March 13, 2007

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Re: **Recommendations for Actions to Protect Delta Smelt**

Dear Sirs:

Earlier this year, the California Department of Fish and Game reported that the 2006 Fall Midwater Trawl Abundance Index for delta smelt was 41, the second lowest level ever recorded during the survey's 40-year history and the third consecutive year of record low abundances for this Endangered Species Act-listed fish.[1] Last month, the first delta smelt for this season were taken by the federal and state water project facilities. The current population levels, combined with peer-reviewed population viability analyses conducted for the species, clearly indicate that the delta smelt is in imminent danger of extinction. Recent scientific research has demonstrated that loss of delta smelt at the water export facilities, particularly during this critical winter/spring period, has been a major contributor to the species' population decline.

We are writing to urge you to take immediate actions to protect delta smelt and improve their habitat during this critical year and until plans for long-term management and recovery of the species are developed and implemented. Given the current precarious state of the species, these actions should go beyond those designed to minimize poor environmental conditions and harmful water management operations and instead provide conditions that are beneficial to the species.

[1] Delta smelt Fall Midwater Trawl Abundances Indices of 74 (in 2004), 26 (in 2005) and 41 (in 2006) were the third, first, and second lowest, respectively, measured since 1967.

The specific recommendations outlined below are based on the improved scientific understanding of delta smelt and its habitat, which has grown exponentially during the past few years. The actions are designed to: (1) minimize to the greatest extent possible direct mortality of delta smelt at the water export facilities and other Delta diversions; (2) facilitate movement of the fish to and from spawning and early rearing habitats; (3) improve estuarine habitat quality during the spring, summer and fall; (4) reduce diversion and hydrodynamic effects on summertime in-Delta primary and secondary production; (5) facilitate transport of food organisms downstream to delta smelt habitat; and (6) potentially prevent the expansion upstream of the invasive clam *Corbula amurensis* into the Delta.

The actions we recommend are similar to those developed and evaluated by your agencies last year as part of the "Pelagic Organism Action Matrix" and as "Potential Actions to Reduce the Effects of Water Management on Delta Smelt Reproduction, Growth and Survival Intended to Increase Delta Smelt Abundance"[2] and which are now included in the Resources Agency's *Pelagic Fish Action Plan* (March 2007). However, our recommendations reflect our concern that, at this point, actions that simply minimize harm to the species may be insufficient to save the delta smelt: to reverse the decline of this species, we must adjust our management of this system to provide favorable environmental conditions. Furthermore, all of these actions can be implemented immediately via operational changes and/or minor changes in existing infrastructure. We recommend that your agencies implement the following actions:

- Manage Sacramento and San Joaquin River inflows and Delta water exports to prevent negative flow conditions on Old and Middle Rivers during late winter and spring (i.e., Old and Middle River flows ≥0 cubic feet per second [cfs] from February-June);

- Restrict export increases during wintertime pulse flow events to levels that avoid negative flows on Old and Middle Rivers;

- Extend the Vernalis Adaptive Management Program export curtailment beyond the required 31-day period until monitoring and salvage indicate that >95% of the delta smelt population is located downstream of the confluence of the Sacramento and San Joaquin Rivers;

- Do not install the barrier at the head of Old River;

- Do not install the south Delta agricultural barriers until monitoring and salvage indicate that >95% of the delta smelt population is located downstream of the confluence of the Sacramento and San Joaquin Rivers;

[2] The contents of these documents were presented at the 2006 Review of the Environmental Water Account (November 28-30, 2006) and are available at: http://science.calwater.ca.gov/workshop/ewa.shtml.

- Increase San Joaquin River flows and/or curtail water exports to maintain Old and Middle River flows no less than -5000 cfs during summer (July-September);

- Maintain X2 downstream of 80 km and/or maintain western Delta salinity at levels comparable to those measured during years in which *Corbula* had the most downstream distribution patterns during the fall (September-December).

Basically, these combined recommendations are designed to recreate as much as possible a spawning and rearing environment similar to the one in which delta smelt evolved and to reduce entrainment of adults and larvae in diversions.

These recommendations are not made lightly or without consideration for other beneficial uses of water resources in the Delta. However, given the critical state of this (and other) species and the good water supply conditions forecast for this year, we believe that significant new actions are both necessary and feasible. Extinction of the delta smelt, an important measure of Sacramento-San Joaquin Delta's ecological health, would be a tragedy. Given our impressive scientific understanding of this species and its ecosystem, much of it generated by research supported by your agencies, application of this knowledge would demonstrate commitment to sound stewardship of the Delta and its remaining native fishes.

There are clearly a number of important steps that can and should be taken to protect the delta smelt, and its ecosystem, at this critical time. Thank you for considering our recommendations and please contact us if you have any questions regarding them.

Sincerely,

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