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Good Morning, Mr. Chairman. My name is David Harlow, and I am the Assistant Field Supervisor for Conservation, Restoration and Contaminants in the Sacramento field office of the U.S. Fish and Wildlife Service (Service). I am pleased to be here today on behalf of the Department of the Interior to discuss the status of declining pelagic fish populations, in particular the delta smelt fish population, of the California Bay-Delta.

I will focus my testimony on two areas – first, a brief overview of the status of the delta smelt, and, second, how the Service and our partner agencies are responding to the recent severe downward trend in the delta smelt's population, using the results of new research into an adaptive management approach to address delta smelt population limiting factors.

Much of the focus of my testimony is on the delta smelt, but it is important to note that while we cannot conclude definitively, we do fear that the status of this species may be symptomatic of the condition of the Bay-Delta ecosystem as a whole. The environmental conditions of the Delta are extremely complex and, in light of this, the cause and effect relationship between and among varying factors are not well-understood at any level. As

a result, the only thing we know with certainty is that there will be no simple solutions to the problems of such an important ecosystem.

Status Overview

The Service has been involved in the efforts to address the decline of the delta smelt since its listing under the Endangered Species Act as threatened in 1993. Subsequently, the delta smelt was listed as threatened under California's State Endangered Species Act on December 9, 1993.

In 1996, the Service completed the Sacramento-San Joaquin Fisheries Recovery Plan, which included recovery goals for the delta smelt. To consider delisting the delta smelt, specific abundance and distribution criteria must be met during a five year period.

On August 2003, pursuant to court-approved settlement agreements with the California Farm Bureau Federation, the San Luis & Delta Mendota Water Authority, and other groups, the Service commenced a 5-year review of the status of the delta smelt. When the Service completed a 5-year review in March 2004, we concluded that delisting was not warranted as the species continued to be threatened with extinction. However, because of information obtained during this 5-year review, the Service is undertaking a revision of the 1996 recovery plan.

Response to Recent Decline in Delta Smelt

Most of the potential threats to the delta smelt and other Delta pelagic organisms which have been identified will be addressed in detail by other speakers today. I would like to mention that exhaustive studies are being undertaken by the Interagency Ecological Program, assisted by many knowledgeable volunteers from academia and the private sector who share concerns about the status of the Bay-Delta ecosystem. Included among them are my colleague, Mike Chotkowski, Fishery Biologist with the Department's Bureau of Reclamation, who is here with me to answer question related to work he has performed as part of the 2005 Pelagic Organism Decline investigation package.

Because of the changing situation in both the condition of the delta smelt population and evolving research, the agencies responsible for delta smelt management have developed an adaptive management approach enabling us to rapidly address new information and apply it to measures aimed at addressing the decline. Also, the Service and others assisted the California Departments of Water Resources and Fish and Game in preparing the Delta Smelt Action Plan which specifically addresses actions that have been or could be taken by resource agencies which are designed to further research needs and reduce population decline. A few examples of actions to reduce population decline include planning restoration actions for the Delta, Suisun Marsh, and San Pablo Bay that are intended to improve habitat conditions for smelt and other State and federally-listed and candidate species.

We are also actively involved in efforts to identify other environmental risks and possible corrective actions. I would like to provide the Service's perspective on one topic that generates a lot of attention – water export pumping from the Delta. Although the effects of entrainment losses at the pumps have been implicated in the population decline of delta smelt, particularly in the south Delta, it is apparent that other causes such as non-native species, contaminants, and changes in food supply may also be limiting species recovery. Accordingly, it is unlikely that reduction of export pumping is sufficient alone to bring about recovery.

In 2005, the Service's biological opinion on the operations of the Central Valley Project and State Water Project concluded that, with the adaptive management program agreed to by the operating agencies, the Service, U.S. Bureau of Reclamation, California Department of Water Resources, California Department of Fish and Game, and National Marine Fisheries Service have the ability to address pumping effects within existing operational criteria and assets. The Operations Plan includes the implementation of the Delta Smelt Risk Assessment Matrix (DSRAM). This matrix guides the recommendations of the Delta Smelt Working Group, which is composed of agency scientists who are actively involved in the ongoing research and management of delta smelt. Three of the panel members here today are members of the group.

The Working Group is specifically set up to review all available information and advise the Service on implementation of actions that can be taken to minimize effects of export pumping on the species. This information, along with substantial other data and expert

opinion, is reviewed by the Water Operations Management Team (WOMT). This team is composed of management level representatives from the Service, Bureau of Reclamation, National Marine Fisheries Service, California Department of Water Resources, and California Department of Fish and Game. The team has several adaptive water management tools that can be used to help protect delta smelt including, but not limited to, the Environmental Water Account and water available from the Central Valley Project Improvement Act, commonly known as B(2) water.

With the high level of concern for the delta smelt population, the Working Group has recommended to the Service and the WOMT agencies that water management actions to protect pre-spawning adults and larvae from entrainment be given the highest priority. Export reductions taken to protect adults are intended to avoid or minimize losses of adults before they have the opportunity to spawn, typically in late winter. After the fish have spawned, subsequent reductions to protect larvae are intended to maximize recruitment by affording young fish the opportunity to move out of the Delta where they were hatched and into their rearing areas in Suisun Bay and Marsh.

Under the current adaptive management process for water project operations, decisions regarding operations must consider many factors, including public safety, water supply reliability, cost, as well as regulatory and environmental requirements. The first step is data collection , including the routine collection of hydrologic data by the California Department of Water Resources, Bureau of Reclamation, and U.S. Geological Survey. The Pelagic Organism Decline work team also provides input to the water operations

decision-making process through regular updates. Using that data, the Data Assessment Team (DAT) and the Delta Smelt Working Group (DSWG) can recommend a change in Project operations, which is forwarded to the WOMT.

The decision-making agencies also try to inform and advise major interests that may be affected when they are making a particularly challenging decision about water operations. The WOMT considers the recommendation and seeks consensus on potential actions. WOMT may adopt or modify the recommendation and may direct that the Environmental Water Account and water available under the Central Valley Project Improvement Act be used to implement an export reduction. For particularly controversial recommendations, state and federal agency leaders engage in the decision-making process. Decisions regarding changes to Project operations often must be made quickly if they are to be effective. The Bureau of Reclamation and California Department of Water Resources then implement the export reduction as prescribed. Implementation can occur within a three-hour turn-around, if necessary.

Conclusion

Recovery of the delta smelt continues to be a high priority for the Service. Our knowledge of this species and its needs continues to increase almost daily. We are working closely with our partner agencies to make real-time management decisions consistent with our adaptive management approach to water operations. We intend to update our recovery strategies as quickly as the science becomes available. In particular, the Service plans to revise the delta smelt recovery plan in the near future to incorporate

new scientific information that is the result of the extensive studies now underway and new information developed since the approval of the current recovery plan in 1996.

Mr. Chairman, this concludes my remarks. Thank you for the opportunity to appear before you today, and I will be happy to answer any questions that the Committee may have on this important issue.