

**EXPERT REPORT
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1. Introduction and Summary of Opinions

I have been identified as an expert by the U. S. Department of Justice to provide testimony in NRDC v. Rodgers. I have been asked to express opinions on what would be the effect(s) of Central Valley Project Operations if the Friant Division of the Central Valley Project were to be operated or managed in the manner proposed by the NRDC experts, particularly Dr. Moyle, Dr. Kondolf and Dr. Kirby. In addition, I have been asked to express my opinions on any matters related to CVP policy, operations, water service contracts and water right settlement agreements.

As a result of my review I have reached the following conclusions:

The effect(s) of Central Valley Project Operations if the Friant Division of the Central Valley Project were to be operated or managed in the manner proposed by the NRDC experts, particularly Dr. Moyle, Dr. Kondolf and Dr. Kirby are unknown at this time. However, as Class 1 water from the Friant is fully utilized every year and most if not all of the Class 2 water made available, there will be a reduction in water supplies to those CVP Contractors in the Friant Division. In addition, the ripple effect is that other CVP Contractors will be picking up the costs as rates are based on the capital cost of the facilities and the operation and maintenance costs of those facilities, which will remain the same.

The expert reports by Dr. Moyle, Dr. Kondolf and Dr. Kirby address some significant issues and concerns but overall the reports are incomplete as to the critical components of what is necessary to restore a fishery in the San Joaquin River and therefore trying to determine the effects on the Friant Division of CVP are almost impossible to conclude.

The United States does not have the legal authority to restore the San Joaquin River. Even if the United States had the legal authority to restore the San Joaquin River, Reclamation does not have Federal funds to: (i) complete a study; (ii) perform any initial capital investment; or (iii) perform any annual operation and maintenance actions necessary to maintain the San Joaquin River. However, from a Central Valley Project Policy perspective, prior to the decision release of water out of Friant Division facilities for restoration of fisheries within the San Joaquin River, a detailed comprehensive study must be accomplished. The following minimum actions should be undertaken:

1. A determination should be made of who owns the facilities along the San Joaquin River that need to be modified, removed or re-operated to allow for fish passage and a recommendation on how these actions should be undertaken.

2. A detailed assessment must be accomplished to determine the type of habitat that exists today and what actions both flows and mechanical are necessary to improve the habitat to maintain the fish in good condition
3. A detailed assessment and agreements must be completed with all water right holders within the 150 miles between Friant Dam and the confluence of the San Joaquin River and the Merced River.
4. A land record search must be accomplished to determine who owns the lands along both sides of the San Joaquin River, and permission must be obtained to enter on to such lands as part of this study.
5. An evaluation must be accomplished on the integrity of the levees along the San Joaquin River and an analysis of channel capacity along with recommendations to improve levees and channel capacity.
6. Development of a monitoring program that checks critical milestones and allows for adaptive management.
7. A thorough economic analysis must be accomplished to determine the impact of the reduction of water supplies to Friant Division contractors and determine what actions can realistically be taken to offset such impacts.
8. A review must be completed to insure that actions taken to save the specific fish identified in these reports will not adversely impact other potential species that are threatened or endangered or for that matter other species in general.

2. Professional Qualifications

I have been employed by the United States Bureau of Reclamation since March 1991. I have served as a Repayment Specialist, Chief of the Water Contracts, Water Rights and Reclamation Reform Act Branch, Chief of the Special Project Division, Regional Resources Manager of Resources Management Division, and currently as the Deputy Regional Director. I have a Bachelor of Science Degree from California State University Chico with an emphasis in Business Administration and a MSBA from California State University Sacramento with an emphasis in Accounting. My time allocated to this effort is covered by my routine salary as a Federal Reclamation employee.

I was deposed in June 2005 for the Stockton East Water District, et al. v. United States, Court of Federal Claims, No. 04-541.

3. Data and Other Information Considered in Forming My Opinions

In forming the opinions set forth herein and in preparing this expert report, I reviewed and considered the following materials:

The Expert reports of Dr. Moyle, Dr. Kondolf and Dr. Kirby. A map developed by GIS on the San Joaquin River.

United States Government Printing Office, 85th Congress, 1st Session, House Document No. 246, *Central Valley Project Documents, Part 2. Operating Documents, 1957.* Information already provided as part of the Administrative Record, Bates Number BOR5937013768 to BOR5937014640

United States Government Printing Office, 85th Congress, 2nd Session, House Document No. 416, *Central Valley Project Documents, Part 1. Authorizing Documents, 1956.* Information already provided as part of the Administrative Record, Bates Number BOR5937014641 to BOR5937015230

4. Discussion

The Dr. Peter Moyle Export Report

I am not qualified to address either the quantity of water that Dr. Moyle believes should be released for Salmon restoration or the other actions identified by Dr. Moyle as important to Salmon restoration. However, the following should be noted.

In Section C, APPARENT CONSTRAINTS FOR RECOVERY, paragraph number 1. PASSAGE, Dr. Moyle identifies a series of physical structures that need to be modified, removed or re-operated. All of these structures are not owned by the United States and the United States does not have the legal authority to direct that such actions be accomplished.

In Section C, APPARENT CONSTRAINTS FOR RECOVERY, paragraph number 2. FLOWS. And Section E. A FLOW REGIME FOR THE RECONCILED SAN JOAQUIN RIVER. In Section C, Dr. Moyle talks about the need to maintain a live stream and in Section E., Dr. Moyle talks about the quantity of water that is necessary by water year classification (Dry, Normal-Dry, Normal-wet, Wet, and Critical Dry Years). However, the United States does not have the total control over any CVP water ordered released from Friant Division facilities, entities that hold Water rights pursuant to California State law may exercise their rights to divert any water released in the San Joaquin River including the Exchange Contractors (Central California Irrigation District, Columbia Canal Company, San Luis Canal Company and Firebaugh Canal Company pursuant to contract Ilr-1144, Second Amended Contract for Exchange of Waters). Additionally, experience in 2005 has shown that the San Joaquin River levees and channel capacity cannot currently manage the pulse flows recommended in the Flow regime.

The Dr. Kenneth W. Kirby Expert Report

Paragraph 68 A. I am not qualified to address Dr. Kirby's modeling efforts or conclusions and I have assumed that the average annual quantity of water identified by Dr. Kirby needed for restoration flows (Class 1 Friant water supplies (28,000 acre-feet of water), Class 2 Friant water supplies (86,000 acre-feet of water) and surplus water supplies (106,000 acre-feet of water)) is correct. However, the following should be noted.

Financially the CVP Water and Power Contractors are impacted three ways.

(1) Assuming the CVP water being released from Friant Division is classified as a mitigation action pursuant to Reclamation Law, and then Reclamation costs previously allocated to this water would be reallocated to other CVP water service and Power customers. Although the repayment of costs incurred by the United States in operating and maintaining CVP facilities as well as the initial construction costs would remain the same, the water rates to be charged the CVP Contractors will increase because less water is actually being sold and the timing of when such funds would be deposited into the United States Treasury could change and thereby increase borrowing costs to the United States. (2) Friant Division contractors are currently paying operation and maintenance costs associated with pumping and conveying Sacramento River water through the Delta Mendota Canal to the Exchange Contractors as part of the cost of Exchange Contractors willing to accept Sacramento River water in lieu of exercising their senior water rights for San Joaquin water. If Friant Division contractors do not continue to pay such costs, then either the Exchange Contractors will divert the San Joaquin River water when it reaches the Mendota Pool or other CVP Contractors who may benefit will be expected to pay those additional costs, spreading the economic impacts to all CVP Contractors. (3) Additional operation and maintenance costs would be expected from the additional annual fishery actions.

Paragraph 68 B. Dr. Kirby indicates that modeling suggests some class 1 contractors could receive up to a 34% supply reduction in the worst year of record. He continues to state, ". . . the Bureau gives highest priority to urban users if its contractual shortage provisions. In addition to this contractual protection, urban users can make arrangements through transfers and exchanges to make up the shortfalls."

This is not a correct for Friant Division contractors. Reclamation does not have an urban priority in Friant Division contracts. All class 1 contractors are treated the same under the contractual shortage provisions. Class 1 contractors' Friant water supply has priority over Class 2 contractors. However, most class 1 contractors do not have a supplemental source of water, i.e. groundwater.

The cost of transfer water in the Friant Division ranged from \$120 to \$150 in early 2005. With the removal of 220, 000 acre-feet of water for restoration purposes, Reclamation would expect the cost of water to increase. Some Friant contractors such as the City of Orange Cove will face severe financial hardship if they try and replace the water and Reclamation is not sure how exchanges would work since Friant Division contractors are

loosing on average 220,000 acre-feet of water and would not have water to exchange. The Friant Division is not operationally integrated with the CVP in the sense that water supplies from Shasta cannot be easily made available to all Friant contractors, therefore the ability to exchange and transfer water supplies to make up for the shortfalls is very limited.

Paragraph 68 C. Dr. Kirby states, “*Based on my previous experience and discussions with others about the possibility of a groundwater bank near Gravelly Ford, I expect there will be an increase in groundwater recharge along the San Joaquin River in the area around Gravelly Ford that is often dry under current operations. Based on recent discussions with Dr. Steve Deverel, I understand that his analysis indicates that the increase in recharge could be significant. The increased groundwater will be available for beneficial use by USBR, should they choose to manage it, or to other groundwater users within the region.*”[Emphasis added]

While the first 2 sentences may or may not be correct, Reclamation does not necessarily agree with the third sentence because: (1) Reclamation does not own any of the land that overlays that area and therefore, Reclamation could not extract and manage the groundwater in that area; (2) Reclamation would need authority to purchase the land in order to extract the ground water and make it available for the CVP contractors, that is assuming that the current landowners who would be receiving these new ground water benefits are willing to sell and; (3) even if Reclamation had the authority to buy the land and extract the groundwater, to convey it to most of the Friant contractors would be very expensive.

Paragraph 68 D. Dr. Kirby states, “*Other CVP contractors will experience benefits resulting from increased flows in the lower San Joaquin River from Friant. This could result in improved water quality near Vernalis, and as such reduce the demand for water quality induced releases from New Melones designed to dilute the salinity in the lower San Joaquin.*”

The CVP may gain some additional operational options if Friant operations were reconnected to the Delta, but all impacts and benefits must be modeled and evaluated. For example.....Impacts to New Melones operations must be studied to determine how potential benefits are offset by loss of potential flood releases from Friant.

Paragraph 70. Dr. Kirby states, “*Some promising management actions available to lessen the local effect of the reduction of available water that can be diverted from Friant for use by current Friant Division contractors.*”

Dr. Kirby lists several programs described as promising, but for the most part makes no direct link to how the would offset the impact to Friant water users.

- a. Reoperation – Reclamation has the authority to reoperate the project to meet objectives, but this does not describe how the operation could occur to benefit the Friant water users.

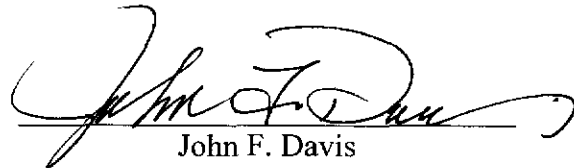
- b. Coordinated operations with other reservoirs - Impacts to New Melones are uncertain and additional studies would have to be performed before a likely benefit could be claimed. And, it is not clear how this would help out Friant users.
- c. Conjunctive use – If additional conjunctive use along the Friant - Kern canal could provide 50 to 80 TAF of additional yield, why would not this program be implemented independently of the restoration flows
- d. Integrated solutions by the CVP – Similar to comment c above, land retirement actions in the CVP service area may occur independent of this action. Any water freed up would serve to help meet shortages on the Westside of the valley and should not be tied to mitigation for restoration flows.
- e. Recirculation – It is not clear how this would lessen local effects of the restoration flows. It may redirect impacts to CVP Water contractors and Power customers on the Westside of the valley.
- f. Transfers and exchanges – These programs may be utilized to lessen impacts to the Friant users, but they could also additionally burden these programs and tighten the market for water. Additional pressure on water transfers could increase the cost of water and affect other water users and programs. Additionally, clarification needs to be provided on what is being exchanged. There is not a large capability or a significant water supply available to transfer or exchange with the Friant Contractors.
- g. EWA water – It is not clear how release of EWA water benefits the local area. Any purchased water would probably have to be in addition to any new flow requirement.
- h. Pump in of flood flows – The report states that this program is already being pursued. If so, its benefit should not be considered as mitigating actions for a restoration flow unless the new restoration flow creates new opportunities to use this program.
- i. Crop shifting, fallowing, land retirement – Reclamation would need an explanation on how the restoration flow program creates new opportunities for these programs. It is important to note that a large percentage of the crops grown in the Friant Division are fruits and nuts. Crop shifting and land fallowing are not viable options for orchards. The use of these programs would probably not yield much water.
- j. Water use efficiency – Reclamation used an 85% efficiency rate when reviewing the water needs within the Friant Division for the Central Valley Project Water Service Contract renewals. Reclamation also has a ongoing contract with the Irrigation Training and Research Center of California Polytechnic State University, San Luis Obispo to assist CVP contractors in improving water use efficiency, so Reclamation would not anticipate any significant water increase here over what we are already doing within the Friant Division to offset water supply reductions due to the restoration flow program.

5. Conclusion

The effect(s) of Central Valley Project Operations if the Friant Division of the Central Valley Project were to be operated or managed in the manner proposed by the NRDC experts, particularly Dr. Moyle, Dr. Kondolf and Dr. Kirby are unknown at this time.

The expert reports by Dr. Moyle, Dr. Kondolf and Dr. Kirby address some significant issues and concerns but overall the reports are incomplete as to the critical components of what is necessary to restore a fishery in the San Joaquin River and therefore trying to determine the effects on the Friant Division of CVP are almost impossible to conclude.

Dated: September 19, 2005



John F. Davis