



# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Sacramento Fish and Wildlife Office  
2800 Cottage Way W-2605  
Sacramento, California 95825

In reply refer to:

MAR 5 2007

Larry Weis, General Manager  
Turlock Irrigation District  
P.O. Box 949  
Turlock, California 95381

Allen Short, General Manager  
Modesto Irrigation District  
P.O. Box 4060  
Modesto, California 95352

**Re: Fisheries Monitoring Under Article 58**

Dear Messrs. Weis and Short:

The U.S. Fish and Wildlife Service, California Department of Fish and Game, and National Marine Fisheries Service (NMFS) (collectively, "Agencies") hereby provide joint comments on the Modesto and Turlock Irrigation Districts (collectively, "Districts") Draft Fisheries Study Plan required by the Federal Energy Regulatory Commission's (Commission) December 20, 2006, letter pursuant to Article 58. By letter dated December 20, 2006, the Commission required the Districts to prepare a study plan for further fisheries monitoring studies in accordance with License Article 58: "[W]e conclude that under Article 58 of the license, further monitoring studies are needed. Additional, well-designed and well-executed studies are necessary before the effectiveness of the revised flow schedule and the non-flow mitigative measures can be determined." The Commission further required that the study plan include a schedule, address a number of specific issues, and be developed in cooperation with the Tuolumne River Technical Advisory Committee (TRTAC), the NMFS, and representatives of the non-governmental organizations (NGOs) that have participated in these proceedings. When filing the study plan with the Commission, the Districts must provide documentation of consultation with the TRTAC, NMFS, and the NGOs, copies of the comments and recommendations on the plan, and specific descriptions of how the TRTAC, NMFS, and NGO comments are accommodated by the plan. The Districts are also required to provide reasons, based on project-specific information for any agency recommendations they do not adopt.

Generally, a sound study plan must include the following five basic elements:

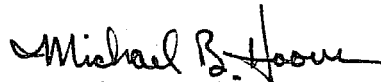
- (1) Appropriate management questions framed as testable hypotheses;
- (2) Metrics that can be measured at both the site-specific and population levels;
- (3) Methods that provide relatively accurate measurements of the test metrics;
- (4) Experimental conditions that, to the extent possible, vary one habitat variable at a time. For example, an experimental flow schedule should evaluate the importance of flow duration while holding flow magnitude and timing relatively constant. In regard to experimental conditions for restoration, different restoration strategies, such as improving rearing habitat versus spawning habitat, should be implemented sequentially in similarly sized, nearby sites. Population models should be used to separate the effects of spawner abundance from flow and restoration effects on the production of juveniles and adults. Previously, flow studies occurred opportunistically depending on natural variations in water availability, baseline data at restoration projects were inadequate, and different restoration strategies were not compared; and
- (5) Statistical designs that provide assurances that a sufficient number of observations will be made and specifies how the data will be assessed to adequately test the hypotheses and reach statistically valid conclusions.

The Agencies are concerned that the Districts' draft Study Plan (February 2, 2007) does not include many of these basic study elements.

Our specific comments are provided as Attachment 1. We also attach the current draft of the *Draft Limiting Factors Analyses & Recommended Studies for Fall-run Chinook Salmon and Rainbow Trout in the Tuolumne River*, a previous draft of which was provided to the Districts on August 15, 2006, as Attachment 2.

Please contact Kim Webb at (209) 946-6400 extension 311 with any questions concerning this letter.

Sincerely,

  
David L. Harlow  
Acting Field Supervisor

Attachments

cc:

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