Good morning. I am Bruce Herbold of the USEPA. I am not going to repeat our written comments, but in reading the comments you received, I was struck by the many commonalities of our comments with the other federal agencies and wish to share those observations with you today.

Since 1995 when the board last adopted new standards for the Delta, both the scientific knowledge of the estuary and the need to apply that knowledge have grown enormously. Twenty years ago, there was debate about whether fish species truly were in dangerous decline; now, delta smelt is cited as one of the most endangered fish on the planet and we have had years of closure of the salmon industry in California. Twenty years ago, X2 was the cutting edge of ecological thought and little was known about the biology of any species other than salmon and striped bass. Today, we have 3D fine scale hydrodynamic models of the estuary, we have fully elaborated the genome of delta smelt, we can reconstruct their daily growth rates and individual histories, and we have a mountain of other relevant scientific literature. We know more than enough to act and the need to act has never been clearer.

Science, led particularly by the IEP, has elucidated the role of many stressors on the aquatic ecosystem and many of these are already addressed by new permits, TMDLs, BMPs and directed projects. But as DOI says in their comments "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 but not limited to, turbidity, temperature, residence time, (and) nutrient loading. 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." No one advocates trying to return to pre-historic conditions, but DOI makes an excellent point that "The further flow conditions are from what naturally occurs, the less adequate habitat conditions and behavioral triggers are for our native species."
Both DOI and NMFS stress in their comments the need to take a comprehensive approach. A comprehensive approach requires attention to upstream and downstream effects, particularly to ensure that outflow requirements do not deplete cold-water reservoir pools. A comprehensive approach also requires attention to meet the needs of upmigrating adult and outmigrating juvenile fall-run, spring-run, winter-run salmon as well as delta smelt, longfin smelt and the various ecosystem processes that affect conditions across seasons.

The Board should be very clear and quantitative on the goals they intend to achieve with standards. Goals make it easier to review the effectiveness of standards, facilitate the future adaptation of standards to changed conditions, and allow a basis for developing non-flow approaches to meeting the goals. Changes in delta geometry, either through intentional habitat restoration or catastrophic levee failure could then be assessed in relation to how the goals are affected. Similarly, restrictions on diversions assume a certain level of effectiveness of screening and salvage operations to achieve a specific level of protection. Invasion by aquatic plants or freshwater mussels may require different standards to achieve the same goal of protection.

Stakeholders and government agencies are now engaged in the development of the largest habitat

conservation plan ever proposed and one of the only ones to ever address aquatic habitat. The Board must define the flows in this habitat before we can know if we can achieve the dual goals of water supply reliability and ecosystem rejuvenation.

The Board is embarked upon a difficult path, but parts of the path have been blazed by others. NMFS and USFWS have developed regulatory tools to remove the jeopardy conditions posed by the State and Federal water projects. These management tools are scientifically based and address measurable conditions that directly affect fish, such as flows in river channels, gate operations, and salinity distributions. Both DOI and NMFS, in their comments to the Board, emphasize that such tools may be useful to the Board, but that the Board's purview and goals are much broader than the protection of endangered species from operations of permitted parties. Under the Clean Water Act, EPA and the Board are concerned with all beneficial uses affected by flows through the estuary, not only with listed species like delta smelt (the "rare" beneficial use) but with warmwater fish, migratory fish and the commercial and sport fishery jobs they support or used to support. NMFS correctly and explicitly states that "Delta flow criteria necessary to 'protect public trust resources'… will likely be greater than those described in the … BiOp."

Fortunately, with help from the Regional Boards and with oversight of water quality as well as water rights for all of California, the Board has more tools available to address their larger job than those available in the Biological Opinions. The Board was very successful in the 1995 WQCP partly because of the collaborative work of the other agencies and stakeholders at that time. Now the Board can combine the scientific work of the last 20 years with the teamwork and transparency that has grown from IEP, CalFed, BDCP, the California Water and Environmental Modeling Forum, the governor's Blue Ribbon Panel, and the Delta Stewardship Council. Success this time will not be easy, but it is urgently necessary and eminently doable.

Thank you for your attention.