April 15, 2010

SRWCB Proceedings on Flow Criteria

The Nature Conservancy – Summary Recommendations and Closing Comments

Our testimony and corroborating testimony from the Delta Environmental Flows Group[1], The Bay Institute, American Rivers, Environmental Defense Fund, the Natural Resources Defense Council as well as testimony and exhibits from the California Department of Fish and Game, the National Marine Fisheries Service and the Department of Interior's Fish and Wildlife Service lead to the following conclusions:

1. There have been substantial reductions in Delta outflow over the 76-year period from 1930 to 2005. Reductions in outflow are most evident during drier year periods, but the data indicate decreased outflow trends over the course of the entire period, regardless of water year type. During the 1930s, dry year outflows represented about 70 percent of total water available in the watershed, whereas in the 1990s to 2000s, dry year outflows represent only about 33 percent of available water. The primary causes for reductions in outflow are upstream depletions resulting from development of the watershed and water exported from the Delta by the state and federal facilities (TNC Exhibit 2).

2. Estuaries are highly productive, complex systems that depend on freshwater flows for many important biological and physical processes. A number of studies and published works describe the causal and significant statistical relationships that tie inflows to productivity, species integrity, and general ecosystem health of estuarine systems. However, because of the complexity of estuarine systems, quantitative flow parameters necessary to protect and restore the ecosystem cannot be determined absent a scientific process to monitor and evaluate results. Therefore, it is essential to establish criteria using the best information available and employ an adaptive management approach in the management of estuarine systems. (TNC Exhibit 3). In summary:
    a. Adequate freshwater flows are critically important to the health of estuarine ecosystems.
    b. We must accept that our understanding of the causal mechanisms relating flows to ecologic health is not often adequate to allow definitive a priori prescription of adequate flows.
    c. Initial estimates of adequate flow must be made with the best available knowledge.

[1] Cliff Dahm, William Bennett, Jon Burau, Chris Enright Fred Feyrer, William Fleenor, Bruce Herbold, Wim Kimmerer, Jay Lund, Peter Moyle, Matthew Nobriga

d. An effective adaptive management approach must be employed to adjust flow prescriptions as new knowledge of ecosystem processes and response is obtained.

Dr. Cliff Dahm presented five key points on behalf of the Delta Environmental Flows Group (Staff Exhibit – Key Points on Delta Environmental Flows). Two of Dr. Dahm's points in particular stand out in light of historical Delta outflow declines, and declines in the abundances of native and some non-native species:

- Recent flow regimes both harm native species and encourage non-native species.

- Recent Delta environmental flows are insufficient to support native delta fishes for today's habitats.

Specific flow criteria recommendations including quantity, magnitude, location and timing variables for native species were presented by the Bay Institute et al and by the state and federal resource agencies. We recommend the Board consider the flow criteria proposed by these groups for developing initial flow objectives for protection of beneficial uses, including public trust resources.

We also recommend employing an adaptive management approach coupled with appropriate monitoring and research to ensure we are able to learn from and adjust our water management actions to protect public trust resources.