources and swept away the argument that off-site consumptive use of water should or could be considered a "trust" interest. We emphasize that this does not mean that consumptive uses of water are not vitally important or that they do not enjoy considerable legal standing; merely that they are not among the interests protected under the Public Trust Doctrine itself.

At the same time, the National Audubon court reaffirmed that water rights convey strong legal protections and, while rejecting the notion that vested water rights preclude application of the Public Trust Doctrine, the court similarly rejected the argument that water allocations that harm trust resources are inherently improper. As many commenters have noted, the court used the Mono Lake situation as an opportunity to reconcile the State's public trust and water rights law.[xix] The National Audubon court accomplished this integration through a weighted balance test. The case does not establish an absolute priority for either water rights or trust resources. However, it does not allow for a simple split-the-baby balancing either. Instead, the court made clear that conflicts between public trust values and competing water uses must be weighted in favor of public trust resources, holding that:

> As a matter of practical necessity the state may have to approve appropriations despite foreseeable harm to public trust uses. In doing so, however, the state must bear in mind its duty as trustee to consider the effect of the taking on the public trust, and to preserve, so far as consistent with the public trust, the uses protected by the trust.[xx]

The doctrine thus is not merely a procedural rule requiring 'consideration' of harm to natural resources before allowing harm to occur. Instead, it imposes a substantive burden on the state to affirmatively protect trust resources and to do so "whenever feasible,"[xxi] and to avoid or minimize "any harm" to those interests.[xxii] Thus, while the State may on occasion find that harm to public trust resources is unavoidable, it may not do so in the ordinary course of business. Instead it carries a substantial – and ongoing – burden to preserve the well-being of rivers and streams unless prevented from doing so by "practical necessity." Thus, State-sanctioned harm to the public trust is an unusual event justifiable only by "practical necessity," necessity being a substantially higher standard than traditional interest balancing.

This nuanced ruling indicates a basic two-step process for dealing with public trust conflicts going forward. The State Board's first task in any public trust context is to identify the trust resources at issue and determine the water needed to preserve those trust uses for the benefit of the people of the state into the future. At this stage the only "balancing" allowed is that between

competing trust uses themselves, for example, considering the needs of salmon and smelt and reconciling these to the extent they conflict.

This is how the State Board proceeded in the Mono Lake case when the courts handed the matter back to it for application of the court's ruling. The SWRCB's initial analysis addressed the various trust resources of the Mono Basin and the water requirements necessary to ensure the future sustainability of those resources.[xxiii] In the Mono Lake situation, the State Board found that while substantially more water was necessary to protect Mono Lake and its source streams than they had been receiving, it also found that preservation of these trust resources could nevertheless be accomplished at levels of water flow considerably less than a return to a state of nature.[xxiv]

The SWRCB's second step is to turn to the question of whether it is "feasible" to provide the water resources necessary to protect the trust values at issue, or whether accepting harm to those resources rises to the level of "practical necessity." In the Mono Lake example, the SWRCB framed this inquiry as a matter of determining the economic impacts of providing the water required to meet the identified level of public trust requirements. It considered not only the water cost itself, but also the availability of alternative supplies, and marginal cost of such alternatives.[xxv]

Thus, as the Board is aware, its obligation in dealing with any public trust issue is to first isolate the water needs of the rivers, streams, fisheries or estuary at issue. This is the task that the Legislature has required at this phase. The determination about the extent to which "practical necessity" precludes protection of the public trust is *not* before the Board at this time and, in our view, it would be improper for the Board to address such issues in this proceeding. The Legislature has expressly preserved this issue for another time by stating that the Board's flow criteria will not be "predecisional" and by emphasizing that water rights cannot be affected by this proceeding.

In sum, nothing in the legal nature of the Public Trust Doctrine requires the trustee agency to determine the water flow requirements of trust resources in the context of a water rights or water quality proceeding. How such requirements are implemented, and the extent to which such requirements are or are not precluded by practical necessity, is a distinct next step. The ongoing duty of the Board as the designated state trustee for California's aquatic resources enables it to examine those needs and the relevant science without simultaneously addressing the necessity issue. The mandate of Section 85086 effectively provides the Board with the occasion to conduct the scientific inquiry and answer the basic first question required by trust law: how much water does the Estuary need to thrive? As the Board has correctly recognized, in this context, "how much" refers not only to volume, but timing, temperature and the range of hydrologic issues associated with freshwater flow into and out of the Estuary.

We encourage the Board to take full advantage of this opportunity to develop flow criteria most likely to lead to protection of these vital public trust resources into the future.

[i] Delta Environmental Flows Group, Five Key Points On Setting Delta Environmental Flows, http://www.swrcb.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/presentations/intro_1.pdf. The previous quotes in this paragraph are also taken from this presentation.
[ii] Section 85086
[iii] SWRCB, Strategic Work Plan For Activities in the San Francisco Bay/Sacramento-San Joaquin Bay-Delta Estuary (July 2008)(Strategic Plan) at 26-27.
[iv] SWRCB, Strategic Plan at 36.
[v] National Audubon Society v. Superior Court, 658 P.2d 709 (Cal. 1983), *cert. denied*, 464 U.S. 977 (1983).
[vi] Arnold v Mundy, 6 N.J.L. 1 (1821).
[vii] Pollard's Lease v Hagen, 44 U.S. 3 (1845).
[viii] National Audubon at 718-19.
[ix] National Audubon at 719; People v Gold Run Ditch and Mining Co., 4 P. 1152 (cal. 1884).
[x] Arnold at 78.
[xi] Illinois Central Railroad v Illinois, 146 U.S. 387, 453 (1892).
[xii] Id.
[xiii] National Audubon at 720.
[xiv] Illinois Central at 452.
[xv] Marks v Whitney, 6 Cal. 3d 251 (1971).
[xvi] National Audubon at 724.
[xvii] National Audubon at 723.
[xviii] National Audubon at 724.
[xix] National Audubon at 721-728.
[xx] National Audubon at 728 (citation omitted).
[xxi] National Audubon at 712.
[xxii] National Audubon at 728.
[xxiii] SWRCB Order D-1631 (Sept. 28, 1994).
[xxiv] D-1631.
[xxv] D-1631 at 179.