

**UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION**

Modesto and Turlock Irrigation Districts	)	
New Don Pedro Project	)	P-2299
	)	

**CALIFORNIA RIVERS RESTORATION FUND, TUOLUMNE RIVER PRESERVATION TRUST, FRIENDS OF THE RIVER AND CALIFORNIA TROUT'S AMENDED COMMENTS ON THE MODESTO AND TURLOCK IRRIGATION DISTRICTS' STUDY PLAN FOR THE NEW DON PEDRO HYDROELECTRIC PROJECT (FERC NO. P-2299)**

The California Rivers Restoration Fund, Tuolumne River Preservation Trust, Friends of the River, and California Trout (collectively, "Conservation Groups") provide these amended<sup>1</sup> comments on the Modesto and Turlock Irrigation Districts' (collectively, "Districts") Fisheries Study Plan (*see* e-Library no. 20070320-5018 (Mar. 20, 2007)). We are concerned that the Districts' Fisheries Study Plan is not responsive to comments the Districts' received on their Draft Study Plan and leaves several significant issues unresolved. We also provide comments on the Department of Fish and Game's proposal to develop a hatchery on the Tuolumne River. *See* e-Library no. 20070604-0088 (May 23, 2007).

On March 5, 2007 the U.S. Fish and Wildlife Service (FWS), California Department of Fish and Game (DFG), National Marine Fisheries Service (NMFS) submitted comments to the Districts on their draft Study Plan (*see* e-Library no. 20070320-5018, Enclosure F). The comments identified deficiencies in the Districts' Draft Study Plan and provided recommended revisions and additional studies. Many of the agencies' recommendations were based on their draft *Limiting Factors Analyses & Recommended Studies for Fall-run Chinook Salmon and Rainbow Trout in the Tuolumne* (Feb. 27, 2007) ("Draft Limiting Factors Analyses"). On March 5, 2007, the Conservation Groups filed comments with the Districts in support of the agencies' comments (*see* Attachment 1). We reiterate our support for the agencies' comments on the Draft Study Plan and recommend that the Fisheries Study Plan be revised consistent with those comments.

As stated in our February 14, 2007 letter (*see* e-Library no. 20070302-0058), we believe now is the time to get the study plan right. Despite Commission staff's clear instructions, the Districts still have not presented a study plan which will yield robust data on which to base appropriate flow and non-flow mitigation measures. Therefore, we urge the Commission to revise the Districts' Study Plan consistent with the agencies' recommendations as stated in their

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<sup>1</sup> These comments are amended from our June 15, 2007 filing (*see* e-Library no. 20070615-5059) to correct the name of the Tuolumne River Preservation Trust and other non-substantive, grammatical errors.

comments on the Draft Study Plan. We believe that timely implementation of the Agencies recommendations for the Draft Study Plan will avoid the circumstance where fisheries studies under the original license will continue into the relicensing proceeding.

## COMMENTS ON DISTRICTS' FISHERIES STUDY PLAN

The following provides our comments and concerns, moving from general to specific, regarding the Districts' Fisheries Study Plan and the recommendations made by the City and County of San Francisco (*see* e-Library no. 20070404-5033 (April 4, 2007)). These comments were developed based on consultation with and informal comments from FWS and NMFS staffs.

### **I. General Comments**

#### **A. The Districts' Plan Should Include Study of Experimental Flows on Smolt Production.**

In their comments on the Districts' Draft Study Plan, the agencies provided evidence that flows in the Tuolumne River strongly affect the production of salmon smolts that migrate into the Delta and that smolt production affects the number of adult salmon that returns to spawn in their Draft Limiting Factor Analyses. While we acknowledge that conditions in the Delta and ocean also affect the number of adult salmon in the Tuolumne River escapement, we believe the existing evidence shows that Tuolumne River flow is the primary factor affecting smolt production. The geographic scope of the New Don Pedro Project's impacts extends downstream of the dam all the way to the Delta. The Districts, who as the applicants for discretionary permit have the burden of proof in this proceeding under the Administrative Procedures Act, have not provided adequate evidence to support their refusal to implement an appropriate experimental flow schedule to study the effects of high flows on the Tuolumne River salmon population. They have not provided any direct evidence to contradict the evidence provided by the agencies.

The Conservation Groups request that FERC staff adopt the experimental flow recommendations set forth in the Draft Limiting Factors Analyses.

#### **B. The Districts' Plan Should Include Testing Multiple Hypotheses to Explain the Impact of High Flows on Smolt Production.**

The modern scientific method requires the simultaneous testing of multiple hypotheses rather than focusing on a single issue or hypothesis. *See, e.g.,* Hilborn, R. and M. Mangel, *The Ecological Detective: Confronting Models with Data. Monographs in population biology*, Princeton University Press (1997). In their comments on the Districts' Draft Study Plan, the agencies provided multiple hypotheses, including predation, disease, contamination, and starvation, that would account for the mechanism(s) by which high flows affect smolt production in the Tuolumne River. In contrast, the Districts propose to study only predation as the only high flow mechanism. We agree that predation is one source of mortality for juvenile salmon in the Tuolumne River. However, the Districts' proposed studies, which focus on predation, will not advance our knowledge about how flows and habitat restoration along with predation cumulatively affect salmon production in the Tuolumne River.

The Conservation Groups request that FERC require the Districts to test all the hypotheses using the recommended study methods as described in the Draft Limiting Factor Analyses.

**C. The Districts' Study Plan Should Include Robust Statistical Designs.**

The Districts agree with the agencies' comment on the Draft Study Plan that robust statistical designs are needed. However, the Districts do not commit to collect all the data needed for statistical testing.

The Conservation Groups request that FERC require the Districts to collect sufficient data to test each hypothesis.

**D. The Districts' Study Plan Should Include Implementation of Habitat Restoration Projects.**

The Districts Fisheries Study Plan does not commit to completing the remaining habitat restoration projects required under the "Order Amending License and Dismissing Rehearing Requests," *see* 76 FERC ¶ 61,117 (1996). In our "Comments on the Commission Staff's Preliminary Assessment of the 10-year Fisheries Summary Report," *see* e-Library no. 20060925-5040 (Sept. 25, 2006), we provided recommendations for completing these projects. We incorporate those recommendations herein by reference. Based on the information provided by the agencies in their comments on the Draft Study Plan, we believe that the Districts should shift the focus of remaining habitat restoration projects from spawning habitat and sediment transport to smolt production and the better quality rearing habitats, particularly the inundation of floodplains on a frequency which more closely resembles unregulated conditions, i.e., using a 1.5 year design flow criterion.

**II. Specific Comments**

The Conservation Groups, based on consultation with and informal comments from FWS and NMFS staffs, have identified the following specific concerns regarding the Districts' Fisheries Study Plan relative to each topic recommended by the Commission in its December 20, 2006 letter.

**A. Instream Flow**

1. The Districts' Fisheries Study Plan included smolt survival studies using acoustic tags. However, too few fish will be tagged and only three stationary receivers will be used, resulting in statistically weak investigations with spatially vague data. At least 100 fish should be tagged for each release and stationary receivers should be placed at the boundaries of likely mortality sources (e.g., captured mine pits and special run pools).

2. The Districts' Study Plan omits additional coded wire tag (CWT) studies at flows greater than 4,000 cubic feet per second (cfs). These data are important because it will document how downstream migrating fish relate to higher flows.

3. The Districts' Study Plan includes paired Rotary Screw Trap (RST) studies, but it only commits to four years of study (2007-2011). The Districts state that "[i]t is likely that RST monitoring would be continued after 2011 during formal relicensing to provide ongoing data..." This time period is too short to meaningfully interpret inter-annual variability. This may result in a statistically weak investigation.

4. The Districts' Study Plan does not include increased RST calibration studies that are needed to estimate total abundance. The results of calibration studies can be highly variable and many test replicates are needed to compute accurate population estimates.

5. The Districts' Study Plan does not include RST operations protocol to improve accuracy. An operations protocol would increase consistency between catches so that comparability between years is improved.

6. The Districts' Study Plan does not include implementing an experimental flow schedule to test hypotheses about the relative importance of the magnitude, duration, and timing of winter and spring flows for juvenile salmon. Instead, the Districts limit their commitment to only 3-5 day, low flow pulses from late January through March that do not inundate a substantial amount of floodplain habitat. The Districts' recommendation to compare low flow conditions relative to uncontrolled flood conditions during wet years does not represent a rigorous study design.

7. The Districts' Study Plan does not include fish health studies to evaluate how flow affects disease, contamination impacts, and food resources. Their hypothesis that predation is the primary factor of juvenile mortality cannot be rigorously tested without concurrently testing alternate hypotheses that flow affects disease, contamination impacts, and/or food resources.

## **B. Habitat Restoration**

1. As mentioned above, the Districts' Study Plan does not include assurances that key restoration projects will be implemented.

2. The Districts' Study Plan does not provide for effectiveness monitoring of completed restoration projects. Evaluating population trends in the Tuolumne River requires that all restoration projects should be evaluated to ensure that the intended results were achieved.

3. The Districts' Study Plan may not include a sufficient number of years of egg survival studies to demonstrate a statistically significant response. The Districts' studies are budgeted for only two years, 2007 and 2008. If eggs are not available in 2007, then they would

implement only one year of study. This may be inadequate considering that the quality of spawning habitat conditions can be highly variable between years due to changes in turbidity, water temperature, egg viability, base flows, flood scour, and redd superimposition rates.

4. The Districts' Study Plan does not include restoring a substantial amount of annually inundated and well vegetated floodplain. These are outstanding mitigation requirements for previously identified, direct effects of the project.

5. The Districts' Study Plan does not include the use of flow management to reduce redd superimposition. Instead, the Districts will focus on spawning habitat restoration to reduce redd superimposition. However, the FWS and NMFS have commented that it is necessary to demonstrate that redd superimposition affects smolt production or adult recruitment, before implementing management actions to control redd superimposition. Flows and restoration funds should be focused on factors, such as juvenile survival, that are most likely to improve adult recruitment.

6. The Districts' Study Plan includes an evaluation of restoration effectiveness using metrics of juvenile and smolt production with RSTs and adult recruitment. Although they still focus on spawning habitat, they will conduct the RST studies. However, their plan does not mention escapement or adult age analyses, which are needed to estimate adult recruitment.

### **C. Fry Survival**

1. The Districts' Study Plan includes use of RST data to estimate fry production as recommended by the agencies in their comments on the Districts' Draft Study Plan. We support this approach.

2. The Districts' Study Plan proposes to monitor fry movement as a function of flow with seining rather than snorkeling. Seining is inadequate because capture rates are affected by habitat complexity (i.e., habitat quality) and flow rates.

3. The Districts' Study Plan includes monitoring fry survival using paired RST studies as recommended by the agencies in their comments on the Districts' Draft Study Plan. We support this approach.

4. The Districts' Study Plan does not include monitoring fry health. We recommend the Districts monitor fry health.

### **D. Steelhead Presence/Protection**

1. The Districts' Study Plan does not include determining abundance of adult and juvenile fish at specific intervals throughout the year. This is problematic because the Districts will only conduct surveys during the summer, which will miss adult steelhead.

2. The Districts' Study Plan does not provide for analysis of steelhead data from nearby rivers. There is a greater effort to study steelhead on nearby rivers that would provide useful data on the Tuolumne River, such as counting weirs and more efficient rotary screw trap stations on the Stanislaus and Mokelumne rivers.

3. The Districts' Study Plan proposes studies to evaluate the flow and habitat needs. However, the Districts' proposed studies only consider summer flow and water temperatures. The proposed studies should be expanded to evaluate conditions that affect the success of smolt outmigration and adult upmigration.

#### **E. Predator Control**

1. The Districts' Study Plan includes conducting predation studies over a wide range of flows. The Districts propose to compare low (~400 cfs) and high (> 2,500 cfs) flows under the existing flow schedule. However, the study period will be limited to no more than 10 days. In comments on the Districts' Draft Study Plan the agencies recommended that the studies be conducted for a sufficiently long period to both detect the response of the fish (e.g., variations in migration rates and predation rates) and evaluate the full range of environmental conditions (e.g., fluctuations in water temperature and turbidity).

2. The Districts' Study Plan includes conducting predation studies on largemouth bass. However, the Districts do not propose to study any other common fish predators such as striped bass or Sacramento pikeminnow. They will use angling, electrofishing, or seining in the downstream portions of the river, but it is unclear whether all habitat types will be surveyed. The Districts' Fisheries Study Plan should be revised to include other means of capturing potential predators that are not effectively captured with electrofishing (e.g., gill nets to capture striped bass and Sacramento pikeminnow). Seining is unlikely to be effective for capturing predators.

3. The Districts' Study Plan proposes to conduct predation studies in both winter and spring. We support studies in both winter and spring. We recommend that the Districts be required to conduct the proposed predation studies throughout the winter and spring, with a moratorium on electrofishing during periods of low flow and/or low dissolved oxygen.

4. The Districts' Study Plan proposes to use acoustic tags to quantify smolt predation rates. We generally support the use of acoustic tags. However, we believe that the Districts propose to tag too few fish and use too few stationary receivers, which will not identify critical habitat locations.

5. The Districts' Study Plan does not propose to use paired RST studies to evaluate the effects of predation on juvenile survival in the Tuolumne River. Instead, the Districts will use RST studies to document juvenile movement relative to flow and turbidity, but without linking

downstream movement to juvenile survival. We recommend that paired RSTs be used to better evaluate the effects of predation.

**F. River Temperature**

1. The Districts' Study Plan proposes to use of paired RST studies to determine how flow and temperature affect the survival and production of smolts. We support this proposal.

2. The Districts' Study Plan does not propose to use of escapement and age analyses to determine how flow and temperature affect adult recruitment. We support the agencies' comments on the Districts' Draft Study Plan, which recommended the trend analyses of adult recruitment should be continued because adult recruitment is a direct measure of our goal to improve adult production and because the data base is relatively long-term compared to juvenile survival studies.

3. The Districts' Study Plan calls for the use of acoustic tag studies to determine how flow and temperature affect smolt survival. However, the 3-year study period proposed by the Districts is too short and uses too few fish and receivers to evaluate adequately the importance of temperature.

4. The Districts' Study Plan does not include any fish health studies. Fish health studies are needed to identify the mechanism by which water temperatures affect juvenile survival so that flow management and habitat restoration can target those mechanisms. For example, food limitations could be ameliorated by increasing floodplain inundation during the rearing period, whereas contamination problems could be improved by controlling agricultural return flows.



**COMMENTS ON DEPARTMENT OF FISH AND GAME'S PROPOSAL FOR A  
HATCHERY ON THE TUOLUMNE RIVER**

By letter dated May 23, 2007 (*see* e-Library no. 20070604-0088), the DFG filed comments which clarified its previous comments and responded to the Districts' Fisheries Study Plan. The DFG recommended activities for the Oak Ridge National Laboratory (ORNL) to assist FERC, including:

“c. Joining [DFG] and others in developing a hatchery management plan thence a conservation style hatchery (i.e., artificial propagation) to i) ensure an adequate supply of study fish and if necessary ii) supplement, rather than a replace, wild fish production in the Tuolumne River in years with relatively low escapement.”

*Id.*, p. 3.

The Conservation Groups have *significant* concerns regarding construction and operation of a hatchery on the Tuolumne River and do not support DFG's recommendation based on existing information in the record. We acknowledge that successful implementation of a robust study plan, as put forth by the agencies in their comments on the Districts' Draft Study Plan, will require study fish. However, we do not agree that a hatchery on the Tuolumne River is the only potential source of study fish. We believe that all reasonable alternatives for study fish should be fully considered, such as using fish from neighboring rivers. We understand that the hatchery on the Merced River already provides some fish for the Tuolumne River. Another alternative that warrants consideration is harvesting eggs from fish on the Tuolumne and transporting them to the Merced hatchery for development. Further, at this time we are not persuaded that a hatchery to supplement wild fish production is necessary.

The potential impacts of hatcheries are well documented in the scientific literature, as cited in the Friends of the Tuolumne's June 6, 2007 comments filed with the Commission. Any discussion of a proposed hatchery must include measures adequate to mitigate the potential adverse impacts of the hatchery on wild fish populations and their habitat. The DFG, as proponent of the proposal, should also address the water supply and funding for a hatchery.

## CONCLUSION

Thank you for considering these comments. Please contact the undersigned with any questions regarding this matter. The Conservation Groups look forward to working with Commission staff to develop a robust study plan which will provide adequate data on which to base a minimum flow schedule and other non-flow mitigation measures adequate to protect Tuolumne River fisheries.

Respectfully submitted,



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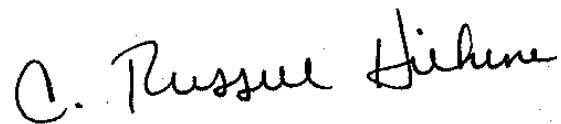
**CERTIFICATION OF SERVICE**

**Modesto and Turlock Irrigation Districts, New Don Pedro Project (P-2299)**

I hereby certify that I have this day served the foregoing document, "CALIFORNIA RIVERS RESTORATION FUND, TUOLUMNE RIVER PRESERVATION TRUST, FRIENDS OF THE RIVER AND CALIFORNIA TROUT'S COMMENTS ON THE MODESTO AND TURLOCK IRRIGATION DISTRICTS' STUDY PLAN FOR THE NEW DON PEDRO HYDROELECTRIC PROJECT (FERC NO. P-2299)," upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated: June 19, 2007

By:



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