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BEFORE THE  
CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

CALIFORNIA WATERFIX WATER )  
RIGHT CHANGE PETITION )  
HEARING )

JOE SERNA, JR. BUILDING  
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
COASTAL HEARING ROOM  
1001 I STREET  
SECOND FLOOR  
SACRAMENTO CALIFORNIA

PART 2

Tuesday, March 27, 2018

9:30 A.M.

VOLUME 22

Pages 1 - 287

Reported By: Deborah Fuqua, CSR No. 12948

Computerized Transcription by ProCAT



1 APPEARANCES:

2 CALIFORNIA WATER RESOURCES BOARD

3 Division of Water Rights

4 Board Members Present

5 Tam Doduc, Co-Hearing Officer  
6 Felicia Marcus, Chair and Co-Hearing Officer  
7 Doreen D'Adamo, Board Member

8 Staff Present

9 Andrew Deeringer, Staff Attorney  
10 Conny Mitterhofer, Senior Water Resources Control Engr.

11

PETITIONERS

12

13 For California Department of Water Resources  
14 James (Tripp) Mizell, Senior Attorney  
15 Duane Morris, LLP  
16 By: Jolie-Anne Ansley, Attorney at Law

17

18 State Water Contractors  
19 Stefanie Morris  
20 Becky Sheehan

21

22 PROTESTANTS

23 County of San Joaquin  
24 Thomas Keeling

25

26 San Luis Delta-Mendota Water Authority and Westlands  
27 Water District  
28 Daniel O'Hanlon

29

30 California Sportfishing Protection Alliance, California  
31 Water Impact Network, AquAlliance  
32 Michael Jackson

33

34 (Continued)

1 APPEARANCES (continued):

2 Delta Agencies and other parties  
3 Dean Ruiz

4 LAND  
5 Osha Meserve

6 California Water Research  
7 Deirdre Des Jardins

8 Friends of the River, Sierra Club California  
9 Bob Wright

10 Clifton Court LLP  
11 Suzanne Womack

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1 Tuesday, March 27, 2018 9:30 a.m.

2 PROCEEDINGS

3 ---o0o---

4 CO-HEARING OFFICER DODUC: Good morning,  
5 everyone. Welcome -- or welcome back to this water  
6 rights change petition hearing for the California  
7 WaterFix project.

8 I am Tam Doduc. With me to my right is Board  
9 Chair and Co-Hearing Officer Felicia Marcus. We will  
10 be joined shortly, I believe, by Board Member DeeDee  
11 D'Amado, who will be sitting to the Chair's right. To  
12 my right is Andrew Derringer and Conny Mitterhofer. We  
13 are being assisted today by Ms. Gaymon.

14 Our usual three announcements: In the event  
15 of an emergency or a drill, for that matter, an alarm  
16 will sound. So please take a look around and identify  
17 the exit closest to you. But we know from experience  
18 that that's the only exit [indicating] that will allow  
19 you to access the stairs to go down to the first floor  
20 and meet up in the park across the street.

21 If you're not able to use the stairs, please  
22 flag down one of the safety monitor people, and they  
23 will direct you to a protected area.

24 Secondly, please remind that this meeting is  
25 being Webcasted and recorded, so always speak into the

1 microphone after ensuring that it is on. It is on when  
2 the green light is lit. And begin by stating your name  
3 and affiliation.

4 Thirdly and most importantly, in order to  
5 prevent noise annoyance and to show respect for  
6 witnesses appearing today, please take a moment and put  
7 all your noise-making devices to silent, vibrate, do  
8 not disturb.

9 Before we begin, a couple of housekeeping  
10 matters. Yesterday, I believe you all should have  
11 received the DWR Motion for Reconsideration of Ruling  
12 and Hearing Scope. All parties will have until  
13 5:00 p.m. tomorrow to respond to that.

14 Are there any other -- just for planning  
15 purposes for those of you who need to be somewhere  
16 later this afternoon, just note that the City Council  
17 is holding a special meeting at 5:00 o'clock tonight  
18 across the street. And I'm told there is some type of  
19 demonstration being planned for the afternoon, that  
20 people may start gathering as early as noon or  
21 1:00 o'clock. So keep in mind that there might be some  
22 traffic and blockages and other type of obstacles for  
23 your departure later today.

24 Any other housekeeping matters?

25 Mr. Mizell.



1           MR. MIZELL: Good morning, Tripp Mizell, DWR.  
2 On further review, I just wanted to put to your  
3 attention that I believe our cross-examination for  
4 Panel 1 will be a bit longer than our estimate  
5 yesterday. But at the same time, we've been able to  
6 trim our cross-examination of Panel 2.

7           CO-HEARING OFFICER DODUC: All right. Do you  
8 have any new estimate for Panel 1 or Panel 2?

9           MR. MIZELL: We would like to request two  
10 hours for Panel 1. And I believe I can conduct  
11 Panel 2's cross in about 20, 25 minutes.

12           CO-HEARING OFFICER DODUC: All right.  
13 Any other housekeeping matters?

14           Ms. Meserve.

15           MS. MESERVE: Good morning. Osha Meserve on  
16 behalf of the Environmental Council of Sacramento  
17 Sandhill cranes, and Friends of Stone Lakes.

18           I have been working with some scheduling  
19 issues, and not to burden the Hearing Officer, but I  
20 will be submitting a writing. I've conferred with DWR  
21 and Save the California Delta Alliance regarding a  
22 change in places between order of direct testimony 19  
23 for SCDA, and our order is the 24th. And I'm trying to  
24 get our witnesses on before a couple of them become  
25 available for a period of time beyond, I think, what

1 will be the case in chief presentation period.

2           So I've conferred with DWR. Seems okay with  
3 them. There's enough notice they can prepare. So I'm  
4 going to go ahead and submit a letter today along with  
5 Mr. Michael Brodsky requesting that change.

6           CO-HEARING OFFICER DODUC: All right.

7           MS. MESERVE: Thank you.

8           CO-HEARING OFFICER DODUC: Thank you for the  
9 heads-up. We will watch out for it.

10           All right. If there is no other housekeeping  
11 matter, welcome gentlemen. If I may ask you to please  
12 stand and raise your right hands.

13           (Witnesses sworn)

14           TOM CANNON, CHRIS SHUTES,  
15           TOM STOKELY, DR. G. FRED LEE,  
16           BILL JENNINGS,  
17           called as Panel 1 witnesses for  
18           group 31, California Sportfishing  
19           Protection Alliance, California  
20           Water Impact Network, and  
21           AquAlliance, having been first  
22           duly sworn, were examined and  
23           testified as hereinafter set  
24           forth:

25           CO-HEARING OFFICER DODUC: Mr. Jackson, all

1 yours. I think we've got the -- yes, correct amount of  
2 time.

3 MR. JACKSON: Thank you.

4 DIRECT EXAMINATION BY MR. JACKSON

5 MR. JACKSON: Mr. Jennings, is CSPA-200 a true  
6 and correct copy of your testimony in Part 2 of this  
7 hearing?

8 WITNESS JENNINGS: Yes, it is.

9 MR. JACKSON: Is CSPA-1 from Part 1 your  
10 curriculum vitae?

11 WITNESS JENNINGS: Yes.

12 MR. JACKSON: Are there any changes in it from  
13 Part 1?

14 WITNESS JENNINGS: No. Other than a few  
15 spelling corrections, it will stand.

16 MR. JACKSON: And are Exhibits 231 through 308  
17 exhibits that you used in forming your testimony in  
18 CSPA-200 Errata?

19 WITNESS JENNINGS: Yes, they are. I cited to  
20 them in my testimony.

21 MR. JACKSON: Thank you, sir. Would you  
22 please summarize your testimony. And it's my  
23 understanding that you're going to use a few minutes  
24 over the 20 minutes and other people will use less; is  
25 that correct?

1 WITNESS JENNINGS: Yes.

2 MR. JACKSON: Would you please summarize your  
3 testimony.

4 WITNESS JENNINGS: Well, good morning. I'm  
5 Bill Jennings representing the California Sportfishing  
6 Protection Alliance. I'm here with congestion and  
7 hoarse, and so it's going to be interesting.

8 I've been involved in virtually every major  
9 water right and water quality proceeding in this  
10 estuary over the last three decades. The Board is  
11 confronted with an almost impossible situation in this  
12 hearing: a vastly oversubscribed water system and an  
13 aquatic ecosystem in collapse. It's exacerbated by the  
14 failure to meaningfully address these issues over the  
15 last 50 years.

16 The Board's task is made more difficult by  
17 hearing this matter before completion of the updated  
18 Bay-Delta Plan and by not conducting its own  
19 environmental review to secure the information that  
20 would enable the Board to meet its responsibilities  
21 under the Water Code, the Public Trust Doctrine, and  
22 balancing of beneficial uses.

23 It is made exponentially more difficult  
24 because proponents have submitted a proposal below  
25 based upon the "trust us" principle: Trust us that

1 D1641 is protective and the projects will operate  
2 responsibly. Trust us that environmental fish screens  
3 in a tidal prison will work. Trust us that the  
4 WaterFix BiOps and subsequent opinions arising from  
5 their programmatic nature will be more successful than  
6 previous iterations. Trust us that a back room  
7 Adaptive Management Program and yet other  
8 to-be-developed construction, operation, mitigation,  
9 monitoring, and restoration plans will be protective.

10           Considering the history of the last 50 years  
11 and fisheries approaching extinction, trust is a bridge  
12 too far. An understanding of how we got here is  
13 fundamental to making more effective and equitable  
14 choices in the future. While brief- -- fisheries have  
15 collapsed since the State Water Board was established.  
16 And while briefly describing the historical abundance  
17 of fisheries, my testimony focuses on their fate since  
18 the State Water Board was established and the State  
19 Water Project began diversions in 1967.

20           Fish abundance is the ultimate public trust  
21 report card. And the fish agencies, the Board, the  
22 project operators, and adaptive management have all  
23 earned an F.

24           Between 1967 and '71 and 2012 and 2016, the  
25 California Department of Fish and Wildlife's Fall

1 Mid-water Trawl abundance indices -- monthly surveys at  
2 122 sites in September through December -- for striped  
3 bass, Delta smelt longfin smelt, American shad,  
4 splittail, and threadfin shad have declined by 99.2,  
5 98.1, 99.8, 86.3, 98.0, and 94.5 percent respectively.  
6 The Summer Townet Survey abundance indices between '69  
7 and '73 and 2013-17 for Delta smelt and striped bass  
8 have declined by 98.3 and 97.3 percent respectively.

9           Anadromous fisheries have experienced similar  
10 decline.

11           The Central Valley Project Improvement Act  
12 made fish and wildlife protection a coequal goal of the  
13 State and Central Valley Project and required the  
14 Secretary of the Interior to implement a program to  
15 ensure that the natural production of anadromous fish  
16 in the Central Valley would double from 1967 to 1991  
17 levels by 2002.

18           The fish doubling requirement is incorporated  
19 into the California Fish and Game Code, both the '93  
20 and '06 Water Quality Control Plans for the Bay-Delta,  
21 and U.S. EPA's 1995 promulgated Water Quality Standards  
22 for the Bay-Delta.

23           The Anadromous Fisheries Restoration Plan was  
24 released as a draft in 1997, finalized in 2001.  
25 However, the 1992-2015 doubling period, natural

1 production of Sacramento River fall-run, late-fall-run,  
2 winter-run, and spring-run Chinook salmon have declined  
3 from the '67-'91 baseline period by 43, 52.3, 88.8, and  
4 98.0 percent respectively and are only 28.6, 23.8, 5.5,  
5 and 1.0 percent respectively of the mandated doubling  
6 of levels.

7           The 1991-'05 production of natural fall-run  
8 Chinook salmon into Stanislaus, Tuolumne, and Merced  
9 rivers has declined from the 1967 to 1991 average by  
10 51.2, 68.5, and 54.5 percent respectively and only 24.1  
11 and 34.3 percent respectively of mandated doubling  
12 levels. Excuse me. Natural production during the last  
13 ten years of the doubling plan period has significantly  
14 declined from production in the first ten years.

15           The State Water Board has failed to protect  
16 public trust resources.

17           As historical actions are fundamental to  
18 understanding the likelihood of future actions, I  
19 address the failures of the State Water Board's major  
20 water rights and water quality proceedings over the  
21 last 50 years.

22           To summarize a few key points: First, in each  
23 of these proceedings, fisher agencies, NGOs, and others  
24 have testified on the relentless decline of fisheries,  
25 and yet following each of these proceedings, fisheries

1 continue to decline.

2           Second, the Board's 1978 Decision 1485 found  
3 that, "Full mitigation of project impacts on all  
4 fisheries species would require a virtual shutting down  
5 of the pumps."

6           The trial court rejected the 1485 standards as  
7 inadequate and ordered the Board to set aside the  
8 decision. The appellate court agreed the Board erred  
9 and directed the Board to first establish water quality  
10 standards and only then incorporate those standards  
11 into relevant water rights permits. The Board is  
12 ignoring the Court's explicit direction in this  
13 WaterFix hearing.

14           Third, in an effort to comply with the Court's  
15 direction, the Board began a new proceeding in 1987  
16 that led to a Draft Water Quality Control Plan in '88;  
17 however, because of the flow and export requirements in  
18 the plan, then Governor Deukmejian directed the Board  
19 to withdraw the Draft Plan.

20           The Board approved a new Water Quality Control  
21 Plan for Salinity in 1991 that EPA disapproved because  
22 the fish and wildlife standards were not protective.  
23 EPA began to development of federal standards.

24           Fourth, in response, the Board released the  
25 Draft Water Rights Decision 1630 in 1992, and my



1 testimony quotes from the vivid findings on the  
2 stunning collapse of fisheries since the State Water  
3 Project began exporting water. The draft order  
4 established stringent reverse flow conditions --  
5 restrictions, specific pulse flow requirements, new  
6 export controls, mitigation funding, water conservation  
7 measures, and estimated those measures would reduce  
8 exports by 800,000 to 1.9 million acre-feet a year.  
9 Responding to political pressure, then Governor Wilson  
10 directed the Board to withdraw 1630.

11 Fifth, EPA promulgated new federal standards  
12 in February of 1995 that included stringent protection  
13 for striped bass and a salmon doubling criteria based  
14 upon survival of out-migrants. These federal stands at  
15 40 CFR 131.37 remain on the books and remain as the  
16 most protective biologically based performance  
17 standards, but they've been ignored and unenforced by  
18 the Board.

19 In response, the Board issued the 1995 Water  
20 Quality Control Plan for the Bay-Delta that was  
21 implemented in D1641 in 2000. The 2012-2016 Fall  
22 Midwater Trawl Indices revealed that striped bass,  
23 Delta smelt, longfin smelt, American shad, splittail,  
24 and threadfin shad declined 68.5, 95.3, 95.0, 89.9,  
25 93.9, and 93.6 percent respectively from the 2004-2006

1 indices immediately following D1641.

2           The consistent element spanning the decline of  
3 fisheries has been the increase in exports and the  
4 decrease in outflow as a percentage of unimpaired flow.  
5 Since 1995 to 1975, actual outflow as a percentage of  
6 unimpaired flow has ranged between 21 and 40 percent  
7 50 percent of the time.

8           Sixth, the Regional Board's Basin Plan  
9 established a temperature standard of 56 degrees from  
10 Shasta Dam to Hamilton City. But the State Board only  
11 required the Central Valley Project to meet the  
12 standard at Red Bluff, ignoring 44 miles of habitat  
13 protected by the water quality standards. The National  
14 Marine Fishery Service 2009 Biological Opinion pushes  
15 the temperature compliance points even further  
16 upstream -- you know, to Bend Bridge, Balls Ferry,  
17 Airport Road, all the way up to Clear Creek, depending  
18 on the year. Also, the storage -- Shasta Storage and  
19 temperature compliance point measures in the BiOps have  
20 not been met. Consequently, spawning habitats for  
21 winter-run and spring-run Chinook salmon is frequently  
22 compressed into a few miles below Keswick Dam. And the  
23 Board has been a participant in these actions but never  
24 taken enforcement action for any violations nor  
25 acknowledge or responded to CSPA's 2015 formal

1 temperature complaint.

2           Seventh, while the Board ignored numerous  
3 violations of standards during '76-'77 and '81 and '92  
4 droughts, it now frequently relaxes water quality  
5 standards during droughts. Multi-year droughts of  
6 large scale extent have occurred more than 40 percent  
7 of the time over the last hundred years. D1641  
8 established explicit dry-year and critical dry-year  
9 standards and never envisioned that those standards  
10 would be casually relaxed without even a formal  
11 hearing. The Board never acknowledged or responded to  
12 CSPA's 2015 complaint for violations of Bay-Delta  
13 requirements.

14           The only consequence of the Board's actions  
15 over its 50-year life is the continual decline of  
16 fisheries because it failed to provide what fish  
17 crucially need: adequate in-stream flow coupled with  
18 meaningful and enforceable biological performance  
19 requirements.

20           The fish agencies have failed to protect the  
21 public trust.

22           The fish agencies have never been absent from  
23 a major Bay-Delta water right proceeding over the last  
24 50 years. Their actions in this pivotal hearing is an  
25 indictment of their new role as politically captured

1 agencies. Over the last quarter century, more fish  
2 species have been listed as threatened or endangered in  
3 California than anywhere in the nation.

4           Despite myriad listings, biological opinions,  
5 critical habitat designations, recovery plans, and  
6 adaptive management and restoration programs, fish  
7 populations continue to decline.

8           The 2017 non-jeopardy Biological Opinions for  
9 WaterFix are a graphic example. For example, the U.S.  
10 Fish and Wildlife Service BiOps for Delta smelt is  
11 programmatic and requires subsequent consultations  
12 regarding the North Delta diversions, project  
13 operations, adaptive management program, the Head of  
14 Old River Gates and other issues. The NMFS BiOps for  
15 salmon, like the California Department of Fish and  
16 Wildlife Consistency Determination, depend upon the  
17 future development of programs like adaptive management  
18 and monitoring that will be addressed in the future.  
19 None of the agencies know if experimental fish screens  
20 in a major migration corridor and habitat for larval  
21 life stages will work as envisioned. None of the  
22 agency BiOps include in-stream flow requirements  
23 consistent with the previous recommendations to this  
24 board of flows necessary for species survival and  
25 recovery. None include explicit, meaningful,

1 biological performance requirements with consequences  
2 for failing to achieve them. But all of them provide  
3 for future requests to the Board to relax water quality  
4 standards.

5           The only constant is that the combined efforts  
6 of fish agencies have chaperoned the continue decline  
7 of fisheries because they couldn't provide what fish  
8 crucially need, adequate in-stream flow coupled with  
9 meaningful and enforceable biological performance  
10 measures.

11           Adaptive management has failed to protect the  
12 public trust resources.

13           Along with a reliance upon non-protective  
14 D1641 standards, adaptive management is a centerpiece  
15 of WaterFix. The project proposes to begin operations  
16 based on an H3+ scenario and subsequently employ  
17 adaptive management to operate somewhere between  
18 Boundary 1 and 2, a difference of 2.8 million  
19 acre-feet.

20           Without a final agreement and funding concept,  
21 the adaptive management program remains essentially a  
22 concept. Unlike most adaptive management programs  
23 around the world, the WaterFix plan is a backroom  
24 process limited to project operators, water  
25 contractors, and fishery agencies. Stakeholders,

1 including local governments, tribes, NGOs, legal users  
2 of waters, and the public are excluded.

3 I quoted from the National Research Council's  
4 review of BDCP's adaptive management plan and the Delta  
5 Independent Science Board's review of the R-DEIR and  
6 FEIR regarding the problems of adaptive management and  
7 the inadequacies of the plan. Most adaptive management  
8 programs around the world have failed. And all of the  
9 identified reasons for failure exist in this estuary on  
10 steroids.

11 Adaptive management in large, highly complex  
12 ecosystems is extremely difficult, time-consuming, and  
13 expensive. In highly stressed and over-appropriated  
14 watersheds where high-value resources and sharp  
15 political conflict over management choices are  
16 involved, the difficulty increases substantially.  
17 Mix in a high degree of risk and uncertainty and the  
18 difficulty increases exponentially.

19 The Delta has been adaptively managed for more  
20 than 30 years. CalFed -- mentioned adaptive management  
21 138 times, the Vernalis Adaptive Management Program,  
22 the Anadromous Fish Restoration Program, the  
23 Interagency Ecological Program, Collaborative Science  
24 and Adaptive Management Program, the Reasonable and  
25 Prudent Alternatives of the BiOps, the Recovery Plan

1 for salmon and steelhead, the Pelagic Organism Decline  
2 Management Team, all of these were predicated -- are or  
3 were predicated on adaptive management. The Blue  
4 Ribbon Task Force's Delta Vision Report was based on  
5 adaptive management. And BDCP, it's offspring,  
6 envisioned adaptive management from the very beginning,  
7 and yet after a decade, we have no final and funded  
8 signed plan.

9           The only constant is that adaptive management  
10 has chaperoned the continued decline of fisheries  
11 because it couldn't provide what fish crucially need:  
12 adequate in-stream flow coupled with meaningful,  
13 enforceable biological performance requirements.

14           The State Board has sufficient information  
15 regarding necessary flows and the needs of fisheries.

16           The Delta Reform Act directed the Board to  
17 review existing water quality standards and use the  
18 best available science to develop flow criteria  
19 necessary to protect public trust resources. The Board  
20 was also directed to consider that information in any  
21 proceeding involving a change in the point of diversion  
22 to the Sacramento River.

23           The flow hearing was the most intense and  
24 comprehensive effort to identify necessary flows to  
25 protect public trust resources in the history of the

1 estuary. The Board appointed an illustrious group of  
2 recognized experts to serve as an expert panel and  
3 received expert testimony from all of the fishery  
4 agencies, DWR, the Bureau, water contractors, NGOs, and  
5 other. In August 2010, the Board found that present  
6 flows were insufficient to protect public trust  
7 resources, and identified a flow regime based on a  
8 percentage of unimpaired flow necessary to protect  
9 those resources.

10 The Delta Reform Act also directed Department  
11 of Fish and Game in consultation with the Services to  
12 develop flow criteria and quantifiable biological the  
13 objectives for species of concern dependant on the  
14 Delta based on best available science. The final  
15 report was submitted to the Board in November of 2010,  
16 and the recommendations are consistent with the Board's  
17 earlier flow report.

18 The two reports represent the best available  
19 science on flows necessary to protect public trust  
20 resources. The absence of the fishery agencies coupled  
21 with the paucity of detailed biological testimony in  
22 this WaterFix hearing stand in sharp contrast to the  
23 extensive and comprehensive testimony of the 2010  
24 proceedings.

25 CSPA's testimony by Tom Cannon and



1 Chris Shutes is consistent with the findings and  
2 recommendations of the 2010 mandated flow proceeding.

3           The Board's disavowal of the 2010 proceedings  
4 and its refusal to incorporate those reports and  
5 hearing records into the WaterFix hearing illustrates  
6 bias and intent that frankly is an indictment of the  
7 Board's failure to protect public trust resources that  
8 should have been included as part of this record.

9           The Board needs sufficient information  
10 regarding -- has sufficient information regarding  
11 necessary flows and fishery needs. It now needs to  
12 begin to balance the competing beneficial uses.

13           It has failed to identify or establish a  
14 framework for evaluating the public trust or public  
15 interest balancing.

16           WaterFix petitioners have submitted little or  
17 no information on how to balance competing needs.

18           Balancing a public trust is not simply an ad  
19 hoc or impromptu decision by the Board on what  
20 constitutes the public trust and public interest and  
21 what is a reasonable balancing of competing uses. It  
22 requires an analytical framework including the  
23 scientific method or basis the Board will employ to  
24 secure the necessary information to arrive at an  
25 informed decision. Balancing cannot be a black box,

1 and extinction cannot be balancing.

2           The Board has never set forth a methodology  
3 for balancing the trust in public interest. It has  
4 never described a structured framework containing the  
5 components and information that must be compiled,  
6 analyzed, evaluated, and compared that is critical to  
7 any credible balancing. Such methodologies and tools  
8 exist and have been routinely used in California and  
9 across the nation for water projects.

10           CSPA submitted a report by ECONorthwest that  
11 described the Board's balancing at Mono Lake -- the  
12 ecological use of public trust resources, the array of  
13 methods, manuals, and guidebooks routinely used by  
14 state and federal agencies on evaluating water  
15 projects, the principles of cost benefit analysis, and  
16 other issues pertaining to the Bay-Delta.

17           A credible and defensible benefit/cost  
18 analysis would consider all of the environmental  
19 consequences, social effects, and costs and benefits of  
20 water management alternatives, including both market  
21 and non-market effects, uncertainty and risk, and  
22 follow rigorous professional standards and methods of  
23 analysis. It would consider the benefits and costs to  
24 both agricultural and urban uses as well as commercial  
25 fishing and recreational uses. It would analyze

1 benefits and costs of ecosystem services and contingent  
2 valuation or the value Californians place on a healthy  
3 ecosystem. And it would analyze benefits and costs of  
4 alternatives to current water use by conservation,  
5 reuse, and reclamation.

6           Balancing must consider the Constitutional  
7 mandate to put water to the fullest beneficial use and  
8 prevent the waste and unreasonable use of water. For  
9 example, almost 82 percent of agricultural jobs in  
10 California and 63 percent of the revenue requires only  
11 21.5 percent of the water used by agriculture.  
12 Additionally, redirected impacts and externalized costs  
13 to others from applied water use, such as ag return  
14 flows to greenhouse gas, must be factored into any  
15 balancing of beneficial uses.

16           And the Board must also describe how state  
17 policy, including the Delta Reform Act, is considered  
18 in arriving at a balancing decision, especially  
19 considering that the Delta is an ecosystem of  
20 hemispheric importance and its protection is of  
21 paramount concern and that the principles of reasonable  
22 use and the Public Trust Doctrine shall be the  
23 foundation of State Water management policy.

24           There's very little information that's been  
25 submitted in this proceeding that would assist the

1 Board in its balancing effort. And the Board has made  
2 little or no effort to identify and obtain that  
3 information. Without it, any balancing decision will  
4 be a charade.

5 And, then, WaterFix will cause unreasonable  
6 impacts to water quality.

7 The Delta is an impaired water body. And the  
8 diversion of millions of acre-feet of the highest  
9 quality water entering the estuary will inevitably  
10 increase the concentration of pollutants that flow from  
11 the San Joaquin River or that are discharged within the  
12 Delta. It will also increase the residence time for  
13 those pollutants to interact with aquatic life.

14 Dr. G. Fred Lee and Dr. Susan Paulsen have  
15 eloquently testified on the increased pollutant  
16 concentration, residence time, and many of the water  
17 quality impacts that will occur if WaterFix is  
18 approved. Given the condition of fisheries and the  
19 extent of fishing in the Delta, WaterFix represents an  
20 unreasonable impact to water quality, aquatic life, and  
21 the public trust and cannot be in the public interest.

22 And with that, I'll shut up and apologize for  
23 taking too much of your time.

24 CO-HEARING OFFICER DODUC: All right. Thank  
25 you.

1           MR. JACKSON: Dr. Lee, is CSPA-207 a true and  
2 correct copy of your curriculum vitae?

3           WITNESS LEE: Yes, it is.

4           MR. JACKSON: CSPA-206 a complete and correct  
5 copy of your testimony?

6           WITNESS LEE: Yes, it is.

7           MR. JACKSON: And is CSPA-230 the PowerPoint  
8 with which you're going to summarize your testimony?

9           WITNESS LEE: Yes. I'm going to use only some  
10 of those to stay within the time frame we have for the  
11 presentation.

12          MR. JACKSON: All right. Is your -- then  
13 would you please summarize your testimony, sir.

14          WITNESS LEE: Thank you. We can have slides?

15                 My testimony is a follow-up to the Phase 1  
16 testimony that I prepared a year and a half ago  
17 focusing on how the WaterFix tunnel diversion project  
18 will impact water quality in the Central Delta. This  
19 testimony has evolved out of my work on the Delta over  
20 the past 25 years.

21                 And may we go to the next slide?

22                 The testimony focuses on WaterFix impacts on  
23 water quality considering fisheries, recreation, and  
24 aesthetics. Unfortunately, as we will discuss, I  
25 cannot provide quantitative assessments of what has

1 been done because the USBR and DWR failed to  
2 investigate water quality issues as impacted by  
3 WaterFix in the Central Delta. So I'll be talking  
4 about what can occur in the Central Delta due to this  
5 diversion of Sacramento River water around the Delta.

6 Next slide.

7 CO-HEARING OFFICER DODUC: Dr. Lee, if I might  
8 ask you to move the microphone closer and perhaps raise  
9 it; that way, you won't have to strain.

10 WITNESS LEE: Thank you.

11 The next slide I want to use is No. 10, in the  
12 lower right there, the map of the Delta.

13 I finished my testimony in Phase 1 discussing  
14 how the WaterFix diversions will impact flow of the  
15 Sacramento River and the San Joaquin River into and  
16 through the Delta. The key issue here is the mixing of  
17 the two rivers at Turner Cut, which is about halfway  
18 down the slide.

19 San Joaquin River is a highly polluted system  
20 with numerous water quality violations, while the  
21 Sacramento River is very high quality and is used to  
22 dilute the San Joaquin River water as it enters the  
23 Delta. When you mix the two, you have then a somewhat  
24 polluted water which enters the Central Delta and can  
25 have adverse impacts to fisheries and other aquatic

1 life and other beneficial uses.

2 I also will discuss, at the end of my  
3 presentation, a brief review of the South Delta impacts  
4 of WaterFix, looking in particular at the diversion of  
5 San Joaquin River water down the Old River channel to  
6 the export pumps at Banks and Jones. I'll come back to  
7 that in a minute.

8 I want to summarize the impact of the WaterFix  
9 on South Delta water quality through Slide 11.

10 The San Joaquin River is a deep-water ship  
11 channel, which is the flow path for the San Joaquin  
12 River, has high pollutant concentrations and loads.  
13 It's drawn into the Central Delta primarily through  
14 Turner Cut. Turner Cut is a waterway connecting the  
15 San Joaquin River through the Central Delta. The  
16 Sacramento River water is drawn into the Central Delta  
17 through the export pumps at the south end of the Delta.

18 This drawing of Sacramento and San Joaquin  
19 River water into the Delta results in a mixture which  
20 has a wide variety of pollutants derived primarily from  
21 the San Joaquin River watershed.

22 The proposed WaterFix North Delta diversion of  
23 Sacramento River water will reduce the volume and flow  
24 of high quality Sacramento River water entering the  
25 Central Delta and would increase the adverse impacts of

1 pollutants in Turner Cut on water quality and  
2 beneficial uses of the Central Delta waters.

3           Now, the Central Delta is a large area of the  
4 Delta, and it's an important part of the area. But  
5 it's been essentially completely ignored by DWR and  
6 USBR in evaluating the impacts of the WaterFix  
7 diversions.

8           These -- go to Slide 12.

9           These views are not just my views, but the  
10 Science Advisory Board of the Delta Stewardship Council  
11 issued comments on the proposed WaterFix diversions.

12           I summarize these in Slide 12. And they focus  
13 primarily on phosphorus impacts due to the diversions  
14 that are proposed, where you take the high phosphorus  
15 content of the Turner Cut and mix it with low  
16 phosphorus Sacramento River water, which is then bled  
17 into the Central Delta and eventually pumped through  
18 the South Delta export pumps.

19           The proposed WaterFix diversions of Sacramento  
20 River water will reduce the amount of Sacramento River  
21 water that enters the Central Delta because you'll have  
22 to pull up to 9,000 cfs of Sacramento River water  
23 upstream of the Delta, and so it goes into Turner Cut;  
24 there's much less Sacramento River water entering  
25 Turner Cut without WaterFix.



1           This will effectively increase the phosphorus  
2 input to the Central Delta and increase the  
3 phytoplankton populations in the Central Delta. And we  
4 know from -- in my testimony and the report that the  
5 phosphorus content of the Turner Cut-Sacramento River  
6 mixture is an important issue in influencing water  
7 quality in the Central Delta.

8           Slide 13 presents a summary of my 50 years of  
9 work on the impacts of water quality as influenced by  
10 nutrients in water bodies located throughout the world.  
11 I've been involved in these issues now for over 60  
12 years. And I can summarize here by saying that the  
13 increased algae and aquatic plants will lead to odors  
14 in the water for domestic water supply, will cause low  
15 DO, increase cytotoxicity, create floating scum from  
16 the algae, and also, under certain conditions, block  
17 the ag water intake screens.

18           The adverse impacts or injuries to public uses  
19 upon the Central Delta will include fisheries, boating,  
20 swimming, and aesthetic quality. All of these will be  
21 impacted by the increased nutrients and, for that  
22 matter, other pollutants.

23           I next want to turn to South Delta. In part  
24 of the work I did for the CalFed project, where I was a  
25 PI investigator for a \$2 million study, we'd had

1 Deltakeeper buy provide a boat and crew which enabled  
2 me to take a group of Regional Board, State Board, and  
3 U.S. EPA staff on a cruise through the South Delta  
4 channels. During this cruise, we happened to be there  
5 at a time when there was a massive fish kill the night  
6 before. There was literally tens of thousands of fish  
7 dead on top of the South Delta channel.

8           And we looked into this. DWR has a DO  
9 monitoring station on the South Delta channel near the  
10 Tracy Boulevard Bridge. And this DO, the night before,  
11 was on the order of zero, very close to zero. And at  
12 other times, it's low in that channel. Now, the DO in  
13 that channel is influenced by the flow of water through  
14 the -- through the South Delta channel that's  
15 controlled by the export pumps. The export pumps draw  
16 water through this channel as one source of water for  
17 export.

18           The proposed WaterFix North Delta diversions  
19 of the Sacramento River will at times result in  
20 decreased amounts of water exported by the South Delta  
21 export pumps.

22           And this is shown in Slide 16. This is a DWR  
23 slide that we presented at a previous session in which  
24 on the far right of this slide is the Non -- the NAA  
25 condition, the existing conditions for export of water

1 from the South Delta. The other conditions are the  
2 Boundary 1, Boundary 2 at the extremes and the H3 and  
3 H4 in the middle.

4 Now, the important information from this is  
5 that on the order of 50 percent of the water that will  
6 be exported from the Delta will be derived from the  
7 South Delta exports. In other words, 50 percent can,  
8 according to DWR calculations, count for the diversion  
9 around the tunnels. Another 50 percent is going to be  
10 called from the Central Delta. So we have the Central  
11 Delta problems continuing under WaterFix.

12 Slide 17 discusses impacts of reduced pumping  
13 of South Delta water. It's going to impact the reduced  
14 flow of water through the South Delta channel at the  
15 barrier, increase the residence time of water in the  
16 channel, and then at times result in greater DO  
17 depletions in that channel than typically occurs.

18 This is another potentially significant  
19 adverse impact of proposed North Delta diversions of  
20 the Sacramento River water that should have been  
21 evaluated by DWR and USBR. Next slide.

22 These views on the impact of flow are not just  
23 mine. The USGS scientists who have been active for  
24 many years on Delta water quality issues, as shown on  
25 Slide 18, have discussed the unreliability of the

1 WaterFix assessments, DWR and USBR assessments, of the  
2 impacts of manipulating flows in those channels on  
3 water quality in the Delta. And they have discussed  
4 the fact that these manipulations can lead to adverse  
5 impacts from a variety of pollutants that are in the  
6 San Joaquin River, then drawn into the Central Delta  
7 through the export pumps.

8           So in summary, the amount of phosphorus -- and  
9 this is Slide 21.

10           The amount of phosphorus entering Turner Cut  
11 will influence the amount of SJR or DWSC water entering  
12 that area. The operations of WaterFix will impact the  
13 amount of phosphorus entering the Central Delta, which  
14 in turn will adversely impact the phytoplankton  
15 population and other aquatic plants in the Central  
16 Delta. Less water entering Turner Cut will increase  
17 the residence time of pollutants and adverse impacts of  
18 pollutants, depending on residence time -- how long the  
19 fish and other aquatic life are exposed to the elevated  
20 concentrations.

21           The operations of the proposed WaterFix  
22 diversion will increase pollutant concentrations in the  
23 Central Delta, increase water quality impacts, and harm  
24 the users of Central Delta water, increase the water  
25 quality impacts/harm to South Delta, Old River channel

1 users due to increased water/pollutant residence time.  
2 All of these impacts and harms to Delta water users  
3 should have been evaluated by DWR and USBR in this  
4 petition to change the point of diversion of the  
5 Sacramento River.

6 And that will be it, thank you.

7 CO-HEARING OFFICER DODUC: Thank you, Dr. Lee.

8 Before you continue, Mr. Jackson --

9 Ms. Gaylon, I've just realized that we short-changed  
10 this panel 10 minutes. I think you started the clock  
11 at 1 hour and 30 minutes instead of 1 hour and 40. So  
12 let's go ahead and add an extra ten minutes there.

13 MR. JACKSON: Thank you.

14 WITNESS JENNINGS: I was going to point it  
15 out.

16 MR. JACKSON: Mr. Stokely, is CSPA-202 a true  
17 and correct copy of your testimony?

18 WITNESS STOKELY: No, it's CSPA-220.

19 MR. JACKSON: 220, excuse me. I had that.

20 And you are also testifying for PCFFA in this  
21 hearing?

22 WITNESS STOKELY: Yes, yes.

23 MR. JACKSON: Is your curriculum vitae  
24 PCFFA-88?

25 WITNESS STOKELY: Correct.

1           MR. JACKSON: Are there any changes you would  
2 like to make in your testimony -- or clarifications?

3           WITNESS STOKELY: One correction on my  
4 qualifications is that, in the last paragraph on the  
5 first page, it said I am a member of the California  
6 Advisory Committee on Salmon and Steelhead Trout. I  
7 resigned on March 12th. So I was a member; that's one  
8 correction.

9           The other one is for Exhibit 351, I listed  
10 pages by PDF rather than the pages shown on the  
11 document. And I don't know how the Board would like to  
12 deal with that, but I have do the correct page numbers,  
13 if you'd like those.

14          CO-HEARING OFFICER DODUC: Why don't you go  
15 ahead and read the correct page number into the record  
16 as well. We'll note that the numbers currently there  
17 are for PDF.

18          WITNESS STOKELY: Yes.

19          CO-HEARING OFFICER DODUC: And you will also  
20 add the correct number.

21          WITNESS STOKELY: Okay. Page 4 should be  
22 Page 909; Page 7 should be Page 915; Page 15 should  
23 be 930; Page 23 should be 949; and Page 27 should be  
24 956.

25          CO-HEARING OFFICER DODUC: Thank you. That

1 will be helpful.

2 WITNESS STOKELY: Great.

3 MR. JACKSON: Mr. Stokely, that being done  
4 would you please summarize your testimony.

5 WITNESS STOKELY: Sure. My testimony -- I'm  
6 Thomas Stokely. I also go by Tom Stokely.

7 My testimony will primarily focus on  
8 Key Issue 3(c), which asks, "If so for a and/or b  
9 above, what specific conditions, if any, should the  
10 State Water Board include in any approval of the  
11 Petition to avoid unreasonable effects to fish,  
12 wildlife, and recreational uses?"

13 This testimony describes how the damming of  
14 the Trinity River and the diversion of a significant  
15 portion of the Trinity River's flow at Lewiston to the  
16 Sacramento River and the Central Valley Project has not  
17 been good for salmon and other species in the  
18 Sacramento and San Joaquin rivers and the Bay-Delta  
19 Estuary.

20 These impacts can be partially mitigated by  
21 limiting the exports of Trinity water to the Sacramento  
22 River which would benefit species in the Trinity/Lower  
23 Klamath rivers as well as the Central Valley/Bay-Delta.

24 The Trinity River Act of 1955, which is  
25 Exhibit CSPA-350, authorized construction and operation

1 of the Trinity River Division. In the House and Senate  
2 committee reports for that federal act, CSPA-351, it  
3 mentions in five different cases -- those pages I gave  
4 you -- that a significant portion of that water was  
5 intended for the San Luis Unit of the Central Valley  
6 Project.

7           Irrigation of the San Luis Unit of the CVP has  
8 increased mobilization, storage, and discharge of salt  
9 and selenium into the San Joaquin River, its  
10 tributaries, and the Bay Delta according to the Central  
11 Valley Regional Board report, which is CSPA-352, as  
12 well as U.S. Geological Survey's open file report,  
13 00416, which is CSPA-353.

14           If you could, please, Ms. Gaylon, bring up  
15 CSPA-354.

16           This is a map of the -- maybe scroll up a  
17 little bit. This is a map that actually was prepared  
18 20 years ago for D1641, but it's still relevant. This  
19 shows the expanded CVP place of use within the San Luis  
20 Unit as compared to the concentration of selenium in  
21 the soils.

22           The darker sort of orangish-red cross-hatched  
23 area, those are highest concentration of selenium in  
24 the soils. And then the other shaded areas go out with  
25 less concentration.



1           The CVP place of use prior to the Trinity  
2 River division was that blue dashed line. And then the  
3 CVP place of use after the Trinity River division is  
4 the green line. And you can see that putting the  
5 Trinity River online expanded the CVP place of use to  
6 include the most seleniferous soils within the San Luis  
7 Unit of the CVP.

8           This map was based on two documents. One is  
9 USGS Water Resources Investigation 884001, which is  
10 CSPA-355, as well as Reclamation Map 416208-341 which  
11 is CSPA-356. And, again, this map clearly shows  
12 damming the Trinity River expanded the place of use to  
13 add the most seleniferous soils.

14           As far as harm to the fish in the Delta,  
15 obviously adding more water from the Trinity River and  
16 sending it south of the Delta allowed greater Delta  
17 pumping, which increases the entrainment and mortality  
18 of salmon in the Delta. We have CSPA-356, which is a  
19 report by Kimmerer from 2008 which talks about that.

20           So, again, diversions of Trinity water to the  
21 Central Valley and then exporting out at the Delta also  
22 harm Delta fish.

23           My final point -- and I'm going to be brief  
24 today -- is that Trinity River diversions to the  
25 Sacramento River from the Spring Creek Power Plant into

1 Keswick Reservoir downstream of Shasta are usually much  
2 warmer than discharges from Shasta Dam during the hot  
3 summer months.

4           If you could bring up CSPA-358, please.

5           What I did in Exhibit 358, I did not take the  
6 data, I just downloaded it directly off of CDEC. So  
7 you can see the Spring Creek Power Plant there. We'll  
8 just take August 28th -- and this was in 2017. I  
9 actually took 2015, 2016, and 2017. And in each case,  
10 the water coming from the Trinity River into Keswick  
11 from Spring Creek Power Plant was a few degrees warmer  
12 than Shasta Dam releases very, very consistently.

13           At some point, and I don't know when, I think  
14 the first year, 2015, the temperature curtains were not  
15 in at Whiskeytown, so the temperatures were a bit  
16 higher then. So you can see, even in 2017, which was a  
17 wet year, there was a significant difference in  
18 temperature.

19           So again shipping water from the Trinity River  
20 to the Sacramento River actually heats up the  
21 Sacramento River during the critical period for  
22 winter-run salmon. So, again, damming the Trinity  
23 River and diverting its water to the Sacramento River  
24 has not been good for fish in the Sacramento River.

25           However, some of the diversions to the Trinity

1 River -- and I'll discuss this in my other testimony  
2 for PCFFA in a few weeks -- that can be helpful to the  
3 Trinity River by keeping water flowing through Lewiston  
4 Reservoir and keeping the Trinity River cold. So a  
5 certain amount of water is needed to be sent over to  
6 the Sacramento River in the summer to keep the Trinity  
7 cold and to meet North Coast Basin Plan temperature  
8 objectives.

9           But it's pretty clear that minimizing these  
10 diversions during the hotter summer months should  
11 really be limited to extent necessary to keep Trinity  
12 River release temperatures within acceptable levels  
13 without significantly warming the Sacramento River.

14           So in summary, limiting Trinity diversions to  
15 the Sacramento in the summer would be beneficial.  
16 Limiting Trinity diversions to the Central Valley to  
17 allow increased Delta exports -- let me rephrase that.

18           Limiting Trinity River diversions to minimize  
19 Delta exports would -- at certain times of the year  
20 would help reduce fish mortality in the pumps.

21           And, finally, minimizing irrigation of saline  
22 seleniferous soils in the San Luis Unit and in other  
23 areas of the San Joaquin and Tulare basins to reduce  
24 groundwater and surface water contamination with salt  
25 and selenium would also be helpful, thank you.

1           MR. JACKSON: Mr. Shutes, is CSPA-3 a true and  
2 correct copy of your curriculum vitae?

3           WITNESS SHUTES: It is.

4           MR. JACKSON: Is CSPA-202 a true and correct  
5 copy of your testimony for this hearing?

6           WITNESS SHUTES: No, it's not.

7           CSPA-202 Errata is the correct --

8           MR. JACKSON: Oh, excuse me.

9           WITNESS SHUTES: -- true and correct version  
10 of my testimony.

11          MR. JACKSON: Would you summarize your  
12 testimony, sir.

13          WITNESS SHUTES: I would, but before I start,  
14 I will like to point out two errors even in the  
15 202 Errata.

16                 On Page 20, Lines 24 and 26, I identify dates  
17 of the hearing transcript. In both cases the date  
18 should read, "May 9, 2017," not "May 9, 2016."

19                 Good morning. I'm Chris Shutes, consultant to  
20 the California Sport Fishing Protection Alliance. My  
21 statement of qualifications is Exhibit CSPA-3.

22                 My testimony in Part 2 of this hearing offers  
23 the following overriding opinion. If the Board grants  
24 the WaterFix petitions, the Board can and should set  
25 permit conditions for the State Water Project and the

1 Central Valley Project that, in their own right,  
2 protect affected fish and wildlife resources beginning  
3 from the day the petitions take effect.

4           The major theme of my testimony is  
5 enforceability. The only way the Board could create  
6 certainty that conditions on WaterFix would protect  
7 fish and wildlife is by protecting fish and wildlife in  
8 permit terms that are under the Board's ongoing  
9 authority. Permit conditions must be substantive and  
10 clear and effective from Day 1.

11           Permit conditions must place clear boundaries  
12 on adaptive management. Permit conditions must define  
13 a level of decision in adaptive management that  
14 requires a public regulatory process before the Board.

15           The Board must not delegate protection of fish  
16 and wildlife to different agencies or to different  
17 authorities. The Board must not defer protection of  
18 fish and wildlife to future processes.

19           Another major theme of my testimony is  
20 defining the operations plan for WaterFix. Petitioners  
21 propose to defer basic operational decisions, such as  
22 when various levels of bypass flows past the North  
23 Delta diversions would apply. Terminate terms must  
24 specify operations that protect fish and wildlife  
25 effective the day the permits are granted, if they are.

1           As some background, it was extremely difficult  
2 to prepare testimony for Part 2 because the proposed  
3 project was not clear. The only certain parts of the  
4 project that the Department of Water Resources and the  
5 Bureau of Reclamation propose in their September 8,  
6 2017 letter to the Hearing Officers were the  
7 constraints of D1641 and the following sentence:

8           "Therefore, as part of this project,  
9 petitioners are requesting that the Hearing Officers  
10 incorporate the adaptive management process into the  
11 water rights permits, and petitioners are not proposing  
12 as conditions the operational criteria contained within  
13 the Biological Opinions and 2081(b) incidental take  
14 permit."

15           I read this letter as a whole to mean that the  
16 operational criteria contained within the Biological  
17 Opinions in the ITP were not part of the project but  
18 rather were only modeling assumptions. Evidently, I  
19 was supposed to understand that the petitioners have  
20 defined their project as a pastiche of different rules  
21 or simply objectives listed in diverse documents under  
22 diverse, different authorities, most of which are  
23 subject to modification under adaptive management.

24           As stated above, if the Board approves the  
25 WaterFix petitions in some form, the Board must provide

1 clarity and certainty in protecting fish and wildlife  
2 by creating operating rules within permit terms that  
3 are clear and enforceable on a stand-alone basis.

4           In my testimony, I use the term "adaptive  
5 management." In this term, as I use it, I include what  
6 the petitioners have described as real-time operations.  
7 For instance, on Pages 21 to 23 of my testimony, I  
8 describe the actions of the real-time drought  
9 operations management team as part of a case study in  
10 the failure of adaptive management.

11           What unites adaptive management and real-time  
12 operations as defined by the petitioners is lack of  
13 accountability and overly broad deference to process  
14 and lack of enforceability.

15           My testimony describes how reliance on  
16 biological opinions and requirements under the  
17 California Endangered Species Act will not protect fish  
18 and wildlife from unreasonable effects. In part, this  
19 is due to the fact that such documents are subject to  
20 change both in substance specifically and in underlying  
21 law.

22           In addition, such documents do not protect  
23 unlisted species such as fall-run Chinook salmon. I  
24 provide an example of how the redds of fall-run Chinook  
25 salmon in the Sacramento River were dewatered in

1 November 2017 following an extremely wet year. I also  
2 point out that adaptive management, including what the  
3 petitioners call real-time operations, focuses on  
4 listed species. This leaves non-listed species, like  
5 fall-run Chinook salmon, to face known hazards such as  
6 passing the North Delta diversion intakes without the  
7 protections afforded listed species.

8 Further, the adaptive management program  
9 proposed by petitioners does not include a role for  
10 public regulatory process before the State Water Board.  
11 It is not in the public interest for adaptive managers  
12 of fisheries agencies and water supply agencies to act  
13 as the firewall between water supply aspirations and  
14 protections for fish and wildlife.

15 It is particularly not in the public interest  
16 for these adaptive managers to operate pursuant to  
17 open-ended Endangered Species Act and California  
18 Endangered Species Act documents without public  
19 regulatory process and without accountability to the  
20 State Board.

21 Much of my testimony answers Key Issues 3(c)  
22 and 3(d). Key Issue 3(c) reads, "If so, for a and/or b  
23 above, what specific conditions, if any, should the  
24 State Water Board include in any approval of the  
25 petition to avoid unreasonable effects to fish,



1 wildlife or recreational uses?"

2           Key Issue 3(d) reads, "What Delta flow  
3 criteria are appropriate and should be included in any  
4 approval of the petition, taking into consideration the  
5 2010 Delta Flow Criteria report, competing beneficial  
6 uses of water, and the relative responsibility of the  
7 projects and other water rights holders for meeting  
8 water quality objectives?"

9           The necessary scope of the conditions that the  
10 Board would need to place on State Water Project and  
11 Central Valley Project permits to avoid unreasonable  
12 effects to fish and wildlife is broad. The scope of  
13 conditions must be broad because the particular breadth  
14 and effect of the SWP and CVP -- because of the  
15 particular breadth and effect of the SWP and CVP.

16           The scope of conditions must be broad because  
17 of the operation of all parts of these projects in an  
18 integrated and coordinated fashion. The scope of  
19 conditions must be broad because of the specific  
20 mandates of Water Code Section 85086, the Delta Reform  
21 Act of 2009.

22           In considering conditions to place on the  
23 permits for SWP and CVP in this proceeding, the Board  
24 can and must evaluate conditions for all aspects of SWP  
25 and CVP operations, not just those immediately related

1 to the new points of diversion.

2 In response to the relative responsibility of  
3 other water rights holders that is raised at the end of  
4 Key Issue 3(d), the Board must not be broad. The Board  
5 is limited in this hearing to conditions it can place  
6 on DWR and the Bureau in the operation of the SWP and  
7 the CVP.

8 The Board cannot ask others to mitigate the  
9 effects of the operation of the SWP and the CVP. The  
10 Board cannot assume future actions by others that might  
11 have the effect of achieving such mitigation.

12 My testimony addresses two principal topics  
13 related to appropriate Delta flow criteria: the  
14 submittals of the fisheries agencies in the 2010 Delta  
15 Flow Criteria proceeding and reservoir operations.

16 The submittals of the fisheries agencies in  
17 the State Board's 2010 Delta Flow Criteria proceeding  
18 required by Water Code Section 85086(c)(1) are  
19 particularly relevant because the fisheries agencies  
20 have chosen not to be parties to this proceeding.  
21 Thus, their submittals in the 2010 Delta flow  
22 proceeding are the closest thing available to the  
23 opinions of fisheries agencies regarding the flows  
24 necessary to protect public trust fisheries resources,  
25 not just listed species, for the purposes of this

1 proceeding.

2           The fisheries agencies' recommendations in the  
3 2010 Delta flow proceeding were explicit and extensive.  
4 The Department of Fish and Game's recommendations are  
5 contained in its November 2010 report entitled  
6 "Quantifiable Biological Objectives and Flow Criteria  
7 for Aquatic and Terrestrial Species of Concern on the  
8 Delta."

9           This report was required by the legislature  
10 and is part of the record of this hearing as Exhibit  
11 State Water Resources Control Board 66.

12           I have reproduced from Pages 105 of this DFG  
13 report a table that summarizes DFG's recommendations,  
14 identifying it as CSPA-307. This table is particularly  
15 notable for the categories that it encompasses.

16           The U.S. Fish and Wildlife Service's summary  
17 recommendations in the 2010 Delta Flow Criteria  
18 proceeding filed jointly with the Bureau of Reclamation  
19 are particularly broad.

20           Fish and Wildlife Service emphasizes the  
21 following: The importance of outflow to maintain the  
22 low salinity zone in Suisun Bay; keeping fish out of  
23 what Fish and Wildlife Service calls the footprint of  
24 the exports; reducing exports from the South Delta  
25 export facilities when fish from the San Joaquin River

1 are migrating to the ocean; the negative effects to  
2 fish of reverse flows and the importance of maintaining  
3 a positive QWEST or flow at Jersey Point; and the  
4 importance of high flows at Rio Vista when juvenile  
5 salmon are migrating from Sacramento River to the  
6 ocean.

7           Exhibit 32 contains excerpts on these topics  
8 that I took from the Department of Interior's final  
9 summary submittal in the 2010 Delta Flow Criteria  
10 proceeding. The complete submittal by DOI in this  
11 proceeding is identified as CSPA-300.

12           The National Marine Fishery Service is -- was  
13 less extensive in its 2010 analysis but picks up  
14 additional concerns, such as the importance of avoiding  
15 reverse flows at the mouth of Georgiana Slough during  
16 the salmon migrating period. NMFS includes end of  
17 April and end of September storage at Shasta Reservoir  
18 as part of its Delta flow recommendations. NMFS also  
19 recommends flows at Chipps Island and Wilkins Slough to  
20 protect juvenile sturgeon.

21           Exhibit CSPA-306 contains excerpts from NMFS's  
22 final summary submittal in the 2010 Delta Flow Criteria  
23 proceeding, including two exhibits that NMFS submitted  
24 along with its summary. The originals from which I  
25 took the excerpts are identified as CSPA-303, CSPA-304,

1 and CSPA-305.

2           As I described in my testimony, the  
3 recommendations of all the fisheries agencies in the  
4 State Board's 2010 Delta Flow Criteria proceeding are  
5 relevant to protecting fish from the effects of South  
6 Delta export operations and, in many cases, from the  
7 potential effects of North Delta export operations  
8 under California WaterFix.

9           As I also state in my testimony, the Board  
10 should consider specific recommendations of CSPA  
11 witnesses Tom Cannon and Bill Jennings in developing  
12 appropriate Delta flow criteria and should follow the  
13 testimony of Dr. Whitelaw in determining how to balance  
14 competing uses.

15           Finally, I'd like to talk a little bit about  
16 carryover storage requirements for the State Water  
17 Project and Central Valley Project reservoirs.

18           A critical element of appropriate Delta flow  
19 criteria is conditioning SWP and CVP permits to require  
20 reservoir operations with firm carryover storage  
21 requirements. As my testimony describes, appropriate  
22 Delta flow criteria cannot be separated from reservoir  
23 operations.

24           If the Board were to approve the WaterFix  
25 petitions with flow criteria that did not also

1 appropriately constrain reservoir operations, then DWR  
2 and Bureau operators could make up all or part of any  
3 required Delta flow increases with storage withdrawals  
4 from the reservoirs. This would redirect fisheries  
5 impacts upstream to the river reaches more or less  
6 immediately downstream of any or all of the main SWP  
7 and CVP storage reservoirs.

8           It is important that the Board develop and  
9 enforce carryover storage requirements for each of the  
10 major North of Delta SWP and CVP reservoirs. Without  
11 requirements at each reservoir, requirements at one or  
12 more of the reservoirs will redirect impacts to those  
13 that do not have requirements.

14           I make specific recommendations for carryover  
15 storage at Oroville Reservoir based on an analysis of  
16 recent historical, not modeled, operations. Data and  
17 calculations I used to develop these recommendations  
18 are shown in Exhibits CSPA-313, CSPA-314, and CSPA-315.

19           My recommendations include a floor  
20 end-of-September Oroville carryover storage value of  
21 1.6 million acre-feet plus additional storage based on  
22 Table A deliveries to State Water Project contractors.  
23 I recommend that the Board evaluate different formulas  
24 for that additional storage. I also recommend that the  
25 Board consider different requirements to help maintain

1 end-of-December storage in Oroville close to  
2 end-of-September storage or greater.

3           Finally, I recommend starting points for the  
4 Board to evaluate carryover storage requirements in  
5 Shasta, Folsom, and Trinity reservoirs.

6           In conclusion, it is my testimony that, if the  
7 Board grants the WaterFix petitions in some form, the  
8 Board can and should set permit conditions for the  
9 State Water Project and Central Valley Project that in  
10 their own right protect affected fish and wildlife  
11 resources beginning from the day the petitions take  
12 effect.

13           The Board must provide clarity and certainty  
14 in protecting fish and wildlife by creating operating  
15 rules within permit terms that are clear and  
16 enforceable on a stand-alone basis.

17           And that concludes my summary, thank you.

18           MR. JACKSON: Mr. Cannon, is CSPA-7 a true and  
19 correct copy of your curriculum vitae?

20           WITNESS CANNON: Yes.

21           MR. JACKSON: Is CSPA-204 a true and correct  
22 copy of your testimony for this hearing?

23           WITNESS CANNON: Yes.

24           MR. JACKSON: Would you please summarize your  
25 testimony, sir.

1 CO-HEARING OFFICER DODUC: Before you do,  
2 somebody needs to put their cell phone on silent,  
3 vibrate, do not disturb. Please take a moment and  
4 check.

5 MR. JACKSON: Who is guilty?

6 CO-HEARING OFFICER DODUC: Whoever it is  
7 guilty I think is fixing it right now.

8 MR. JACKSON: Okay.

9 WITNESS CANNON: Good morning. My name is  
10 Tom Cannon. I'm an advisor to the California Sport  
11 Fishing Protection Alliance.

12 I am fisheries ecologist and biostatistician.  
13 I've worked on the Delta -- Bay Delta's ecosystem since  
14 1977. Prior to that, I worked on power plant  
15 entrainment and impingement studies on the Hudson River  
16 Estuary in New York for five years. I was a consultant  
17 on PG&E's Delta Power Plant studies, the CVP IA and the  
18 CalFed programs. I've also been a consultant to the  
19 State Board, State Water Contractors, MWD, the National  
20 Marine Fishery Service, U.S. Fish and Wildlife Service,  
21 Corps of Engineers, Bay Institute, Cal Trout, and the  
22 Water Forum, tribes, landowners, and water districts.

23 I was the executive director of the fisheries  
24 foundation of. First salmon habitat conservation bank  
25 at Fremont landing at the mouth of Feather river.



1           I developed the first Delta smelt conservation  
2 bank at Liberty Island. I worked closely with the  
3 agencies for many years, and I'm now retired and am now  
4 an advisor to CSPA.

5           The following is the summary of opinions on  
6 the effects of WaterFix from my testimony.

7           Number one, the proposed North Delta intake  
8 screen systems and proposed operational constraints  
9 will not protect passing fish from entrainment,  
10 impingement, or predation. The intakes and screens are  
11 just too big and take too much of the flow to be  
12 effectively protective. Intake screens like this just  
13 do not work in tidal channels and ecosystems. Salmon,  
14 splittail sturgeon fry, shad and striped bass eggs and  
15 larvae, smelt will not escape this screen system.  
16 Salmon and steelhead smolts, juvenile sturgeon, striped  
17 bass, shad, and smelt will be more vulnerable to  
18 predatory fish at the screens.

19           The proposed North Delta diversions would  
20 allow more of the total freshwater inflow to be  
21 exported, leading to less total outflow to the bay.  
22 Present winter-spring exports are limited by South  
23 Delta OMR limits, Old and Middle River limits during  
24 higher flows. They will not be -- exports will not be  
25 limited with WaterFix.

1 Present export restrictions of 11,400 cfs will  
2 increase to 15,000 from late fall to early summer.  
3 Direct export of freshwater with less salt will  
4 increase the total freshwater inflow component of  
5 exports, leaving more salt in more upstream locations  
6 of the low salinity zone.

7 Point No. 3, proposed bypass flows are  
8 inadequate, which will lead to the low salinity zone  
9 being further upstream of the Delta and warmer in late  
10 spring and summer and reduce downstream transportation  
11 and migration of fish.

12 Temporary urgency change petitions will  
13 continue as they have in the past, I assume. Changes  
14 to the Sacramento River temperature compliance criteria  
15 will be unchanged leading to continuing impacts.

16 Request to drop the Fall X2 standards will  
17 continue as it does now.

18 Continuing South Delta diversion effects would  
19 potentially increase without the freshwater inflow that  
20 was diverted at the North Delta diversion. That's  
21 important because people really don't understand that  
22 the South Delta diversions are affected by the total  
23 inflow from the Delta -- into the Delta. OMR  
24 restrictions would be less protective without the North  
25 Delta water coming into the Central Delta.

1 Risk of fish entering the interior Delta via  
2 the Georgiana Slough and Three Mile Slough will  
3 increase. The low salinity zone would be further  
4 upstream and smaller and less productive, also making  
5 loss to exports more likely.

6 Spring North Delta and South Delta exports  
7 without the VAMP and CVP IA restrictions of the past  
8 will be extremely damaging to the fish populations.  
9 Many people don't realize we no longer have VAMP and  
10 CVP PIA restrictions as we did in the '90s and the  
11 2000s.

12 Protection of flow below the North Delta  
13 diversion will increase flood-type flow and reduce ebb  
14 flows, thus affecting transport migration rates and  
15 will also enhance tidal surfing of Delta smelt up the  
16 Sacramento channel.

17 Salmon fry smolt migrations will slow, making  
18 them more vulnerable to predation and the pull toward  
19 the Central and South Delta. Smelt will have stronger  
20 potential moving upstream in the Sacramento channel to  
21 spawn in the Sacramento River channel. Larval smelt  
22 and splittail will have reduced transport west to the  
23 low salinity zone. Food supplies of plankton will be  
24 -- mainly zooplankton, will be less productive. North  
25 Delta channels will be warmer earlier without the

1 cooler Sacramento River flows that come into the Delta  
2 at Freeport. Cache Slough complex will be warmer with  
3 less Steamboat and Sutter Slough inputs from the  
4 Sacramento River.

5 Greater effects of the South Delta diversions  
6 from drawing fish from Three Mile Slough, False River,  
7 Georgiana Slough -- which is why the SWP planning  
8 barriers -- the SWP is planning barriers in the future  
9 on all three of these locations -- Three Mile Slough,  
10 False River, Georgiana Slough -- to repel the salt and  
11 the fish from entering the Central Delta.

12 There will be no restrictions on CVP and SWP  
13 upstream operations relative to the Delta operations.  
14 Added North Delta diversion capacity would likely lead  
15 to changes in reservoir storage releases and river  
16 flows. Shasta and Folsom Reservoir cold water pools  
17 will be further at risk with the North Delta  
18 diversions. Long-term reservoir storage will suffer in  
19 multiple-year droughts as a consequence of the  
20 detriment -- and to the detriment of the water supply  
21 and fish. More transfers would occur to the detriment  
22 of the fish.

23 Rules governing State Water Project/CVP  
24 operations from OCAP Biological Opinions and the Water  
25 Quality Control Plan to protect the beneficial uses of

1 water in the Bay-Delta watershed will likely change in  
2 the future, without any change at the North Delta  
3 diversion.

4           These changes would likely reduce the water  
5 supply available to WaterFix.

6           Existing rules, such as export-to-inflows  
7 ratios and OMR will be less effective with WaterFix.  
8 What will become of the winter-spring X2 protections in  
9 D1641? I couldn't answer that from reviewing the EIS.

10           Problems related to the fish population  
11 declines over the past half century will not be fixed  
12 and will only worsen with WaterFix. Just adding the  
13 North Delta diversion to existing South Delta diversion  
14 will not solve the problems.

15           Many positive actions in the past 50 years  
16 have not been able to overcome the intrinsic negative  
17 effect of the State Water Project being added to the  
18 system. Fish populations keep falling by factors of 10  
19 or even 100, which is why I use log rhythms in most of  
20 my analyses.

21           More water will be squeezed out of the system  
22 every year. Water quality standards will be continued  
23 to be ignored. There have been a lot of good things  
24 done over the last 50 years that I've been involved in  
25 the Bay-Delta, but we just have not been able to

1 overcome the original sins of the State Water Project  
2 and Central Valley Project.

3 Adaptive management is learning from mistakes.  
4 We haven't learned from those mistakes. When you do  
5 not know what you're doing or not sure how to  
6 accomplish a goal, you have no choice but to do  
7 adaptive management.

8 My final point, WaterFix is not the end. More  
9 is planned to increase the State Water Project's  
10 appetite for Sacramento River water, and the Three Mile  
11 Slough and the False River Barrier are examples.

12 New reservoirs that will add to or compete  
13 with the demands for the uncontrolled Sacramento River  
14 water will be developed. With WaterFix diversions, the  
15 exports will reach 8 million acre-feet from the present  
16 record levels of about 6 million or 6 1/2 million  
17 acre-feet thank you.

18 MR. JACKSON: That finishes our direct.  
19 Somebody else can use the 20 minutes.

20 CO-HEARING OFFICER DODUC: Thank you,  
21 Mr. Jackson.

22 What I would like to do is suggest we take a  
23 break before we begin with cross-examination. But  
24 before our break, let me confirm.

25 I have Department of Water Resources,

1 Mr. Keeling, Mr. Emrick, Mr. Ruiz, and Ms. Des Jardins.  
2 Did I miss anyone who wished to conduct  
3 cross-examination of this panel?

4 MR. O'HANLON: Daniel O'Hanlon on behalf of  
5 Groups 4 and 5, San Luis Delta-Mendota Water Authority  
6 and Westlands Water District. I estimate about a half  
7 an hour of cross. It may be less, depending on the  
8 cross that goes before me.

9 CO-HEARING OFFICER DODUC: And group number  
10 again, please?

11 MR. O'HANLON: 4 and 5.

12 CO-HEARING OFFICER DODUC: 4 and 5?

13 MR. O'HANLON: Yes, thank you.

14 MS. DES JARDINS: Deirdre Des Jardins --

15 CO-HEARING OFFICER DODUC: I have you down.

16 MS. DES JARDINS: Matthew Emrick asked me to  
17 tell you that he won't be here to do cross.

18 CO-HEARING OFFICER DODUC: I'm sorry. Who?

19 MS. DES JARDINS: Matthew Emrick from City of  
20 Antioch.

21 CO-HEARING OFFICER DODUC: That he will not  
22 be?

23 MS. DES JARDINS: Yes.

24 CO-HEARING OFFICER DODUC: Thank you.

25 MS. WOMACK: Suzanne Womack, Clifton Court LP,

1 maybe 20 minutes. I'm not sure. It depends on what  
2 happens before. Thank you.

3 MS. MESERVE: Osha Meserve, for Group 19. I  
4 would like to reserve 20 minutes, please.

5 CO-HEARING OFFICER DODUC: 20, okay.

6 Anyone else?

7 (No response)

8 CO-HEARING OFFICER DODUC: All right. Let's  
9 go now and take our break, and we will return at  
10 10:15 -- I'm sorry -- 11:15.

11 (Recess taken)

12 CO-HEARING OFFICER DODUC: All right. It is  
13 11:15 we are back in session. Just a couple things  
14 before we resume.

15 So this is a joint cross between DWR and State  
16 Water Contractors. You requested two hours. We'll put  
17 one hour up there because I do want to take a lunch  
18 break, and I'm sure we'll see how it goes afterwards.

19 Mr. Jackson, just so you know, I did a rough  
20 estimate. And based on projections, there are about  
21 five hours of cross-examinations for this panel.  
22 Hopefully people will be more efficient in their  
23 estimate, but it means that we may not get to your  
24 second panel today. In any case, we will not complete  
25 your second panel today.



1           MR. JACKSON: I have two people for the second  
2 panel that will would not be available on Thursday but  
3 would be available on Monday.

4           CO-HEARING OFFICER DODUC: Isn't tomorrow  
5 Wednesday?

6           MR. JACKSON: Tomorrow is Wednesday, right.

7           CO-HEARING OFFICER DODUC: They would not be  
8 available on Wednesday?

9           MR. JACKSON: They would not be available --

10          WITNESS JENNINGS: For the rest of the week.  
11 They've all made plans for Easter.

12          CO-HEARING OFFICER DODUC: Okay. Who are  
13 they, and perhaps I might get an indication of  
14 whether -- what the extent of cross-examination might  
15 be for them.

16          WITNESS JENNINGS: It will be David Hurley and  
17 Jerry Neuberger, who's actually here already.

18          CO-HEARING OFFICER DODUC: Why don't I ask  
19 people over the lunch break and think about it and let  
20 us know what the extent is of cross-examination for  
21 those two witnesses. And if it's not extensive,  
22 perhaps we can squeeze them in today.

23          Okay. With that, Ms. Morris, Mr. Mizell,  
24 Ms. Ansley, cross-examination. And since we do have  
25 multiple witnesses with some breadth in the scope of

1 their direct, please do outline the topics you intend  
2 to cover.

3 MS. MORRIS: Okay. Thank you. I'll be asking  
4 questions of Mr. Shutes regarding the basis for some of  
5 the biological conclusions he draws in his testimony  
6 and his understanding of certain criteria in the  
7 project.

8 And I will also have a number of questions  
9 regarding the basis of his carryover, target  
10 requirements, and the analysis he performed for that.

11 I also will be asking questions of  
12 Mr. Stokely. It's fairly limited, regarding his  
13 experience, the basis of his opinions, and a couple of  
14 questions regarding a citation to Kimmerer in 2008.

15 I also will be asked questions of  
16 Mr. Jennings. And it's, again, fairly limited  
17 regarding his expertise and some of the statements he  
18 made regarding -- well, regarding operating criteria  
19 and his review of the documents to come to the  
20 conclusions reaches in his testimony.

21 And then, finally, a majority of my time and  
22 the time for us, this joint cross-examination, will be  
23 questions for Mr. Cannon. And those are regarding the  
24 extent of his -- the analysis he performed to draw the  
25 conclusions that he did in this, in particular

1 regarding some of the fish entrainment issues -- I'm  
2 sorry. "In this" I mean in his testimony. Apologize  
3 for being vague -- as well as the -- some of the  
4 requirements and his understanding of those regarding  
5 the Biological Opinions and approach velocity.

6 And then Mr. Cannon cites of a number of  
7 analyses that are not incorporated in his testimony,  
8 and so I'll be following up on some questions regarding  
9 the basis of data used in those exhibits cited.

10 And Ms. Ansley has the last one.

11 MS. ANSLEY: And we will also be asking a very  
12 discrete set of questions for Dr. Lee. They will focus  
13 entirely on the water quality constituents that he  
14 raises in his testimony. And they will be just limited  
15 to the analysis that he did as well as the analysis  
16 done by the DWR.

17 CO-HEARING OFFICER DODUC: All right. Thank  
18 you.

19 CROSS-EXAMINATION BY MS. MORRIS

20 MS. MORRIS: Good morning. So, again, I'm  
21 going to start, with you, Mr. Shutes. And, Mr. Shutes,  
22 have you ever testified as an expert in state court?

23 WITNESS SHUTES: No, I've not.

24 MS. MORRIS: And have you ever testified as an  
25 expert in federal court?

1 WITNESS SHUTES: No.

2 MS. MORRIS: Do you have any formal training  
3 in biology?

4 WITNESS SHUTES: I do not.

5 MS. MORRIS: And do you have any formal  
6 training in hydrology?

7 WITNESS SHUTES: No.

8 MS. MORRIS: Looking at your testimony on  
9 CSPA-202 Errata, Page 9, Lines 16 through 17 --

10 WITNESS SHUTES: Yes.

11 MS. MORRIS: You believe that DWR and the  
12 Bureau proposed to do away with Rio Vista as a full  
13 compliance point; is that correct?

14 WITNESS SHUTES: That was my understanding at  
15 the time of prepared my testimony.

16 MS. MORRIS: Okay. And Ms. Gaylon, could you  
17 please pull up the document I labeled as Shutes 1.

18 And this is looking at the State Water  
19 Resources Control Board Exhibit 107. And the second  
20 page -- I just included the cover page so you can see  
21 the context. And this is on Page 181.

22 Do you see the second parameter, "Rio Vista  
23 minimum flow standards"?

24 WITNESS SHUTES: I do.

25 MS. MORRIS: Isn't it true that the Rio Vista

1 minimum flow standard remains a requirement that will  
2 be met by USBR and DWR?

3 WITNESS SHUTES: That document indicates that  
4 it does.

5 MS. MORRIS: And that document, labeled state  
6 Water Resources Control Board 107 is the ITP for  
7 WaterFix, correct?

8 WITNESS SHUTES: I understand that.

9 MS. MORRIS: Mr. Shutes, are you aware that  
10 the ITP requires that reverse flow events not be  
11 increased in frequency, magnitude and duration?

12 WITNESS SHUTES: I don't recall that  
13 specifically. But I'll accept the representation.

14 MS. MORRIS: Well, why don't we just look.

15 Can you please, Ms. Gaylon, pull up Shutes 2,  
16 which again is an excerpt from State Water Resources  
17 Control Board 107. The second page is 187.

18 And if you could just read --

19 Could you scroll down a tiny bit? Right.

20 Thank you.

21 Could you please just read 9.9.4.1 and that  
22 first sentence.

23 WITNESS SHUTES: "Permitee shall manage North  
24 Delta diversion" --

25 MS. MORRIS: Oh, I'm sorry. You don't have to

1 read it into the record.

2 WITNESS SHUTES: Okay. I'm reading it.

3 MS. MORRIS: No need to tax the court  
4 reporter.

5 WITNESS SHUTES: Sorry.

6 MS. MORRIS: So with that in mind that we  
7 looked at, isn't it true that the ITP requires reverse  
8 flow events not be increased in frequency, magnitude,  
9 and duration?

10 WITNESS SHUTES: That, to me, is an objective  
11 in a target. I don't know how you would -- how anyone  
12 would actually achieve that.

13 MS. MORRIS: Okay. My question wasn't is it  
14 implementable. My question was isn't it a requirement  
15 in this ITP?

16 WITNESS SHUTES: Again, I'm not sure that I  
17 would categorize it as a requirement. I would  
18 categorize it more as an objective.

19 MS. MORRIS: Doesn't it say in the second  
20 paragraph that the permittee will describe the  
21 operational criteria to make sure this requirement is  
22 met? Do you see that?

23 WITNESS SHUTES: I do see that.

24 MS. MORRIS: And that they would monitor the  
25 magnitude, frequency, and duration of Sacramento River

1 flow reversals at Georgiana Slough during the test  
2 period so that they could comply? Do you see that?

3 WITNESS SHUTES: I see that.

4 MS. MORRIS: If we can pull up the document  
5 labeled Shutes 3, which is an excerpt of the State  
6 Water Resources Control Board Exhibit 106, which is the  
7 NMFS Biological Opinion.

8 And the second page -- do you see that this  
9 the cover page for the NMFS Biological Opinion?

10 WITNESS SHUTES: I do.

11 MS. MORRIS: And on the second page, which is  
12 an excerpt -- and again it's 1159. If you could just  
13 look at the table. And when you're ready, I'll ask the  
14 question. Let me know.

15 WITNESS SHUTES: I see the table.

16 MS. MORRIS: Isn't it true that there are  
17 sweeping velocity criteria for the North Delta  
18 diversions?

19 WITNESS SHUTES: There appear to be, yes.

20 MS. MORRIS: Looking at your testimony,  
21 CSPA-202 Errata, on Lines -- I'm sorry, Page 11. And I  
22 will slow down to make sure you have it in front of  
23 you.

24 Do you see Lines 8 through 18? You don't need  
25 to read it. Just having that in mind, are you

1 suggesting by the language, "stopped short of requiring  
2 even this minimal measure" that unlimited pulse  
3 protection is not included in the proposed operational  
4 criteria?

5 WITNESS SHUTES: I'm sorry. Could you repeat  
6 the question a little more slowly, please?

7 MS. MORRIS: Happily. So, again, I'm looking  
8 at Page 11 of your testimony, Lines 8 to 18. And I'm  
9 quoting and asking the meaning of the language, quote,  
10 "stopped short of requiring even this minimal measure,"  
11 unquote. Are you suggesting that limited pulse  
12 protection is not included in the proposed operational  
13 criteria?

14 WITNESS SHUTES: I believe the -- what I was  
15 referring to in Lines 10 through 11, which is where I  
16 believe you're referring to the language, was the fact  
17 that -- well -- give me a second, please.

18 MS. MORRIS: Sure. If it helps, I read that  
19 on Line 9 -- and I didn't do well in grammar. But I  
20 read it as diversions based on pulse protections and  
21 that your quote that it's stopping short is based on  
22 pulse protections. Do you read it differently?

23 WITNESS SHUTES: No. So what's the question  
24 again, please?

25 MS. MORRIS: Sure. So based on that language,



1 are you suggesting that that language stops short of  
2 requiring even the minimal measures that unlimited  
3 pulse protection is not included in the proposed  
4 operational criteria?

5 WITNESS SHUTES: I guess that's what I was  
6 suggesting. It appears that what you've pointed out  
7 would contradict that.

8 MS. MORRIS: Okay. So moving on then,  
9 Mr. Shutes, are you aware that the NMFS CWF Biological  
10 Opinion analyzes the potential effects of California  
11 WaterFix on other runs of salmon?

12 WITNESS SHUTES: I'm somewhat aware of that,  
13 yes.

14 MS. MORRIS: And what's your understanding of  
15 that?

16 WITNESS SHUTES: It evaluates effects on  
17 spring-run; it evaluates effects on fall-run. But it  
18 does not, as I understand it, have specific measures  
19 designed to protect fall-run.

20 MS. MORRIS: Okay. And can we please pull up,  
21 Mrs. Gaylon, Shutes 5.

22 And, again, this is an excerpt of State Water  
23 Resources Control Board 106, Page 111-10. And this is  
24 the NMFS Biological for California WaterFix, correct?

25 WITNESS SHUTES: That's what it appears to be,

1 yes.

2 MS. MORRIS: And looking at the second page,  
3 and sorry it's not -- it's unfortunate that there are  
4 not numbers on lines. But in that first paragraph, do  
5 you see -- I believe it's the third sentence that  
6 begins with "Although survival"?

7 WITNESS SHUTES: I've read the sentence. It's  
8 a long sentence.

9 MS. MORRIS: Okay. Let me ask you the  
10 question, and if you need a chance to refer to the  
11 document, we can take that time.

12 Doesn't the NMFS Biological Opinion find that  
13 the project and the commitments for the project are  
14 beneficial to listed Chinook, are also applicable to  
15 all Central Valley Chinook salmon populations?

16 WITNESS SHUTES: That appears to be the  
17 overarching evaluation that NMFS made.

18 MS. MORRIS: Okay. And looking again at your  
19 testimony on Page 9 -- okay. Thank you -- Lines 16 to  
20 17, is this comment specific to monitoring with rotary  
21 screw traps at Knight's Landing?

22 WITNESS SHUTES: I'm sorry. Which lines  
23 again, please?

24 MS. MORRIS: Sure. It's Lines 16 to 17.

25 WITNESS SHUTES: Mm-hmm.

1 MS. MORRIS: And it begins, "To the degree  
2 that I understand" -- oops, that's the wrong -- I  
3 apologize. I'll come back to that question.

4 Mr. Shutes, are you recommending carryover  
5 storage requirements on all reservoirs upstream of the  
6 Delta?

7 WITNESS SHUTES: Just the major storage  
8 reservoirs in the Central Valley Project and the State  
9 Water Project -- of the State Water Project and Central  
10 Valley Project, not all reservoirs. I don't believe  
11 that's appropriate in this proceeding.

12 MS. MORRIS: But the question was upstream of  
13 the Delta. So why don't you just list out which  
14 reservoirs you're making a request to the Board to  
15 place carryover storage requirements on.

16 WITNESS SHUTES: Trinity, Shasta, Oroville,  
17 and Folsom. I believe I said North of Delta in my  
18 testimony.

19 MS. MORRIS: What do you expect to happen when  
20 this is a mismatch, meaning the amount of water  
21 stored -- sorry -- the amount of stored water above the  
22 storage requirement is not sufficient to meet Delta  
23 requirements?

24 WITNESS SHUTES: The operators would have to  
25 go through a series of different operational

1 considerations. The first would be can they reduce  
2 exports or releases from storage.

3 I think a lot of it really has to do with not  
4 just what happens at any given instant but how you got  
5 to that instant. And part of the goal of carryover  
6 storage is to make sure that you don't put yourself in  
7 a position to -- to not be able to meet all your  
8 operational requirements.

9 MS. MORRIS: Okay. Let me follow up on that  
10 quickly. My question was really specific. If you have  
11 a -- let's just take Oroville, for example.

12 You understand that the CVP and the SWP  
13 jointly operate the projects to meet their joint  
14 requirements under D1641, correct?

15 WITNESS SHUTES: Correct.

16 MS. MORRIS: So if you were to place a higher  
17 carryover storage target on, let's say, Oroville, and  
18 releases were required from Oroville to meet D1641  
19 requirements that would go -- that would cause the  
20 carryover target to fall below your suggested carryover  
21 target, what would happen?

22 WITNESS SHUTES: Again, I think the question  
23 is more a question of how did you get to that situation  
24 in the first place, and what releases did you make that  
25 put you in a position where you're not able to meet all

1 your requirements.

2 MS. MORRIS: I'll follow up on that in a  
3 second. I want to go back -- and apologize on this  
4 question. I want to look at your testimony on Page 11,  
5 and specifically on Lines 16 to 17, where it begins  
6 "Smolt-sized salmon, for instance." And my question is  
7 is that comment specific to monitoring with rotary  
8 screw traps at Knight's Landing?

9 WITNESS SHUTES: No.

10 MS. MORRIS: Just in general?

11 WITNESS SHUTES: General.

12 MS. MORRIS: And Ms. Gaylon, if you could pull  
13 up Shutes 3 again. This is the State Water Resources  
14 Control Board Exhibit 106 -- this is the wrong one. I  
15 apologize.

16 It's Shutes 4. This is an excerpt from State  
17 Water Resources Control Board 107 at Page 191, the  
18 second page. And this is the incidental take permit  
19 for WaterFix, and if I could direct your attention to  
20 the top paragraph. Are you aware that California  
21 WaterFix is required to consider additional monitoring  
22 stations and techniques in order to meet the Biological  
23 Criteria 1 and 2?

24 WITNESS SHUTES: That's what this says.

25 MS. MORRIS: And those monitoring stations and

1 techniques are to evaluate fish triggers for initiating  
2 pulse protection and pulse duration, correct?

3 WITNESS SHUTES: For spring-run and  
4 winter-run.

5 MS. MORRIS: Looking at Page 16 of your  
6 testimony, you recommend a carryover storage target at  
7 Oroville that would provide assurance under the  
8 99 percent exceedance, correct?

9 WITNESS SHUTES: Correct.

10 MS. MORRIS: Mr. Shutes, do you understand  
11 that in-basin uses include USBR and DWR joint  
12 obligations under D1641?

13 WITNESS SHUTES: I do.

14 MS. MORRIS: And this includes using Trinity,  
15 Shasta, and Folsom reservoirs, correct?

16 WITNESS SHUTES: Yes.

17 MS. MORRIS: And do you understand that a  
18 99 percent exceedance is a 1-in-100-year chance of  
19 occurring?

20 WITNESS SHUTES: I do.

21 MS. MORRIS: Are you aware that hydrological  
22 exceedance levels are developed using historical  
23 conditions?

24 WITNESS SHUTES: I'm sorry. Can you repeat  
25 that?

1 MS. MORRIS: Are you aware that the  
2 hydrological exceedance levels are developed using  
3 historical conditions?

4 WITNESS SHUTES: Which hydrological exceedance  
5 levels?

6 MS. MORRIS: The ones that you're referring to  
7 when you say 99 percent exceedance.

8 WITNESS SHUTES: Uh. . .

9 MS. MORRIS: Let me state it another way.

10 WITNESS SHUTES: All right.

11 MS. MORRIS: Using the 99 percent exceedance  
12 would be incorporating conditions similar to 1977, the  
13 driest year on record in every year, correct?

14 WITNESS SHUTES: I got as far as "1977." I  
15 didn't follow the second part of the question.

16 MS. MORRIS: So --

17 WITNESS SHUTES: That would be the standard --  
18 in other words, 1997 would be the standard; is that  
19 what you're asking?

20 MS. MORRIS: You would be operating to that  
21 standard in every single year, correct, if you used the  
22 99 percent exceedance?

23 WITNESS SHUTES: That's the recommendation.

24 MS. MORRIS: Okay. And, Mr. Shutes, have you  
25 modeled the impacts associated with adopting a

1 99 percent exceedance?

2 WITNESS SHUTES: No, I don't have a model that  
3 I could do that work with.

4 MS. MORRIS: Have you looked at the costs and  
5 benefits of such a requirement?

6 WITNESS SHUTES: Not explicitly.

7 MS. MORRIS: Have you provided the analysis of  
8 the costs and benefits in your testimony here today or  
9 in your written testimony?

10 WITNESS SHUTES: Of that?

11 MS. MORRIS: Yes.

12 WITNESS SHUTES: No.

13 MS. MORRIS: Looking at your testimony on  
14 Page 17, Lines 7 to 9, are you suggesting that having  
15 the ability to shift pumping away from the South Delta  
16 when fish are present near the southern exports is not  
17 protective?

18 WITNESS SHUTES: I'm sorry. Which lines are  
19 we looking at, please?

20 MS. MORRIS: 7 to 9. The sentence that begins  
21 "That certainly sounds like."

22 WITNESS SHUTES: Okay. And what's the  
23 question again, please?

24 MS. MORRIS: Are you suggesting that having  
25 the ability to shift pumping away from the South Delta



1 when fish are present near the southern exports is not  
2 protective?

3 WITNESS SHUTES: It depends on how you make  
4 the shift.

5 MS. MORRIS: Looking on your testimony at  
6 Page 18, Line 14, you state here that the formula that  
7 you're -- sorry. You state here that the formula  
8 you're showing above changes, correct?

9 WITNESS SHUTES: It changes based on the  
10 projected amount of Table A deliveries.

11 MS. MORRIS: And you're referring to the  
12 formula up above on Line 4?

13 WITNESS SHUTES: Correct.

14 MS. MORRIS: Are you suggesting that this  
15 formula changes several times a year, or are you  
16 indicating that the value of coefficient F is changing?

17 WITNESS SHUTES: Coefficient F.

18 MS. MORRIS: And F is increasing and  
19 decreasing based on allocations to State Water  
20 Contractors under their long-term water supply  
21 contracts, correct?

22 WITNESS SHUTES: That's correct.

23 MS. MORRIS: So when State Water Contractor  
24 allocations go up, so does carryover storage, correct?

25 WITNESS SHUTES: In some increments, yes.

1 MS. MORRIS: And the floor you mention in your  
2 testimony on Page 18 is the minimum carryover target,  
3 correct?

4 WITNESS SHUTES: Correct.

5 MS. MORRIS: And that's shown as the 1 million  
6 acre-feet in the formula on Line 4 of Page 18 in your  
7 testimony, correct?

8 WITNESS SHUTES: In this example, yes.  
9 Mr. Leahigh stated in his testimony in Part 1 that that  
10 figure had recently been changed to 1.3 million  
11 acre-feet.

12 MS. MORRIS: And looking at your testimony on  
13 Page 19, Line 17, you testify that the benefit to  
14 deliveries is even smaller with the 1.3 million  
15 acre-foot target, correct?

16 WITNESS SHUTES: What I'm stating there is  
17 that, as the size of the floor increases and you have  
18 more certainty for carryover storage, the effect of the  
19 variable depending on Table A becomes smaller.

20 MS. MORRIS: I think what I'm asking is I'm  
21 trying to understand your testimony. And you say  
22 there's a benefit to deliveries. So when you say  
23 there's a benefit to deliveries, are you referring to  
24 the policy of keeping additional storage for the  
25 following year?

1                   WITNESS SHUTES: I'm sorry. Which line are  
2 you looking at, please? I'm not following your  
3 language.

4                   MS. MORRIS: Again, looking at the same lines,  
5 Page 19, Line 17.

6                   WITNESS SHUTES: The benefit from increased  
7 deliveries -- in other words, the benefit to carryover  
8 storage, the increase in carryover storage that's  
9 occasioned by Factor F, as you called it, in the -- in  
10 the formula that's stated at the top of Page 18.

11                  MS. MORRIS: And I'm sorry. I'm going to slow  
12 down. I'm not understanding.

13                  What I'm asking is is the benefit that you're  
14 referring to in that sentence the policy of keeping  
15 additional storage for the following year? Is that the  
16 benefit?

17                  WITNESS SHUTES: The benefit is increased  
18 carryover storage. That's what I'm referring to.

19                  MS. MORRIS: Okay. Thank you. Isn't the  
20 reduction in benefit to deliveries as you describe  
21 simply a mathematical phenomenon that occurs when  
22 something else gets smaller?

23                  Do you want me to give you an example?

24                  WITNESS SHUTES: I think the answer is yes.  
25 Something else has to get smaller. Water doesn't just

1 go away.

2 MS. MORRIS: So with a maximum storage of  
3 3.5 million acre-feet and a floor of 1 million  
4 acre-feet, isn't there about 2.5 million acre-feet of  
5 usable storage?

6 WITNESS SHUTES: If that's how you defined  
7 your usable storage, then 1 point -- anything below  
8 1 million is not available, then that would be  
9 2.5 million, yes, it would.

10 MS. MORRIS: And similarly, if we used one of  
11 your floors, if you increase the floor to 1.6 million  
12 acre-feet, doesn't the usable storage drop to  
13 1.9 million acre-feet?

14 WITNESS SHUTES: Yes, it would. Although you  
15 have to account for the fact that you have water going  
16 in and going out of the reservoir. It's not a constant  
17 that's held over the summer. It's a lot of upstream  
18 inflow from Lake Almanor and other locations on the  
19 north fork.

20 MS. MORRIS: But that variability would be  
21 constant amongst all the different floors, correct?

22 WITNESS SHUTES: I'm sorry. What variability?

23 MS. MORRIS: You suggested --

24 WITNESS SHUTES: You said, "That variability  
25 would be constant. I don't understand what you mean

1 by --

2 MS. MORRIS: You just said -- I asked you a  
3 question, and you responded that, "That's true, but  
4 there would be variability as I understand it, based"  
5 -- what you said was "based on what is happening  
6 upstream and what's going in and out."

7 WITNESS SHUTES: Correct.

8 MS. MORRIS: And my question is isn't that  
9 variability the same in all scenarios? If you're just  
10 changing your floor, that variability is the constant  
11 -- it's the same amongst all the different floors?

12 WITNESS SHUTES: That's correct.

13 MS. MORRIS: And in your analysis that did,  
14 looking at different floors, you didn't take into  
15 consideration that variability, did you?

16 WITNESS SHUTES: I don't know exactly what you  
17 mean by "take into consideration."

18 MS. MORRIS: Did you analyze it?

19 WITNESS SHUTES: I was aware of it.

20 MS. MORRIS: Your analysis regarding Oroville  
21 is contained in the spreadsheet on CSPA-313, and it  
22 looks at different floors.

23 WITNESS SHUTES: It does.

24 MS. MORRIS: Did you look at the variables  
25 that you've just told us about? Did you consider those

1 in your analysis in CSPA-313?

2 WITNESS SHUTES: I didn't particularly. But I  
3 think what I'm trying to get at is the fact that you're  
4 suggesting that you have only 1.9 million acre-feet of  
5 storage as compared to 2.5. And that really doesn't  
6 account for the fact that you have, during the  
7 summer -- over the course of the water year, you have  
8 water going in and going out. So you have -- may have  
9 more water available than simply the -- what you have  
10 at any instant moment.

11 MS. MORRIS: But I -- my questions are  
12 regarding the usable storage. And if you have a hard  
13 carry over of 1.6 million acre-feet, which means that  
14 water cannot be evacuated or used or released for other  
15 purposes, then that drops the amount of usable storage,  
16 does it not?

17 WITNESS SHUTES: It reduces usable storage,  
18 but again, your target is for the end of September.  
19 And you could go below the carryover storage in August  
20 or July, knowing that more inflow would be coming in at  
21 the end of the summer to meet your carryover storage  
22 target.

23 So that effectively gives you more available  
24 storage. It just means that you do have reduced  
25 storage compared to having a lower carryover from that

1 point.

2 MS. MORRIS: Okay. And that analysis that you  
3 just described, you don't complete in CSPA-313, do you?

4 WITNESS SHUTES: No, but I assumed it.

5 MS. MORRIS: Okay. Looking at Page 19 of your  
6 testimony -- actually, let's move on.

7 So on Page 19 of your testimony, Line 25, you  
8 request that the State Board require an end-of-October  
9 carryover for Oroville 1.6 million acre-feet in  
10 October. Did you mean September?

11 WITNESS SHUTES: September -- if you look at  
12 the Errata version of the document, it says  
13 "September."

14 MS. MORRIS: Oh. You're right, thank you.

15 And did you do any -- you're all very good  
16 with knowing the correct exhibits, much better than  
17 Mr. Jackson and I.

18 Did you do any analysis other than the  
19 calculation you show in CPFA-313?

20 WITNESS SHUTES: I did. If you look at -- and  
21 it's "CSPA."

22 MS. MORRIS: Thank you.

23 WITNESS SHUTES: And if you look at Exhibit  
24 CSPA-314 and 315, I looked at what happened  
25 historically when carryover storage got in trouble and

1 what the releases were from Oroville during that time  
2 period and those in 2007 and 2013 in particular  
3 because, by the end of those periods, going into 2008  
4 and 2014 respectively, it looked like the system was in  
5 trouble.

6           And so part of the analysis was, well, could  
7 you cut back on releases in order to assure that an  
8 end-of-December value is not going to put you in a  
9 difficult position.

10           I did not recommend a specific measure because  
11 I think that, in some measure, has to be iterative  
12 because you don't know what inflow is going to be. But  
13 I think that, as you go through the -- as you go  
14 through the fall in a year when you're down close to  
15 your minimum, you want to try to be sure that you're  
16 not losing ground or making any discretionary releases  
17 in the fall period and getting yourself into a point  
18 where all of a sudden you're faced with the inability  
19 to meet the next year's in-basin requirements.

20           MS. MORRIS: Okay. Thank you for that  
21 explanation. I think my question was a little bit more  
22 narrow. And I understand the 314 and 315, you're  
23 looking at scenarios and looking at historical data.

24           But my question was really other than the  
25 calculations you did in CPSA -- CSPA, thank you, 313,



1 did you do any other calculations to support your  
2 opinions?

3 WITNESS SHUTES: I reviewed the hydrographs  
4 for the different years of the period of record that --

5 MS. MORRIS: Those aren't calculations. You  
6 just looked at historical data, correct?

7 WITNESS SHUTES: I looked at historical data,  
8 and I calculated how much water was released from  
9 storage in each of the years, in particular, in those  
10 years when a lot of storage release was released in a  
11 dry year that followed a wet year. And what the  
12 consequences of that were when the first dry year was  
13 followed by a second dry year or a critically dry year.  
14 That is a calculation, what I call it. You can call it  
15 what you like.

16 MS. MORRIS: Looking at your Exhibit 313, this  
17 is your exhibit you prepared that contains your  
18 analysis of different carryover storage targets,  
19 correct?

20 WITNESS SHUTES: It is.

21 MS. MORRIS: In reviewing this exhibit, you  
22 didn't look at how allocation would have changed with  
23 the higher storage target, did you?

24 WITNESS SHUTES: That's correct.

25 MS. MORRIS: Would those allocations increase

1 or decrease with higher end-of-September storage  
2 targets?

3 WITNESS SHUTES: That would be up to DWR. If  
4 I were running DWR, they would decrease.

5 MS. MORRIS: If DWR had operated to the floor  
6 of 1.3 million acre-feet or 1.6 million acre-feet,  
7 wouldn't the resulting allocation be less and the  
8 resulting storage be more than what was historically  
9 observed?

10 WITNESS SHUTES: I'm sorry. Say that one more  
11 time, please.

12 MS. MORRIS: If DWR had operated to the floor  
13 of 1.3 million acre-feet or 1.6 million acre-feet  
14 wouldn't the resulting allocation be less and the  
15 resulting storage be more than what was observed  
16 historically?

17 WITNESS SHUTES: The resulting allocations  
18 would be less and the storage would be more; that's  
19 correct.

20 MS. MORRIS: And doesn't the resulting target  
21 storage in your analysis depend on Columns C and D?

22 WITNESS SHUTES: That's correct.

23 MS. MORRIS: So if the allocations in the  
24 resulting September storage changed, wouldn't the  
25 numbers in your spreadsheet have to change?

1 WITNESS SHUTES: Yes, they would change.

2 MS. MORRIS: So the numbers listed in  
3 Columns G and H are based or the calculations are based  
4 on historical operations, correct?

5 WITNESS SHUTES: That's correct.

6 MS. MORRIS: In your analysis, did you look at  
7 the increased risk of flood control operations at  
8 Oroville Reservoir with higher carryover storage  
9 targets?

10 WITNESS SHUTES: No, I didn't look at that.  
11 If you look at the graph that follows --- it's the  
12 second page of Exhibit 313. What I did observe was  
13 that, when you get in situations where you have a lot  
14 of storage, that usually is in wet years like 2005,  
15 2006, 2011.

16 And the likelihood of having -- exceeding,  
17 greatly exceeding your end-of-September carryover  
18 storage target is very high in those years. And those  
19 are the years, in my opinion, if you look at the  
20 end-of-September carryover storage, where you would be  
21 more likely to run across likelihoods of -- increased  
22 likelihood of flood control operations, not what you're  
23 looking at when you're operating at or close to the  
24 minimum.

25 MS. MORRIS: Are you aware that Oroville has a

1 FERC license?

2 WITNESS SHUTES: Very aware.

3 MS. MORRIS: And are you aware that there are  
4 certainly flow requirements, including maintenance of  
5 temperatures for the low flow and the high flow  
6 channels in that license?

7 WITNESS SHUTES: I am, although -- actually,  
8 that is in the license that has not been issued yet.

9 MS. MORRIS: Thank you for that clarification.

10 WITNESS SHUTES: There are requirements both  
11 in the water quality certification and the proposed  
12 license conditions as shown in FERC's EIS.

13 MS. MORRIS: I'm asking -- and I realize you  
14 may need to expand on some things, but I'm trying to be  
15 efficient with my time, and I have a lot of questions.  
16 So I'm really trying to ask very narrow and specific  
17 questions. And your counsel can allow you to expand on  
18 things in redirect. So if you could help me be  
19 efficient with my time, I would greatly appreciate it.

20 MR. JACKSON: I sort of object to the lecture.  
21 He needs to answer the question completely. And I  
22 think he has been so far.

23 CO-HEARING OFFICER DODUC: Let's move on.

24 MS. MORRIS: Did you model how your proposal  
25 would impact meeting these FERC license requirements?

1           WITNESS SHUTES: No, and so I've stated before  
2 in Part 1 of this hearing that I don't have the  
3 capability of modeling or using CalSim as a model. The  
4 model for the Oroville relicensing did not include  
5 carryover storage, and it was not one of the  
6 components.

7           I looked into that a couple of years ago.  
8 It's very limited to hydropower operations and  
9 immediate flow releases. And as an overarching matter,  
10 it assumes the normal operation of the project,  
11 quote/unquote. And so I don't have a tool that would  
12 allow me to do that.

13           MS. MORRIS: Okay. So you don't have a tool  
14 and you did not model how that would be -- how that  
15 could potentially be impacted by your carryover storage  
16 target requirements?

17           WITNESS SHUTES: Correct.

18           MS. MORRIS: Again, looking at the DWR-851,  
19 Ms. Gaylon, thank you.

20           Are you familiar with this slide that was  
21 presented by Mr. Leahigh in rebuttal testimony?

22           WITNESS SHUTES: I am.

23           MS. MORRIS: And looking at the 2015 example,  
24 doesn't this show that in 2015 releases from Oroville  
25 to support exports were very low?

1           It's at the red box that you can barely see at  
2 the top of the far right. It's actually basically a  
3 line, because it's very thin.

4           WITNESS SHUTES: Yes, I understand that, in  
5 very dry conditions, discretionary releases are  
6 limited. And that's why I didn't make specific  
7 recommendation regarding how you get from  
8 end-of-September to end-of-December.

9           I would also point out that this -- if it's  
10 not the 99 percent exceedance, it's darn close. And so  
11 if you get into this kind of condition -- I mean, part  
12 of the question, as I said before, is how did you get  
13 here and what did you do in terms of your releases in  
14 previous years to draw your storage down so much.

15           But if you're truly in extreme situations,  
16 then I think you have to look at a different outcome.

17           MS. MORRIS: And the primary releases for this  
18 year went to supporting Delta requirements for the  
19 river flow requirements and afterbay settlement  
20 deliveries, correct?

21           WITNESS SHUTES: That's correct.

22           MS. MORRIS: Do you know if there was a TUCP  
23 in place in 2015?

24           WITNESS SHUTES: There was.

25           MS. MORRIS: And do you propose that there

1 ever be an exception to your carryover requirements at  
2 Oroville?

3 WITNESS SHUTES: That would be 1.6-, and I  
4 think that there would probably need to be. And I  
5 think that the Board should be doing the analysis to  
6 determine whether it's 99 or 92 or 95 or something  
7 percent. And not -- and not just saying, "Well,  
8 because 99 percent doesn't work, there's nothing we can  
9 do."

10 So I think that, yes, that's why I didn't say  
11 a hundred percent. But I think it's really up to the  
12 Board and to those that have the ability to do that  
13 level of analysis to make a determination.

14 But the option that exists now where there's  
15 no requirement, in my opinion, is unacceptable.

16 MS. MORRIS: I have -- I'm ready to move on to  
17 another witness, then. It's noon, so I'm happy to  
18 break, or I can go ahead and start, whatever your  
19 preference.

20 CO-HEARING OFFICER DODUC: Let's go ahead and  
21 take our lunch break then. Thank you. We will return  
22 at 1:00 o'clock.

23 And please do consult with Mr. Jackson  
24 regarding those two witnesses who are not able to come  
25 tomorrow.

1 Ms. Meserve.

2 MS. MESERVE: Good afternoon, Osha Meserve for  
3 LAND and other parties. I had a question, and maybe it  
4 could be considered and brought back to us this  
5 afternoon. But I believe this morning you stated that  
6 a response to DWR's filing from 6:00 p.m. last night  
7 regarding the scope of the hearing would be due by 5:00  
8 p.m today?

9 CO-HEARING OFFICER DODUC: Tomorrow.

10 MS. MESERVE: Tomorrow. I would just note  
11 that this -- the pleading that was filed by DWR was  
12 filed regarding something that happened about a month  
13 ago. And it's very difficult for protestants here  
14 trying to monitor the hearing to also be writing a  
15 brief, which is -- this is quite a critical issue to  
16 us, what the scope of Part 2 is.

17 The brief alleges that the scope is very  
18 narrow. Of course, we don't think the Board has ever  
19 said that. And we need to go back through the  
20 different rulings and different things that's in  
21 transcripts to be able to support our view of what the  
22 scope of Part 2 is.

23 CO-HEARING OFFICER DODUC: I appreciate that,  
24 which is why I didn't say 5:00 p.m. today. But I  
25 gather where you're going is that you would like more



1 time.

2 MS. MESERVE: Yes, perhaps maybe a week to  
3 respond? I mean, it seems like an ongoing large issue  
4 for this hearing which is not likely to be resolved  
5 today or tomorrow. So I would request, yes, something  
6 like a week to respond so that we could thoughtfully  
7 look at this and get back to you with something that's  
8 more thorough.

9 CO-HEARING OFFICER DODUC: All right. Thank  
10 you.

11 Unless you have something new --

12 MR. KEELING: You anticipate that I'm going to  
13 reiterate that request. I haven't had time to even  
14 read the response yet much less get back to my office,  
15 review two years' worth of rulings, and write a brief.  
16 And so I would like a week at least to respond to that.

17 MS. DES JARDINS: Oh, I --

18 CO-HEARING OFFICER DODUC: You second the  
19 motion?

20 MS. DES JARDINS: Yes.

21 CO-HEARING OFFICER DODUC: All right. Thank  
22 you.

23 With that, we will take a lunch break and  
24 return at 1:00 o'clock. Thank you.

25 (Whereupon, the luncheon recess was taken

1 at 12:03 p.m.)

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1                                    AFTERNOON SESSION

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3                                    (Whereupon, all parties having  
4                                    been duly noted for the record,  
5                                    the proceedings resumed at  
6                                    1:00 p.m.)

7                            CO-HEARING OFFICER DODUC: All right. It is  
8    1:00 o'clock. We are back in session. A couple of  
9    housekeeping matters from me, and then I'll check in  
10   with others.

11                          Ms. Meserve, we received both yours and  
12   Mr. Brodsky's written request to switch places. And  
13   that is -- that request is granted.

14                          So Groups 46, 47, 48 will now be in the 19th  
15   group order. And Group 30 will now be in the 24th  
16   group order, if that makes sense.

17                          Secondly, Ms. Meserve, your request for  
18   additional time to respond to DWR's motion for  
19   reconsideration is also granted. The new date now  
20   is -- that will be Wednesday, April 4th at 5:00 p.m.,  
21   so that is a week. That's two for two Ms. Meserve.

22                          And before I get to Mr. Mizell and Mr. Jackson  
23   regarding Panel 2's two witnesses, let me give you a  
24   heads up that we might be going later today. If at all  
25   possible, I would like to get through this panel so

1 that means we may stay at late at 6:00 o'clock. I hope  
2 we don't have to bring you back tomorrow. We'll do our  
3 best.

4 All right. With respect to -- who were those  
5 two witnesses?

6 MS. DES JARDINS: I have one housekeeping  
7 matter.

8 CO-HEARING OFFICER DODUC: I'll not done yet.  
9 I don't think I could ever forget you, so. . .

10 Okay. Who are the two witnesses for Panel 2?

11 MR. JACKSON: David Hurley and Jerry  
12 Neuberger.

13 CO-HEARING OFFICER DODUC: And what is the  
14 estimated cross-examination?

15 MR. MIZELL: With the cooperation of the  
16 witnesses, I believe I can get my questions down in  
17 five minutes.

18 CO-HEARING OFFICER DODUC: And direct will  
19 take?

20 MR. JACKSON: I would think that direct of  
21 those two witnesses, if that's how you would like to do  
22 it, could be done in 15.

23 CO-HEARING OFFICER DODUC: All right. Are  
24 there any other cross-examination of just those two  
25 witnesses?

1 (No response)

2 CO-HEARING OFFICER DODUC: What I would  
3 suggest, then, is we finish with this cross-examination  
4 by the Department and State Water Contractors of this  
5 panel. Then, if you don't mind, we'll switch those two  
6 witnesses, have their testimony, have their cross, and  
7 then dismiss those two witness. And then we will  
8 resume with cross-examination of this panel.

9 MR. JACKSON: Thank you very much.

10 CO-HEARING OFFICER DODUC: Okay.

11 Now, Ms. Des Jardins.

12 MS. DES JARDINS: Apologies. So,  
13 Deirdre Des Jardins, with California Water Research.

14 So on March 16th, I told the -- I said orally  
15 in the hearing that I was working to subpoena CDFW  
16 witnesses. I saw that somehow they've been removed  
17 from the hearing notice. I wasn't sure how.

18 I did issue the subpoena. It was served on  
19 Fish and Wildlife Office of General Counsel. They  
20 refused service, saying that it was a subpoena by an  
21 individual for a personal appearance, to have it served  
22 directly on the witness.

23 And I've been in contact. I got -- CFW  
24 counsel did call me, and they said that I needed to  
25 send witness fees. So I sent them by certified mail

1 with return receipt requested.

2           And I -- then on two of the hearing dates that  
3 I thought -- I subpoenaed for a number of dates when I  
4 though I might have my case in chief. Two of the  
5 hearing dates, the 30th and the 5th, were canceled.  
6 That leaves April 2nd, which I think my case in chief  
7 might come up on, and I have let them know that I would  
8 like -- I've subpoenaed Randy Baxter, who was the lead  
9 for the 2010 CDF- -- Delta Flow Criteria hearing, CDFW  
10 panel. He was going to be cross-examined on the  
11 recommendations of the panel.

12           So I let him know that I would like him to be  
13 available then because I think my case in chief might  
14 come up. And I've asked them to -- I want an objection  
15 hearing if they think that -- if they object to the  
16 subpoena.

17           CO-HEARING OFFICER DODUC: All right. We  
18 received your subpoena and everything else yesterday,  
19 and we'll take a look at that. We've not had a chance  
20 to.

21           MS. DES JARDINS: I apologize for the delay in  
22 serving it. I had a delay in receiving the affidavit  
23 of service from the process server, who I do not  
24 recommend anyone ever using again.

25           CO-HEARING OFFICER DODUC: All right. We do

1 not endorse any services here.

2 MR. WRIGHT: Good afternoon. Bob Wright on  
3 behalf of the Friends of the River, Sierra Club,  
4 California. Housekeeping. At the moment, half our  
5 witnesses are out of town. I've got them straddling  
6 between -- well, maybe Wednesday afternoon or Thursday,  
7 It would be great if, during the afternoon, if you get  
8 estimates on cross-examination of what's in front of us  
9 still.

10 CO-HEARING OFFICER DODUC: I usual do that at  
11 the end of the day.

12 MR. WRIGHT: It would be great if we could get  
13 word like, "Okay. You don't have to show until  
14 Thursday," for example.

15 CO-HEARING OFFICER DODUC: We always try do  
16 our best.

17 MR. WRIGHT: Thank you very much.

18 CO-HEARING OFFICER DODUC: All right. Not  
19 seeing any further housekeeping matters, I now will  
20 turn it back to Ms. Morris.

21 CROSS-EXAMINATION BY MS. MORRIS (resumed)

22 MS. MORRIS: Thank you. Questions for you,  
23 Mr. Stokely.

24 Mr. Stokely, have you testified as an expert  
25 in state court?

1           WITNESS STOKELY: I was a witness in a Trinity  
2 County Superior Court case. I don't know if that  
3 counts as an expert.

4           MS. MORRIS: As an expert?

5           WITNESS STOKELY: No, just a witness.

6           MS. MORRIS: Okay. And what were you  
7 testifying about?

8           WITNESS STOKELY: It was a litigation between  
9 the County of Trinity and the Trinity Public Utilities  
10 District regarding federal legislation that was passed  
11 that provided funding to the Trinity PUD and not to the  
12 County.

13          MS. MORRIS: So you were providing lay witness  
14 testimony?

15          WITNESS STOKELY: Yes.

16          MS. MORRIS: Thank you. And have you ever  
17 testified as a witness in federal court?

18          WITNESS STOKELY: No.

19          MS. MORRIS: Is it true that all your of  
20 estimates are based on increased Trinity River  
21 diversions?

22          WITNESS STOKELY: My opinions are based on 30  
23 years of experience with the Trinity River and  
24 watching, observing what the impacts have been, both in  
25 the Central Valley and in the Trinity River. So I'm



1 not quite sure I understand your question.

2 MS. MORRIS: I wasn't trying to ask about the  
3 basis of your understanding or how you reached your  
4 opinions but rather, it seems to me -- I'm trying to  
5 short-circuit this a bit.

6 WITNESS STOKEY: Oh, yes.

7 MS. MORRIS: But all of your opinions in this  
8 testimony are based on increased Trinity River  
9 diversions?

10 WITNESS STOKEY: Not "increased," just  
11 Trinity River diversions.

12 MS. MORRIS: Okay. Are you aware that the  
13 South Delta exports decrease under California WaterFix  
14 in wet, above normal, and below normal water years?

15 WITNESS STOKEY: I'm not aware of that.

16 MS. MORRIS: And are you aware that the South  
17 Delta exports remain unchanged in dry and critical  
18 years?

19 WITNESS STOKEY: I'm not aware of that  
20 either.

21 MS. MORRIS: Are you aware that California  
22 WaterFix imposes increased restrictions on South Delta  
23 pumping?

24 WITNESS STOKEY: I'm aware of that sitting  
25 through Panel 2.

1 MS. MORRIS: And regarding your statement on  
2 Page 4 of your testimony, Lines 3 to 6 that Trinity  
3 River diversions to the CVP increased Delta fish  
4 mortality from Delta pumping, the basis of that is  
5 Kimmerer 2008, Figure 10, correct?

6 WITNESS STOKELY: Yes.

7 MS. MORRIS: And that report is based on South  
8 Delta pumping, correct?

9 WITNESS STOKELY: Correct.

10 MS. MORRIS: And are you aware that Kimmerer  
11 2008 Figure 10 shows that entrainment losses decrease  
12 with South Delta exports?

13 WITNESS STOKELY: I'm not.

14 MS. MORRIS: So if we look at your Exhibit  
15 CSPA-357, please.

16 WITNESS STOKELY: Mm-hmm.

17 MS. MORRIS: On Page 19

18 WITNESS STOKELY: Yes.

19 MS. MORRIS: Looking at Figure 10?

20 WITNESS STOKELY: Mm-hmm.

21 MS. MORRIS: Oh, sorry. We should wait for  
22 everyone else to see it, I suppose.

23 So you're using this in your statement to say  
24 that increased Delta pumping increases entrainment and  
25 mortality, correct?

1 WITNESS STOKELY: Yes.

2 MS. MORRIS: Though isn't the inverse true,  
3 that increases in Delta pumping also decrease  
4 entrainment mortality?

5 WITNESS STOKELY: That's true. So it  
6 doesn't --

7 MS. MORRIS: So based on Kimmerer 2008, the  
8 basis of your opinion that CWF would result in -- I'm  
9 sorry.

10 Based on Kimmerer 2008, California WaterFix  
11 should result in decreased entrainment mortality -- and  
12 mortality because South Delta exports decrease or stay  
13 the same compared to the No Action Alternative,  
14 correct?

15 WITNESS STOKELY: That's a possibility, but as  
16 Mr. Cannon indicated, the screens that are proposed at  
17 the North Delta diversion may not work.

18 MS. MORRIS: Right. But you didn't provide  
19 any testimony about any mortality or salvage at the  
20 North Delta facilities, did you?

21 WITNESS STOKELY: No.

22 MS. MORRIS: Okay. No further questions.

23 Good afternoon. Mr. Jennings, just have a  
24 couple of questions for you. Have you ever testified  
25 as an expert in state court?

1           WITNESS JENNINGS: In state court -- I assume  
2 the next one is federal court and I'm thinking about it  
3 because, while I've been a plaintiff in 7- or 800  
4 lawsuits, I don't know that I've ever been a designated  
5 witness in a lawsuit.

6           MS. MORRIS: All right. Okay. So you haven't  
7 been designated an expert in state court.

8           WITNESS JENNINGS: I can't recall. I'll just  
9 leave it at that.

10          MS. MORRIS: Can you recall if you've been  
11 designated an expert in federal court?

12          WITNESS JENNINGS: I can't recall. I mean,  
13 it's --

14          MS. MORRIS: Do you have any formal training  
15 in biology?

16          WITNESS JENNINGS: No. Well, yeah, I took a  
17 biology course in school, but other than that, no.

18          MS. MORRIS: Do you have any formal training  
19 in hydrology?

20          WITNESS JENNINGS: No.

21          MS. MORRIS: This morning you gave an overview  
22 of your testimony, and it seemed -- and if I'm  
23 mischaracterizing it, I'll -- I hope you'll correct me  
24 because I'm not intending to -- that the project was  
25 based on "trust us."

1           Are you aware that the Biological Opinions and  
2 the ITP have specific operating criteria that has to be  
3 met by the Department of Water Resources and USBR?

4           WITNESS JENNINGS: Well, I know that the  
5 existing Biological Opinions have operating criteria  
6 and RPAs that have frequently been ignored. And --

7           MS. MORRIS: That was not my question.

8           WITNESS JENNINGS: And my testimony came from  
9 the point is that existing requirements in a document  
10 are only so good as they are complied with and  
11 enforced.

12          MS. MORRIS: Okay. So are you aware that the  
13 California WaterFix Biological Opinions and ITP have  
14 specific operating criteria that must be met by the  
15 Department of Water Resources and USBR?

16          WITNESS JENNINGS: I know that DWR has  
17 specifically requested that the State Board not put  
18 that operating criteria in their permits.

19          MS. MORRIS: That's not the question I'm  
20 asking. Can you answer the question that I'm asking?  
21 Are you able?

22          WITNESS JENNINGS: Obviously there are  
23 measures in those permits, yes.

24          MS. MORRIS: Okay. And the adaptive  
25 management process that's put forth by the California

1 WaterFix is driven by the regulatory agencies of the  
2 specific operational criteria that's being evaluated,  
3 correct?

4 WITNESS JENNINGS: Would you repeat that  
5 question.

6 MS. MORRIS: Sure. The adaptive management  
7 process is driven by the regulatory agencies of the  
8 operational criteria that is being evaluated through  
9 the adaptive management process, correct?

10 MR. JACKSON: I'm going to object to that  
11 question on the grounds it assumes facts not in  
12 evidence. The agencies are not here to testify.

13 So it's hearsay and assumes facts not in  
14 evidence.

15 CO-HEARING OFFICER DODUC: Mr. Jackson,  
16 actually, I was going ask Ms. Morris to repeat the  
17 question because I couldn't follow it, myself.

18 So perhaps we could try again?

19 MS. MORRIS: Sure.

20 Are you aware -- I'm sorry. And the adaptive  
21 management process is driven by the regulatory agencies  
22 of the operational criteria that is being evaluated,  
23 correct? So, for example, if a -- if a criteria in the  
24 U.S. Fish and Wildlife Service is being evaluated  
25 through adaptive management process, that agency is

1 driving the adaptive management, are they not? And if  
2 you don't know, that's a fair answer.

3 WITNESS JENNINGS: No, I can respond to that.  
4 But -- I mean, first of all, we don't have adaptive  
5 management process. We have a draft, basically a  
6 concept of what's proposed. We don't have a final  
7 signed, funded commitment for adaptive management.

8 Second, to say that it's being driven by the  
9 regulatory agencies, I'm assuming you mean U.S. Fish  
10 and Wildlife Service, National Marine Fisheries  
11 Service, and the California Department of Fish and  
12 Wildlife. I don't know and I can't tell from what's  
13 been presented that that's driving.

14 I know that participating in the adaptive  
15 management process are DWR and the Bureau, the -- at  
16 least on some of the groups, state and federal  
17 contractors. So I don't know who's driving adaptive  
18 management. I don't think it makes that clear.

19 MS. MORRIS: You don't know. Fair enough.

20 Have you reviewed the Biological Opinions for  
21 California WaterFix in terms of adaptive management?

22 WITNESS JENNINGS: I'm reasonably familiar.  
23 I'm sure you might find a question I don't know. Yes.  
24 Go ahead.

25 MS. MORRIS: I'm sure there's a lot of

1 questions that I wouldn't be able to answer. Fine.

2 Have you reviewed the ITP in terms of the  
3 requirements for adaptive management?

4 WITNESS JENNINGS: They all discuss adaptive  
5 management at length.

6 MS. MORRIS: But have you reviewed it?

7 WITNESS JENNINGS: I've glanced at it. I  
8 mean, I --

9 MS. MORRIS: Okay. And have you reviewed the  
10 mitigation, measuring, and monitoring plan in terms of  
11 adaptive management?

12 WITNESS JENNINGS: Well, in -- in which  
13 biological opinion? Because there are a number of  
14 those plans that are not finalized and will be  
15 developed and -- and approved in the future.

16 MS. MORRIS: No, I was talking about the  
17 mitigation, measuring, and monitoring plan for  
18 California WaterFix, not a biological opinion.

19 WITNESS JENNINGS: Oh. I -- I wouldn't claim  
20 to be intimately familiar with it.

21 MS. MORRIS: Okay. And have you reviewed the  
22 testimony of DWR's witness Dr. Earle in regards to  
23 adaptive management?

24 WITNESS JENNINGS: Yes, I'll be -- I'll be  
25 preparing a rebuttal of that exhibit from Mr. Earle.



1 MS. MORRIS: And in your testimony -- and I  
2 apologize because there's no numbers, so I'll try to  
3 direct you to the right spot.

4 This is CSPA-200 Corrected, Page 2. Okay.  
5 And then if you could scroll down, it's under "Overview  
6 of Testimony," about maybe halfway through the  
7 paragraph.

8 And I just wanted to direct your attention to  
9 your statement that the Adaptive Management Program  
10 must be predicated on the achievement of explicit  
11 biological performance targets.

12 WITNESS JENNINGS: Where is that?

13 MS. MORRIS: This is your testimony. And you  
14 say that any approved Adaptive Management Program must  
15 be predicated on the achievement of specific explicit  
16 biological performance.

17 WITNESS JENNINGS: Okay.

18 MS. MORRIS: Do you see that?

19 WITNESS JENNINGS: I -- I've frequently said  
20 that, yes.

21 MS. MORRIS: And are you aware that the  
22 documents that we just went through contain such  
23 targets and are subject to review, as you have  
24 outlined, and they do contain specific and explicit  
25 biological performance targets?

1                   WITNESS JENNINGS: Well, I was using the term  
2 "biological performance" as a measure of achievement.  
3 For example, the EPA's fish doubling criteria based on  
4 the percentage of the success of out-migrants reaching  
5 Chipps Island is a standard that's resulting -- it's  
6 not just counting fish between a rotary screw strap.  
7 But it is a biological performance measure tied to the  
8 recovery or the survival of a species that's  
9 enforceable.

10                   MS. MORRIS: Yeah, and that's how I understood  
11 the meaning. But you didn't answer my question. I  
12 understand how you used it.

13                   WITNESS JENNINGS: Yes.

14                   MS. MORRIS: I'm asking isn't it true that the  
15 Adaptive Management Program for this project does that?

16                   WITNESS JENNINGS: There are things proposed.  
17 I don't -- we don't have a final adaptive management  
18 plan that is something that will be developed in the  
19 future.

20                   MS. MORRIS: Mr. Baker, could you please pull  
21 up State Water Resources Control Board 111.

22                   CO-HEARING OFFICER DODUC: 111?

23                   MS. MORRIS: (Nods head affirmatively).

24                   And this is the final Mitigation, Monitoring,  
25 and Reporting program for California WaterFix that was

1 adopted as part of the Final EIR/EIS by the Department.  
2 And you have testified that you have reviewed this,  
3 correct?

4 WITNESS JENNINGS: Well, I mean, I -- not in  
5 depth. But I'm familiar. I've seen it, yes, and --

6 MS. MORRIS: And it's adopted by the  
7 Department in their Final EIR so that they're required  
8 to carry out this program, are they not?

9 MR. JACKSON: I'm going to object, that  
10 question calls for a legal conclusion.

11 MS. MORRIS: If he knows.

12 CO-HEARING OFFICER DODUC: Ms. Meserve.

13 MS. MESERVE: Good afternoon. Osha Meserve  
14 for LAND.

15 Point of clarification. I believe a couple  
16 days ago DWR launched a standing objection to  
17 discussion of mitigation measures. And I just would  
18 like some clarification as to is it a  
19 no-mitigation-for-you-type rule they're asking for, and  
20 then they're allowed to ask about mitigation?

21 CO-HEARING OFFICER DODUC: Stop, stop. I'm  
22 confused. What was the standing objection?

23 MS. ANSLEY: A couple days ago, in response to  
24 the air quality testimony of Mr. Philley who was a  
25 witness for --

1 MS. MESERVE: Sacramento.

2 MS. ANSLEY: Maybe Sacramento County. The  
3 sole basis for Mr. Philley's testimony wasn't the  
4 analysis of air quality impacts, which I believe he  
5 said were adequate and thorough, but he had tweaked to  
6 the specific mitigation measures that he wanted  
7 implemented.

8 And my objection then was that that is a  
9 matter to be taken up with -- in a CEQA matter, not  
10 before the Board here; whereas I think here,  
11 Ms. Morris's question goes to what has been actually  
12 adopted as part of the California WaterFix project.

13 CO-HEARING OFFICER DODUC: All right. That  
14 was two for three, Ms. Meserve.

15 MR. JACKSON: Could I reply?

16 MS. MORRIS: I'm happy to --

17 CO-HEARING OFFICER DODUC: Hold on, hold on.

18 MR. JACKSON: For the record, I want to object  
19 on the same grounds that Ms. Meserve objected. We've  
20 had some -- there's an errata that we're talking about  
21 with Mr. Jennings because he talked about CEQA, and it  
22 was set aside, his testimony.

23 And in this particular circumstance, the  
24 Mitigation, Monitoring, and Reporting Program is --  
25 looks to me like prepared by ICF International, a

1 consultant to DWR, who is the petitioner.

2 The question, is for the purposes of this  
3 hearing, are we allowed to show the inadequacy of these  
4 things?

5 MS. MORRIS: May I?

6 CO-HEARING OFFICER DODUC: Yes, Ms. Morris.

7 MS. MORRIS: The mitigation is part of the  
8 EIR, but it does go to the public trust issue. And  
9 there are a number of allegations that are made in all  
10 of these witnesses' testimony regarding the fish  
11 issues.

12 And some of the mitigation, monitoring, and  
13 reporting addresses their concerns. And I'm only  
14 trying to test if they're familiar with them and if  
15 they took that into consideration in their opinion.  
16 That's all I'm trying to do.

17 WITNESS JENNINGS: And -- and this is a bit of  
18 a sore spot because you cut a chunk out of my testimony  
19 and characterized it as I was critiquing the CEQA --  
20 adequacy of the CEQA review.

21 Actually, I had put a qualifier up there and  
22 said I'm not. I'm commenting on the fact that, as a  
23 responsible agency, you have to comply with the EIR but  
24 that the information in the EIR doesn't meet your  
25 burdens under Water Code and the Public Trust Doctrine,

1 that you should have done the EIR. And I phrased it  
2 there, and I talked about the EIR. And you cut that  
3 whole section.

4 And you made clear in Part 1 when you cut out  
5 some sections that you didn't want to hear about the  
6 adequacy of CEQA. And so other than acknowledging,  
7 yes, that's a document in CEQA, I can't discuss the  
8 adequacy of that document in CEQA.

9 CO-HEARING OFFICER DODUC: There seems to be  
10 continuing confusion on that matter. I'm going to turn  
11 to one of the attorneys to clarify that.

12 MR. DEERINGER: So we've addressed this in a  
13 couple of ruling letters, but I guess it bears  
14 reiterating here.

15 The legal adequacy is distinct from whether  
16 the information there is everything that the Board  
17 should be considering. That can be kind of a fine  
18 line.

19 But questions as to what are the State Water  
20 Board's legal obligations as a responsible agency, what  
21 does the EIR and all associate documents, what are they  
22 legally required to include, those are questions beyond  
23 the scope of this Part 2.

24 However, to the extent that parties or their  
25 witnesses want to comment on additional information

1 that they feel was left out of the EIR but that is  
2 relevant to Part 2 key hearing issues, that is fair  
3 game.

4 MS. MORRIS: Chair Doduc, can I withdraw --

5 CO-HEARING OFFICER DODUC: Hold on.

6 Mr. Jennings.

7 WITNESS JENNINGS: Oh, I'm sorry. What?

8 CO-HEARING OFFICER DODUC: You were about to  
9 jump in.

10 WITNESS JENNINGS: Oh, well, I was just going  
11 to say is that -- I mean, obviously, then, I can't talk  
12 about the adequacy of this document. I can -- as to  
13 whether or not -- I mean, it's there. It's a reality.  
14 You have to essentially accept the validity of it. But  
15 I can't talk about the sufficiency of the legal  
16 adequacy of the document, whether it meets the needs.

17 MR. DERRINGER: As I understood what you just  
18 said, I think that's correct.

19 CO-HEARING OFFICER DODUC: Now, you've  
20 confused me.

21 (Reporter interruption)

22 CO-HEARING OFFICER MARCUS: Do you want to try  
23 it?

24 CO-HEARING OFFICER DODUC: That's what the  
25 attorneys are for.

1 CO-HEARING OFFICER MARCUS: I'm just trying to  
2 reread what Mr. Jennings said in the struck-out thing.

3 I thought we explicitly said a couple of times  
4 you could talk about the value of the information, it's  
5 the arguments about whether it meets CEQA; we're not  
6 the CEQA judges. That's another forum. But the actual  
7 information that was in there you could talk about  
8 whether it was adequate.

9 CO-HEARING OFFICER DODUC: Is -- that is what  
10 was --

11 CO-HEARING OFFICER MARCUS: For our purposes,  
12 not for. . .

13 CO-HEARING OFFICER DODUC: Hold on.

14 Mr. Keeling has been waiting patiently, so  
15 let's hear from Mr. Keeling, Ms. Des Jardins, and then  
16 Mr. Jackson. And then, Ms. Morris, I'll give you the  
17 final word.

18 MR. KEELING: Tom Keeling for the San Joaquin  
19 County protestants. The question, the line of  
20 questioning seem to me hopelessly confusing at this  
21 point.

22 Without any with regard to the EIR or  
23 discussions of CEQA or the adequacy of measures in the  
24 Mitigation, Monitoring, and Reporting document, this  
25 line of questioning started with a reference to a line



1 on Page 2 in Mr. Jennings's testimony in which he said  
2 that, among the failures of adaptive-management  
3 programs was the failure of the program to be  
4 predicated on explicit biological performance targets.

5 The question the examiner then asked  
6 Mr. Jennings if he was aware of these other documents  
7 after Mr. Jennings had already said there is no  
8 adaptive management plan and is now asking about  
9 supposed biological objectives and criteria in a  
10 document that is not the adaptive management plan. So  
11 there's a confusion here in this line of questioning  
12 that's hopeless.

13 CO-HEARING OFFICER DODUC: Ms. Des Jardins.

14 MS. DES JARDINS: The stricken testimony on  
15 Page 44 of Mr. Jennings's testimony reads in part, "In  
16 my opinion" --

17 CO-HEARING OFFICER DODUC: If it's struck, you  
18 are now going to read it back into the record? Make  
19 your argument without reading it, please.

20 MS. DES JARDINS: You struck something that  
21 was testimony about the -- whether the Final EIR  
22 provided the essential information the Board needed to  
23 make decisions regarding public trust and public  
24 interest. So this ruling if that -- if that -- whether  
25 the Final EIR provides information regarding

1 unreasonable effects on public interest is something  
2 that he can be cross-examined on is inconsistent with  
3 what was stricken.

4           And I think that, if you allow this line of  
5 cross-examination, you also need to revisit whether it  
6 was appropriate to strike that. And it should be a  
7 single consistent principle. Thank you.

8           CO-HEARING OFFICER DODUC: Mr. Jackson.

9           MR. JACKSON: Well, actually, Ms. Des Jardins  
10 just enunciated what I was going to say.

11           I've been -- I expected that this would come  
12 up today, so I've given it some thought. This  
13 Mitigation, Monitoring, and Reporting Program for the  
14 California WaterFix I'm going to assume, for the  
15 purposes of this discussion, is, to use Mr. Derringer's  
16 words -- and I'm in a CEQA case in which we believe  
17 it's inadequate for the CEQA purposes.

18           But it's clearly inadequate if it's used to  
19 indicate that our testimony about public trust and  
20 public interest and unreasonable effects on fish and  
21 wildlife have to go back to the EIR that we can't  
22 criticize, and we have to just sit here and say, yeah,  
23 that's what it says without being able to show you what  
24 the flaws are.

25           MS. MORRIS: May I respond?

1 CO-HEARING OFFICER DODUC: Yes, please.

2 MS. MORRIS: Thank you. I think a couple  
3 things just happened here.

4 I asked a very specific question that did not  
5 call for a legal conclusion. I was simply asking if  
6 this -- if this document was considered in their  
7 opinions.

8 And their opinions shouldn't be legal  
9 opinions; they should be based on the biology. And  
10 that's what I was asking about in terms of his  
11 requirements for the adaptive management.

12 Then we somehow skewed into CEQA and another  
13 line of objections and striking which I did not ask  
14 questions or I think open the door for that.

15 And to be efficient, I will withdraw the  
16 question. But for the record, I do not think that a  
17 question was confusing, nor do I think that it's been  
18 properly characterized in these arguments. But I'm  
19 happy to withdraw it.

20 CO-HEARING OFFICER DODUC: All right. I  
21 appreciate that, Ms. Morris. However, that's -- in the  
22 interest of efficiency but also to ensure clear clarity  
23 in the transcript, perhaps it would be helpful to  
24 explain, just like you just did, your intention in  
25 bringing up these documents.

1           I will share -- you're not the only one who  
2 have done this. Many attorneys in conducting  
3 cross-examination have just put up a document. And  
4 asked the witness to affirm what they've seen. And  
5 that -- sometimes I question the usefulness of going  
6 through the exercise. But perhaps if you provide some  
7 clarity, some explanation as to the purpose of that, it  
8 might help all of us better understand what it is that  
9 you are trying to follow here.

10           MS. MORRIS: Right. And I did lay a  
11 foundation. I asked if he reviewed this, if he had  
12 reviewed it. And he indicated that he had.

13           And I was simply showing this document, not to  
14 show a specific passage to see if he had read that, but  
15 rather if he knew that it had been adopted and that it  
16 was -- and that, if he had taken it into consideration  
17 when drawing his opinions in the testimony.

18           But I understand your admonition, and I will  
19 strive to not do that.

20           CO-HEARING OFFICER DODUC: All right.

21           WITNESS JENNINGS: Can I just clarify that  
22 yes, the document is there. It was in the EIR, I mean,  
23 that we can't talk about. Obviously we're litigating  
24 the EIR. That's a different story than we have here,  
25 that we don't agree with it.

1           So I can't make any representation here as to  
2 its adequacy, legal sufficiency, or anything there. It  
3 obviously exists.

4           CO-HEARING OFFICER DODUC: Ms. Morris, please  
5 proceed.

6           MS. MORRIS: Thank you.

7           I'm trying to be very efficient.

8           CO-HEARING OFFICER DODUC: So how much time do  
9 you anticipate needing for -- I think you're part way  
10 through Mr. Jennings. You said you had a lot for  
11 Mr. Cannon and some for Mr. Lee.

12           MS. MORRIS: Yes, for Mr. Cannon, I still  
13 think I need the hour because Ms. Ansley has a few  
14 questions as well, and given the pace we're going I  
15 think it would be --

16           CO-HEARING OFFICER DODUC: All right. Let's  
17 go ahead and proceed.

18           MS. MORRIS: Thank you.

19           Mr. Cannon, have you ever testified as an  
20 expert in state court?

21           WITNESS CANNON: No.

22           MS. MORRIS: Have you ever testified as an  
23 expert in federal court?

24           WITNESS CANNON: Not in federal court, only in  
25 federal proceedings like FERC.

1 MS. MORRIS: Thank you. Mr. Cannon, to the  
2 extent you provide citations in your testimony CSPA-204  
3 on Pages 2 to 3 for your conclusions, those are based  
4 on the exhibits you've marked as CSPA-400, CSPA-401,  
5 and CSPA-402 and CSPA 403, correct?

6 WITNESS CANNON: Many of my references are to  
7 specific analyses that I did that included references.

8 MS. MORRIS: But my question was really  
9 specific to Pages 2 and 3 of your testimony and to  
10 those four exhibits, which I do not think you prepared  
11 those analyses.

12 So if you could take a look at those pages of  
13 your testimony and verify that those are the citations  
14 that you're relying on?

15 WITNESS CANNON: So which page of 204?  
16 Page 2.

17 MS. MORRIS: There's no lines, so if you look  
18 at Page 2 through Page 3 is what I'm focused on. And  
19 all of your citations are to CSPA-400, CSPA-401,  
20 CSPA-402, and CSPA-403, correct?

21 WITNESS CANNON: Yes, and I assume those are  
22 Dave Vogel's blog posts in our fisheries blog.

23 MS. MORRIS: And those are blog posts,  
24 correct?

25 WITNESS CANNON: Yes.

1 MS. MORRIS: And to your knowledge, are those  
2 posts peer reviewed?

3 WITNESS CANNON: None of the posts are peer  
4 reviewed.

5 MS. MORRIS: And to your knowledge, are those  
6 posts published in scientific journal anywhere?

7 WITNESS CANNON: No, they're not. But they  
8 are based on scientific journal articles that occurred  
9 over the years that both Dave Vogel and I ascribe to,  
10 and from our own personal experiences and studies, many  
11 of which are in the gray literature.

12 MS. MORRIS: I'm trying to be very precise in  
13 my question, not to cut you off but to be efficient for  
14 time because I have follow-up questions. So it would  
15 be -- I would appreciate it if we could focus on the  
16 question that I'm asking.

17 Looking at Page 2, citing CSPA-400, and that's  
18 the first bullet point.

19 WITNESS CANNON: Yes.

20 MS. MORRIS: That's the basis of your opinion  
21 in that -- in those two bullets, correct?

22 WITNESS CANNON: Yes.

23 MS. MORRIS: Thank you. And that document  
24 CSPA-400, it states, "All of the options put forth were  
25 crappy, really crappy, for fish protection," correct?

1           WITNESS CANNON: Those were Dave Vogel's words  
2    yes.

3           MS. MORRIS: Do you know if the author has  
4    specific field data on suitability of the intake  
5    locations?

6           WITNESS CANNON: He very much does.

7           MS. MORRIS: And if you could turn to that  
8    document then, CSPA 400.

9           WITNESS CANNON: All right.

10          MS. MORRIS: And could you show me where in  
11   that document it cites the data that you just stated is  
12   there?

13          WITNESS CANNON: I can tell you right now  
14   those are probably based on Dave's personal opinions  
15   and my own recognition of those and support for those  
16   opinions based on our experiences with entrainment and  
17   impingement in the Sacramento River.

18          MS. MORRIS: I'm sorry. I'm slightly confused  
19   because I asked you if the author had specific field  
20   data on suitability of intake locations, and you said  
21   yes. And then I asked you to show me where it was, and  
22   you're saying it's personal experience. Is that  
23   data --

24          WITNESS CANNON: No, those are his 30 years as  
25   a federal biologist on the Sacramento River, relative



1 to all the major diversions that he helped screen based  
2 on many, many surveys of fish in those locations, like,  
3 GCID.

4 MS. MORRIS: Okay. Well, could you show me  
5 then on CSPA-400 where I can find the data that it is  
6 based on, these field data that you said is there? I  
7 can't find --

8 WITNESS CANNON: These are his opinions in the  
9 post. So the reference is to his opinion, not to a  
10 specific study.

11 MS. MORRIS: Okay. So you agree that in  
12 CSPA-400 there is no data that is provided, correct?

13 WITNESS CANNON: That's correct.

14 MS. MORRIS: Okay. Are you aware what the  
15 fish facilities technical team report considered the  
16 locations of intakes 2, 3, and 5 to be moderate to good  
17 based on aerial photographs and field bases  
18 cross-sectional data of the sites?

19 WITNESS CANNON: Yes. And Dave and I both  
20 disagree with that conclusion.

21 MS. MORRIS: On Page 2, could you turn your  
22 attention -- of your testimony CSPA-204, if I could  
23 direct you to the bullet that has the bold  
24 "Entrainment."

25 WITNESS CANNON: Yes.

1 MS. MORRIS: And that section, when you say  
2 "Small fish succumb," do you mean become impinged?

3 WITNESS CANNON: Small fish --

4 MS. MORRIS: -- succumb.

5 WITNESS CANNON: Get crowded at the intake  
6 structure because they're going with the flow, and the  
7 flow is going into the screens.

8 MS. MORRIS: So in other words, they get  
9 impinged.

10 WITNESS CANNON: Not necessarily. They just  
11 may be in large concentrations, hanging out until such  
12 time as they get impinged or pass.

13 MS. MORRIS: Okay. And in coming to that  
14 conclusion, did you consider the velocities that would  
15 occur in the channel of the diversion facility relative  
16 to fish swimming performance?

17 WITNESS CANNON: Yes, I did. And some of  
18 those velocities are zero, like in the turning of the  
19 tides.

20 MS. MORRIS: Okay. Great. So --

21 WITNESS CANNON: There's nothing -- and  
22 nothing in the document that says they won't divert at  
23 the turning of the tides.

24 MS. MORRIS: Again, I'm going to try to ask  
25 the question, and if you have further follow-up, your

1 counsel can ask you.

2           So what I'd like you to do is, you said you  
3 did, in drawing that conclusion, base it on velocities  
4 in the channel. So I would like for you to point to me  
5 in CSPA-204 where you have that analysis and I can find  
6 the data that you're relying on.

7           WITNESS CANNON: I didn't present the data  
8 204.

9           MS. MORRIS: Did you present it in another  
10 exhibit in this proceeding?

11           WITNESS CANNON: No, I did not.

12           MS. MORRIS: At this time, I'd like to lodge  
13 an objection to the opinions related to -- on that  
14 first bullet on CSPA-204, Page 2, regarding the North  
15 Delta intakes on the basis that the witness has  
16 provided only citations to a blog post by Mr. Vogel,  
17 CSPA-400, and has not provided the analysis to support  
18 the fact that he's looked at velocities at that  
19 particular location.

20           CO-HEARING OFFICER DODUC: Mr. Jackson.

21           MR. JACKSON: Yes. Mr. Cannon's curriculum  
22 vitae he indicates that he's worked in the Delta for 30  
23 years. He's worked for the broadest section of the  
24 California water community that I've seen, including  
25 the State Water Contractors, including MWD, including

1 DWR.

2 CO-HEARING OFFICER DODUC: Mr. Jackson, if I  
3 understand Ms. Morris' objection, it wasn't based on  
4 his qualifications but that his analysis was not made  
5 available.

6 Did I understand that correctly, Ms. Morris?

7 MS. MORRIS: That's correct.

8 MR. JACKSON: This testimony was to indicate  
9 what the opinions -- working down the line through the  
10 five people, what the opinions of CSPA was. And it's  
11 based upon everything we filed.

12 MS. MORRIS: Could I understand, then, where  
13 anybody in this panel has presented velocities in the  
14 channels at the locations of the intakes? Because I'm  
15 not able to locate it.

16 WITNESS CANNON: I can tell you, I'm very  
17 familiar with the velocities in the channel, velocities  
18 at most of the Delta intakes. And I'm very familiar  
19 with the literature, such as UC Davis on how each fish  
20 responds to velocities.

21 And I can also tell you that the scale of this  
22 project is far beyond all of that technical  
23 information.

24 CO-HEARING OFFICER DODUC: All right.

25 Ms. Morris, we will consider your objection in weighing

1 the evidence.

2 MS. MORRIS: Thank you.

3 Mr. Cannon, would you consider a  
4 4.4-centimeter fish to be small?

5 WITNESS CANNON: 4.4 centimeters, 25  
6 centimeters to an inch? Yes, it's either a larvae or  
7 an early juvenile.

8 MS. MORRIS: Okay. Are you aware of the  
9 laboratory -- you just testified that you're familiar  
10 with published reports regarding this issue regarding  
11 fish behavior and swimming with certain velocities,  
12 correct?

13 WITNESS CANNON: Yes.

14 MS. MORRIS: So are you aware of the  
15 laboratory study conducted by Swanson, et al., 2004, at  
16 UC Davis to inform the potential effects of fish  
17 screens?

18 WITNESS CANNON: Yes.

19 MS. MORRIS: Great. Could you please pull up,  
20 Mr. Baker, the document I labeled Cannon 1.

21 MR. BAKER: Did you mean Cannon 2?

22 MS. MORRIS: Apparently I am not very good at  
23 labeling. No, I think it just got left off. We'll  
24 pull it back up, and we'll come back to this.

25 Are you aware that the NMFS CWF Biological

1 Opinion includes sweeping velocity incidental take  
2 limit that's twice the approach velocity?

3 WITNESS CANNON: Yes.

4 MS. MORRIS: And could you please pull up,  
5 Mr. Baker, Cannon 2-B.

6 And this is State Water Resources Control  
7 Board 105, the U.S. Fish and Wildlife Biological  
8 Opinion. And the second page is -- should be 252. And  
9 looking at this table, 2-290, doesn't this restrict the  
10 North Delta operations to an approach velocity of  
11 0.2 fps, or feet per second?

12 WITNESS CANNON: Yes.

13 MS. MORRIS: Going back to NMFS -- I'm sorry,  
14 going back to -- according to the BiOps, an approach  
15 velocity of 0.2 feet per second and a sweeping velocity  
16 of 0.4 feet per second are protective of smelt and  
17 salmon, correct?

18 WITNESS CANNON: Is that what it says? Is  
19 that your question?

20 MS. MORRIS: The finding in the Biological  
21 Opinion, is it?

22 WITNESS CANNON: That's what it says in the  
23 Biological Opinion.

24 MS. MORRIS: Thank you. Are you familiar with  
25 peer-reviewed scientific literature characterizing --

1 sorry.

2 Are you familiar -- strike that.

3 Are you familiar with peer-reviewed scientific  
4 literature characterizing the hydraulics which can draw  
5 juvenile fish across a wide channel toward a diversion  
6 facility located on a bank?

7 WITNESS CANNON: In general, yes. There's  
8 many such studies.

9 MS. MORRIS: But you didn't cite any of those  
10 studies in drawing your opinions in this proceeding,  
11 did you?

12 WITNESS CANNON: Because none of them are  
13 relevant to the Sacramento River at those three screen  
14 locations.

15 MS. MORRIS: Would you consider it to be  
16 important -- strike that.

17 Are you aware that fish screening experts for  
18 both state and federal fish agencies reviewed and  
19 approved design of the California WaterFix diversions?

20 WITNESS CANNON: Yes, and their conclusion was  
21 it met those criteria there. It didn't say it was  
22 protective.

23 MS. MORRIS: So your testimony is that the  
24 Biological Opinions didn't say that the criteria was  
25 protective?

1 WITNESS CANNON: That's correct.

2 CO-HEARING OFFICER DODUC: Ms. Meserve.

3 MS. MESERVE: An objection because the  
4 question misstates the evidence. In fact, the  
5 Biological Opinion from the Fish and Wildlife Service  
6 does not permit the construction and operation of the  
7 project, so I think that was misleading.

8 CO-HEARING OFFICER DODUC: I'm confused by  
9 that.

10 MS. MESERVE: To explain more fully, the Fish  
11 and Wildlife Service Biological Opinion is programmatic  
12 in nature with respect to the project, so the way the  
13 question was asked was misleading.

14 CO-HEARING OFFICER DODUC: Okay.

15 MS. MORRIS: Did you want me to rephrase?

16 CO-HEARING OFFICER DODUC: Sure.

17 MS. MORRIS: I simply asked if the Biological  
18 Opinion criteria were protective, not -- it wasn't to  
19 operations.

20 WITNESS CANNON: And I stated that they were  
21 not protective.

22 MS. MORRIS: I'm going to look at your  
23 testimony on Page 3, and you cite to CSPA-404.

24 WITNESS CANNON: Page 3?

25 MS. MORRIS: And then I'm looking at -- and



1 Mr. Baker is kindly pulling it up -- the basis for it,  
2 which is CSPA-404. CSPA-404 is a blog post written by  
3 you, correct?

4 WITNESS CANNON: Yes.

5 MS. MORRIS: And your testimony and use of  
6 this figure seems to indicate that, even with a Delta  
7 outflow of more than a 100,000 cfs, proposed total  
8 diversions, which are shown in the white line at the  
9 bottom, would in your judgment not be reasonably  
10 protective, correct?

11 WITNESS CANNON: Yes. This figure is similar  
12 to Mr. Miller's figure on 2016. Both of them show  
13 that, with WaterFix, you get another million acre-feet  
14 almost out of the system, as you would this year if you  
15 had WaterFix online.

16 The restriction here is simply OMRs.

17 MS. MORRIS: That wasn't my question.

18 WITNESS CANNON: That's my answer.

19 MS. MORRIS: Let me try this again.

20 Is it your opinion that, even with more than  
21 100,000 cfs outflow, with the proposed diversions which  
22 are shown in the white line, that even then, that would  
23 not be reasonably protective?

24 MR. JACKSON: I'm going to object on the  
25 grounds that it's vague and uncertain. Are we talking

1 about a particular species here?

2 MS. MORRIS: I'm referring directly to his  
3 testimony on Page 3. And I directed it to that.  
4 That's the basis of his opinion is this graphic and  
5 citation.

6 WITNESS CANNON: I can answer that.

7 CO-HEARING OFFICER DODUC: Okay.

8 WITNESS CANNON: With all these years, these  
9 are below normal years. This is uncontrolled flow that  
10 was always destined for the Bay. Now you're talking  
11 about taking a million acre-feet out of uncontrolled  
12 flows that was always dedicated to the Bay.

13 If you want to do that, that's fine, but it  
14 was not ever to be touched in all the proceedings I  
15 have been involved with for the last 30 years. The  
16 Board was not going to allow more uncontrolled flow to  
17 be taken out of the Delta inflow by new projects.

18 This is not guaranteed. There's not a water  
19 right for this. This is uncontrolled flow that goes  
20 into the Bay from tributaries. And most of the flows  
21 are being stored in reservoirs, 90 percent of it.

22 This is some from Battle Creek, Cosumnes  
23 River. That's where this 100,000 came from. Deer  
24 Creek --

25 CO-HEARING OFFICER DODUC: So, I'm sorry.

1 Your answer, then, to Ms. Morris is you do not believe  
2 it is protective?

3 WITNESS CANNON: Do I believe that the 10,000  
4 export and the extra 100,000 feet is protective of the  
5 Bay? Absolutely not.

6 MS. MORRIS: Thank you. That was the  
7 question.

8 Looking at your testimony on Page 4, and I'll  
9 just wait until -- sorry. It's CSPA-204, Page 4.

10 Looking at the first -- the first bullet that  
11 starts, "The WaterFix." In that statement, what rivers  
12 are you referring to?

13 WITNESS CANNON: All the rivers and all the  
14 storage.

15 MS. MORRIS: In the whole State of California,  
16 in the whole United States?

17 WITNESS CANNON: Central Valley only,  
18 tributaries to the Delta.

19 MS. MORRIS: So -- so you're not including  
20 Trinity?

21 WITNESS CANNON: In that specific example, the  
22 Trinity would be included because it does lead to the  
23 Delta in its diversion through the Keswick Reservoir.

24 MS. MORRIS: So Trinity, Feather, correct?

25 WITNESS CANNON: All tributary rivers leading

1 to the Delta.

2 MS. MORRIS: Sacramento River?

3 WITNESS CANNON: All.

4 MS. MORRIS: American River?

5 WITNESS CANNON: Keep going. All of them,  
6 yes.

7 MS. MORRIS: Are you aware that there are  
8 rules already established which govern reservoir  
9 storage and reservoir releases for the Trinity,  
10 Feather, and Sacramento Rivers?

11 WITNESS CANNON: Every reservoir has an  
12 operating criteria and standard procedures that are  
13 generally followed.

14 MS. MORRIS: So was it incorrect, then, in  
15 your testimony to state that there were no rules?

16 WITNESS CANNON: The WaterFix provides no  
17 rules for WaterFix use of that storage. That's what I  
18 was referring to.

19 MS. MORRIS: But the WaterFix does incorporate  
20 all of the existing requirements.

21 WITNESS CANNON: That's fine, but it has also  
22 a capacity to use all of that storage in a different  
23 way.

24 MS. MORRIS: I want to take a look at your  
25 testimony on Page 5 and draw your attention to -- I

1 apologize. I have to find it without the line numbers.

2 Looking towards the bottom, under the first  
3 bullet regarding migrating young salmon.

4 WITNESS CANNON: Yes.

5 MS. MORRIS: Is your contention that NMFS is  
6 incorrect and that South Delta velocities will not be  
7 positively influenced by the project?

8 WITNESS CANNON: That's not my contention, no.  
9 In this statement, it says "North Delta migratory  
10 channels."

11 MS. MORRIS: I'm sorry. It's -- there's a  
12 number of bullets here, so I directed you to the wrong  
13 one. It's the second open bullet, if you could call it  
14 that.

15 WITNESS CANNON: The last bullet?

16 MS. MORRIS: Sure. Is your contention in that  
17 statement that NMFS is incorrect and that South Delta  
18 velocities will not be positively influenced by the  
19 project?

20 WITNESS CANNON: There are times when they  
21 would, and there are times when they would not. It's  
22 very complicated.

23 MS. MORRIS: But you say that NMFS conclusion  
24 that there would be a positive change in channel  
25 velocities in the south Delta is unfounded.

1           WITNESS CANNON: Because I found many examples  
2 when it wouldn't do that.

3           MS. MORRIS: Okay. Can you give me examples  
4 of when it would be and when it wouldn't be, in your  
5 opinion, and what is it based on?

6           WITNESS CANNON: The velocities in the South  
7 Delta channels are mostly tidal velocities. The amount  
8 of exports only affect OMRs in the region of influence  
9 in Old and Middle River. There are times when they  
10 would operate the South Delta channels in the summer  
11 differently than they do now. They may take more  
12 water.

13          MS. MORRIS: Couple questions following up.  
14 What data and analysis did you use for the basis of  
15 that statement?

16          WITNESS CANNON: A knowledge of the flows and  
17 velocities in every month of every year for the last 30  
18 years.

19                 Knowing there are times -- I know how WaterFix  
20 is intended to work with the North Delta diversion.  
21 And I know how the South Delta diversions work with and  
22 without a North Delta diversion operating.

23                 In the summer, the South Delta diversions  
24 would still be under the existing controls and existing  
25 conditions, and there would be no North Delta

1 diversion.

2 MS. MORRIS: What were the flows in October of  
3 1981?

4 WITNESS CANNON: 1981 was the dry year, and  
5 it's a very special year in my mind because it wiped  
6 out the Delta smelt because the operations in October  
7 of 1981 -- I don't know the daily flows by memory, but  
8 it was a -- 1981 was a dry year. October would have  
9 been in 1982 water year, and there were storms starting  
10 and the wet year of 1982 probably.

11 MR. MIZELL: If I could just interrupt you,  
12 Mr. Cannon, that wasn't our question.

13 We were following up on your statement that  
14 you knew the flows in every month and every year. And  
15 that was the basis of your statement.

16 We were simply asking if you knew the flows in  
17 the month of October of 1981.

18 WITNESS CANNON: I just answered that.

19 MR. MIZELL: And you --

20 WITNESS CANNON: To the best of my ability.

21 CO-HEARING OFFICER DODUC: Hold on. Hold on.

22 Mr. Jackson.

23 MR. JACKSON: I thought he answered the  
24 question.

25 CO-HEARING OFFICER DODUC: He did.

1 MS. MORRIS: I'm ready to move on.

2 CO-HEARING OFFICER DODUC: Yes, please.

3 MS. MORRIS: You just mentioned OMR

4 Mr. Cannon.

5 WITNESS CANNON: Yes.

6 MS. MORRIS: Are you familiar with the

7 calculation of the OMR flow standard?

8 WITNESS CANNON: Yes.

9 MS. MORRIS: Does that standard include

10 Sacramento inflow to the Delta?

11 WITNESS CANNON: It strictly refers to the

12 flow in Old and Middle River.

13 MS. MORRIS: I want to turn your attention to

14 Page 5 of your testimony.

15 WITNESS CANNON: That's where we were.

16 MS. MORRIS: And looking at the first bullet,

17 you claim that salmon would be subject to greater tidal

18 reverse flows, correct?

19 WITNESS CANNON: In the North Delta channels,

20 yes.

21 CO-HEARING OFFICER DODUC: Ms. Morris, where

22 are you on this page?

23 MS. MORRIS: Oh, sorry. It's the first, the

24 black bullet -- or solid one I should probably call it.

25 Great. And then could -- I'm sorry,



1 Mr. Baker, to be hopping around here, but could you  
2 please pull up the document I've mark as Cannon 3.  
3 Hopefully I marked it right this time.

4 And, again, this is the ITP for the California  
5 WaterFix which is State Water Resources Control Board  
6 107. And could you scroll to the second page. And  
7 this is Page 187.

8 And if I could direct your attention to the --  
9 you can take a look at 9.9.4.1. And looking at this  
10 ITP, isn't it true that it includes criteria that the  
11 North Delta operations not increase the frequency,  
12 magnitude, and duration of reverse flow events in the  
13 Sacramento River at Georgiana Slough?

14 WITNESS CANNON: That's what it says.

15 MS. MORRIS: Turning to Page 6 of your  
16 testimony at the top. I'm looking at that upper --  
17 before the first bullet, in that first couple sentences  
18 on that page. When you refer to South Delta exports,  
19 what do you mean?

20 WITNESS CANNON: South Delta exports.

21 MS. MORRIS: I understand that you're very  
22 familiar with the projects, so do you mean the pumping  
23 by the CVP and the SWP in the South Delta?

24 WITNESS CANNON: Generally it's just the two  
25 of them. Sometimes it includes other water districts.

1 Depends on which table you're reading and the Bureau of  
2 Reclamation tables.

3 MS. MORRIS: Okay. And for purposes of the  
4 your opinion in your testimony here, when you're  
5 referring to South Delta exports, are you including  
6 those other sources or just CVP and SWP exports?

7 WITNESS CANNON: All would include all South  
8 Delta exports because they all have the rules and they  
9 all affect the inflows.

10 MS. MORRIS: What other South Delta exports  
11 besides CVP and SWP have rules?

12 WITNESS CANNON: Contra Costa Water District.

13 MS. MORRIS: So is it because you include  
14 Contra Costa Water District in this that you're stating  
15 that existing South Delta exports would continue at the  
16 same level?

17 WITNESS CANNON: I believe from the  
18 information I've read in the document and EIS and the  
19 Biological Opinions that the South Delta exports, SWP  
20 and CVP would remain virtually under same rules and  
21 would be virtually the same as they are now or could be  
22 the same.

23 MS. MORRIS: So in that statement, you are not  
24 including Contra Costa's diversion?

25 WITNESS CANNON: It's minor and doesn't --

1 it's not relevant.

2 MS. MORRIS: Okay. Are you aware that there's  
3 a preference for diverting from the North Delta  
4 diversions under California WaterFix from November to  
5 June?

6 WITNESS CANNON: There's the addition of the  
7 North Delta diversions, from what I could tell.

8 MS. MORRIS: That wasn't my question. And if  
9 you don't know, it's absolutely okay.

10 Are you aware that there's a preference for  
11 pumping in that time period in the North Delta versus  
12 the South Delta?

13 WITNESS CANNON: If there were a specific time  
14 when they had a capacity of only pumping 6,000 cfs for  
15 whatever reason, an EI, for whatever reason, there  
16 would be times when there would be preference for one  
17 or the other.

18 MS. MORRIS: And you have testified that  
19 you're aware that there is more restrictive conditions  
20 in the South Delta under California WaterFix, correct?

21 WITNESS CANNON: I don't think there are.

22 MS. MORRIS: You don't think that there's more  
23 OMR -- more stringent OMR requirements?

24 WITNESS CANNON: No. The OMR applies to  
25 existing OMRs, which do not have a North Delta

1 diversion. Minus 5,000 OMR with a North Delta  
2 diversion stacked on top of it is a completely  
3 different situation and far worse than the OMR without  
4 the North Delta diversion.

5 MS. MORRIS: I'm not sure that that was  
6 responsive to my question.

7 I'd like to look at the next bullet on Page 6  
8 that begins with, "Protecting the first winter pulse  
9 flow."

10 Are you aware that the California WaterFix ITP  
11 requires all pulses of winter-run and spring-run  
12 Chinook salmon to be protected?

13 WITNESS CANNON: The figure you had up earlier  
14 didn't have it protected, so I'm not aware that it is  
15 protective under all circumstances.

16 MS. MORRIS: Looking at the third bullet on  
17 Page 6 of your testimony, regarding the low salinity  
18 zone, what is the basis -- what data -- and I'm  
19 speaking specifically on this question.

20 What data did you rely on to draw this  
21 conclusion?

22 WITNESS CANNON: The percent, you mean?

23 MS. MORRIS: The whole bullet.

24 WITNESS CANNON: Okay. It's a book. There's  
25 a lot of information. There's lots of arguments.

1 There's lots of testimonies. There's lots of papers.

2 And this -- my opinion here is that the Delta  
3 inflow and outflow rules are insufficient to maintain  
4 the productivity of a low salinity zone and zooplankton  
5 and everything else in the Delta without that extra  
6 inflow.

7 MS. MORRIS: Mr. Cannon, I can read your  
8 opinion.

9 CO-HEARING OFFICER DODUC: Hold on. One at a  
10 time for the court reporter.

11 WITNESS CANNON: Restate the question.

12 MS. MORRIS: Well, I'm going to ask a  
13 different question, which is you just said "it's a  
14 book," but I'm interpreting that that you did not mean  
15 that literally, "a book," correct?

16 WITNESS CANNON: There are many books on the  
17 subject.

18 MS. MORRIS: Okay. I didn't see any citations  
19 to support this. So did you provide any citations or  
20 data to support this statement? And if so, where can I  
21 find it?

22 WITNESS CANNON: This is my opinion based on  
23 30 years of expertise on the Delta.

24 MS. MORRIS: And that's the sole basis of this  
25 opinion?

1           WITNESS CANNON: No. Review and analysis of  
2 30 years of data on the Delta brought me to this  
3 conclusion.

4           MS. MORRIS: And where can I find that  
5 analysis?

6           WITNESS CANNON: I tried to put a lot of it in  
7 my posts, which were presented as exhibits.

8           MS. MORRIS: But there doesn't appear to be a  
9 citation for any documentation on this particular  
10 bullet point and opinion, correct?

11           WITNESS CANNON: There are many citations but  
12 they are not my opinions.

13           MS. MORRIS: I would like to move to strike  
14 this bullet on this -- one, two, three -- third bullet  
15 down on CSPA-204 on the basis it's an opinion without  
16 providing any data.

17           I'm not able to question the underlying basis  
18 of these opinions without having any analysis provided  
19 to me.

20           CO-HEARING OFFICER DODUC: Goes to weight,  
21 Ms. Morris.

22           MR. DEERINGER: I'm sorry. Just for the  
23 record, could someone please provide the page number.

24           MS. MORRIS: Sorry, CSPA-204, Page 6 -- one,  
25 two -- third bullet that begins "The low salinity

1 zone."

2 MR. DEERINGER: Thank you.

3 MS. MORRIS: In making that conclusion, are  
4 you referring to any particular months?

5 WITNESS CANNON: I'm referring to the  
6 statistics that Bill presented earlier in his testimony  
7 that shows over the last 30 years there's been  
8 98 percent reduction in fish. And these are my  
9 conclusions of why there is such a reduction in the  
10 fish.

11 MS. MORRIS: And my question, to be clear, was  
12 are you referring to any particular months in that  
13 opinion, or are you referring to all of them?

14 WITNESS CANNON: No, there's actually been  
15 months and years and some years that -- where the D1641  
16 has improved conditions and helped fish.

17 The 16 -- 1485 had the same thing. Both had  
18 provisions that made it worse.

19 MS. MORRIS: If we could pull up, Mr. Baker,  
20 please, Cannon 4. This is an excerpt from the State  
21 Water Resources Control Board Exhibit 108, and the  
22 second page on this excerpt is Page 149.

23 Looking at the chart on the bottom left, I'm  
24 just making sure I have the right chart. Looking at  
25 the chart on the bottom left -- and, again, I'm sorry.

1 I should lay some foundation.

2 This is looking at the Sacramento River  
3 downstream of the North Delta intakes, looking at -- if  
4 we could scroll to the top -- Sac River, North Delta  
5 diversions? Thank you. Could you go back to the  
6 bottom?

7 Okay. Would you agree that the blue line,  
8 which is the No Action Alternative, and the CWF, the  
9 red line, Revised Alt 4, are quite similar?

10 WITNESS CANNON: No.

11 MS. MORRIS: Okay. Looking at Page 8 of your  
12 testimony and, in particular, on the bullet -- the  
13 first bullet where it begins, "Neither predator," that  
14 last sentence of that bullet, what evidence did you  
15 rely upon to reach your conclusion that the project  
16 would lead to increased fish entrainment in Three Mile  
17 Slough?

18 WITNESS CANNON: Just Three Mile Slough?

19 MS. MORRIS: Yes.

20 WITNESS CANNON: With South Delta constant,  
21 exports constant and lower flow passing Rio Vista, the  
22 draw from the South Delta will increase through Three  
23 Mile Slough.

24 MS. MORRIS: And that's the basis of your  
25 opinion?



1           WITNESS CANNON: I know that to be the case by  
2 reviewing hydrology data for that location over many,  
3 many years.

4           MS. MORRIS: Mr. Cannon, I'm only trying to  
5 ask you a question. And my question was is that the  
6 basis of your opinion?

7           WITNESS CANNON: No, it's what I answered, the  
8 analysis of 30 years of hydrology data in that  
9 location.

10          MS. MORRIS: Is your answer the basis of your  
11 opinion? That's the question.

12          WITNESS CANNON: Is the answer the basis of my  
13 opinion? That's your question?

14          MS. MORRIS: Yes.

15          WITNESS CANNON: What answer?

16          MS. MORRIS: The answer that you just  
17 provided. I asked you to basis of your opinion under  
18 CSPA-204 for the last sentence regarding specifically  
19 Three Mile Slough. You gave an answer. That answer  
20 isn't necessarily contained in those roots here, and  
21 I'm trying to understand if that's the basis of your  
22 opinion on --

23          WITNESS CANNON: My opinion, the basis of my  
24 opinion is the fact that negative flows in Three Mile  
25 Slough go up when Rio Vista flows go down, holding

1 South Delta exports constant.

2 MS. MORRIS: Are you familiar with peer  
3 reviewed publication by Cavallo et al., 2015 that  
4 looked at how Sacramento inflows influenced fish  
5 routing at Delta junctions?

6 WITNESS CANNON: Yes.

7 MS. MORRIS: I just need one second to make  
8 sure. I need to wrap up.

9 Okay. I have one more line of questioning.

10 Looking at Page 12 of your testimony and at  
11 the top, do you see where it says -- I'm sorry, this is  
12 CSPA-204. It says "Massive fish losses." Do you see  
13 that statement?

14 WITNESS CANNON: Yes.

15 MS. MORRIS: And you cite for that CSPA-412,  
16 correct?

17 WITNESS CANNON: No, I cite that there's a  
18 more extensive discussion of that subject at 412.

19 MS. MORRIS: So you don't rely on 412 to draw  
20 that opinion?

21 WITNESS CANNON: I draw that opinion based on  
22 facts of knowing what salvage and fish losses are in  
23 the Delta over the last 50 years.

24 MS. MORRIS: Let's look at CSPA-412 which you  
25 cite in your testimony. And if we could scroll to the

1 bottom of the first page. That's perfect.

2 Looking at the cite for CSPA-412 at the  
3 bottom, on Footnote No. 5 -- do you see the footnotes  
4 there?

5 WITNESS CANNON: Yes.

6 MS. MORRIS: Doesn't that indicate that this  
7 statement is based on an administrative draft BDCP  
8 entrainment analysis from early 2012?

9 WITNESS CANNON: One of the citations, yes.

10 MS. MORRIS: But it is in fact the citation  
11 for the statement that, "In fact, BDCP modeling  
12 suggests that exports and fish entrainment from South  
13 Delta diversions could potentially increase in certain  
14 water year types and for critical life stages of  
15 certain species," correct?

16 WITNESS CANNON: That was a further discussion  
17 of the topic. It wasn't a citation as to background on  
18 my decision.

19 MS. MORRIS: Are you aware that the  
20 entrainment analysis based on BDC alternative was with  
21 five North Delta intakes?

22 WITNESS CANNON: Yes.

23 MS. MORRIS: And are you aware that the  
24 entrainment analysis that is cited in CSPA-412 was  
25 based on a different operational scenario than CWF H3+?

1 WITNESS CANNON: Yes.

2 MS. MORRIS: What operational scenario was it  
3 based on?

4 WITNESS CANNON: My opinion?

5 MS. MORRIS: The operational criteria is  
6 usually set forth in the document. And you answered  
7 that it was based on something other than CWF H3+. And  
8 I'm asking if you know what operational scenario was  
9 used in that analysis.

10 WITNESS CANNON: I only know a general range  
11 of operational criteria because a specific one is never  
12 presented.

13 MS. MORRIS: So you're not familiar with that  
14 the Department was -- and the Biological Opinions are  
15 based on the operating criteria of H3+?

16 WITNESS CANNON: They're based on the model  
17 runs on H3+.

18 MS. MORRIS: I have no further questions, so  
19 I'll turn it over to Ms. Ansley.

20 Thank you, Mr. Cannon.

21 CROSS-EXAMINATION BY MS. ANSLEY

22 MS. ANSLEY: Good afternoon. My name is  
23 Jolie-Anne Ansley with the Department of Water  
24 Resources.

25 My question questions are for Dr. Lee. And

1 there are just a couple questions.

2 Dr. Lee, I believe we spoke about this  
3 testimony, in large part, in Part 1.

4 Dr. Lee, your testimony concludes that  
5 reductions in South Delta exports under the California  
6 WaterFix will reduce the amount of Sacramento River  
7 water drawn into Central Delta; is that correct?

8 WITNESS LEE: Yes.

9 MS. ANSLEY: And you conclude that such  
10 reductions are caused by -- and you conclude that such  
11 reductions caused by this decreased pumping will reduce  
12 the dilution of San Joaquin River water in the Central  
13 Delta that normally occurs as a result of the pumping?

14 WITNESS LEE: Yes.

15 MS. ANSLEY: On Page 2 of your testimony -- do  
16 you have a copy of it in front of you, sir? And we can  
17 bring it up on the screen. It's CSPA-206.

18 CO-HEARING OFFICER DODUC: And Ms. Ansley, I'm  
19 going to ask you to slow down.

20 MS. ANSLEY: Okay.

21 Okay. And there are no line numbers, so I'll  
22 do my best to point us to the right place. I'm looking  
23 at your second bolded paragraph. And on this page, you  
24 state that the diversion of Sacramento River water  
25 around the Central Delta will significantly reduce the

1 dilution of San Joaquin River water in the Central  
2 Delta. Do you see that?

3 WITNESS LEE: Yes.

4 MS. ANSLEY: And what was your basis for your  
5 assertion that the reduction would be significant?

6 WITNESS LEE: The fact that you're pulling up  
7 to -- I think it's 9,000 cfs of Sacramento River water  
8 out of the Central Delta area, so you're going to have  
9 significant impacts to dilution because you don't have  
10 the dilution from Sacramento River water to the same  
11 extent as when there is no WaterFix.

12 MS. ANSLEY: And was there a particular  
13 threshold of significance that you were looking at in  
14 terms of dilution?

15 WITNESS LEE: No.

16 MS. ANSLEY: Did you do any modeling or  
17 analysis of the change in fractional share of San  
18 Joaquin River water versus Sacramento River water in  
19 the Central Delta?

20 WITNESS LEE: No, I was looking for that in  
21 the review of the DWR and USBR reports and didn't find  
22 it. It's --

23 MS. ANSLEY: You're --

24 WITNESS LEE: -- one of the bottom-line issues  
25 that has to be addressed.

1 MS. ANSLEY: Pardon me. I didn't mean to cut  
2 off.

3 You're not aware of the volumetric  
4 fingerprinting analysis conducted by the DWR?

5 WITNESS LEE: I note the fingerprinting  
6 analysis, yes.

7 MS. ANSLEY: On Pages 2 to 3 of your  
8 testimony, looking at the bottom of Page 2, the last  
9 paragraph there and then I believe carrying over to  
10 Page 3, you state that the consideration of water  
11 quality impacts at the proposed WaterFix was very  
12 narrowly defined to consider only meeting minimum  
13 requirements of D1641. Do you see that, sir?

14 WITNESS LEE: Yes, I have.

15 MS. ANSLEY: Is it your understanding that the  
16 water quality standards of D1641 were established for  
17 the protection of beneficial uses?

18 WITNESS LEE: Only to a very limited extent.

19 MS. ANSLEY: And if you'd look at -- I think  
20 if you look at the top of Page 3, you go on to state  
21 that this analysis by the DWR is not adequate because  
22 it does not consider the wide range of existing and  
23 potential pollutants that could impair water quality in  
24 areas of the South and Central Delta; is that correct?

25 WITNESS LEE: Yes.

1 MS. ANSLEY: And we may have spoken about it  
2 before, but you are familiar with Chapter 8, the water  
3 quality analysis of the Final EIR; is that correct,  
4 Dr. Lee?

5 WITNESS LEE: And of the BDCP, which predated  
6 the EIR/EIS. I commented on it.

7 MS. ANSLEY: You commented on the BDCP Draft  
8 EIR?

9 WITNESS LEE: And the Draft EIR/EIS and the  
10 Final. I provided comments and references to those  
11 comments in my testimony.

12 MS. ANSLEY: And just to make sure that I'm  
13 clear, what I'm asking if you're -- which chapter we're  
14 talking about because I understand it's been a long  
15 process.

16 I'm talking about the FEIR Chapter 8 that was  
17 issued in 2016. You're familiar with that chapter; so  
18 we have no misunderstanding?

19 WITNESS LEE: Chapter 8, yes, in both the  
20 documents.

21 MS. ANSLEY: Okay. Isn't it true that  
22 Chapter 8 of the FEIR investigated a wide variety of  
23 water quality constituents and not just those  
24 constituents that have standards set by D1641?

25 WITNESS LEE: It made comments about this but



1 didn't investigate them and certainly didn't provide  
2 any guidance as to what would be the impact of these  
3 constituents on water quality in the Central Delta.

4 MS. ANSLEY: Are you aware of the -- and are  
5 you here talking about the unrecognized and unregulated  
6 pollutants that you reference in your testimony?

7 WITNESS LEE: And as well as the State Water  
8 Board listed pollutants.

9 MS. ANSLEY: And of the pollutants that you  
10 specifically talk about in your testimony, which  
11 pollutants would that be that you feel that the DWR did  
12 not adequately analyze?

13 CO-HEARING OFFICER DODUC: Mr. Jackson.

14 MR. JACKSON: I love the question. I just  
15 wanted to highlight the question because I don't want  
16 his answer stricken because it's talking about the  
17 adequacy of the EIR.

18 MS. ANSLEY: Well, I won't ask to move to  
19 strike until he answers my question.

20 CO-HEARING OFFICER DODUC: We will revisit  
21 that.

22 MR. JACKSON: Is that door now open?

23 MS. ANSLEY: And I want --

24 CO-HEARING OFFICER DODUC: Hold on. We will  
25 revisit that after the cross-examination is concluded.

1 MR. JACKSON: Okay.

2 MS. ANSLEY: Sir, I'm responding --

3 WITNESS LEE: While I didn't make a list of  
4 all of the pollutants that could be there, the USGS  
5 scientists I've cited in my report did make a list of  
6 some of these. And so I -- and I didn't put it in my  
7 slides today, but those are in my slides that were made  
8 available for this hearing.

9 MS. ANSLEY: Are we talking about Table 1  
10 in -- on Page 8 of your testimony? If we could go to  
11 Page 8 real fast.

12 WITNESS LEE: Table what number again?

13 MS. ANSLEY: Do you see table here on the  
14 screen, sir? Is that the list you were talking  
15 about?

16 WITNESS LEE: Right, Table 1.

17 MS. ANSLEY: Is it your understanding that the  
18 DWR FEIR Chapter 8 analyzed dissolved oxygen?

19 WITNESS LEE: I assume they did. I mean, I'd  
20 have to look back. But -- they spent \$2 million of  
21 CalFed funds looking at EO issues and the deep water  
22 ship channel.

23 MS. ANSLEY: How about nitrogen and nutrient  
24 levels? Is it your understanding that Chapter 8  
25 analyzed nitrogen and nutrient levels?

1 WITNESS LEE: Yes.

2 MS. ANSLEY: You say orthophosphate here. How  
3 about total phosphorus as well?

4 WITNESS LEE: Yes.

5 MS. ANSLEY: Organic carbon? Is it your  
6 understanding that Chapter 8 includes an analysis of  
7 organic carbon?

8 WITNESS LEE: It would be, yes.

9 MS. ANSLEY: And just to round out your list  
10 at the bottom here, how about selenium? Do you  
11 understand that the DWR did an analysis of selenium  
12 impacts?

13 WITNESS LEE: Yeah, if it's on the list, it's  
14 right. But that's a small part of the arena of  
15 pollutants that enter the Central Delta through Turner  
16 Cut. That's the key issue is that there should be a  
17 much broader look at potential pollutants in Turner Cut  
18 brought in by the San Joaquin River.

19 MS. ANSLEY: Are you familiar with -- and I  
20 apologize if I asked you this in Part 1.

21 Are you aware of the Appendix 8C to the FEIR  
22 which talks about the constituent screening analysis  
23 before the Department of Water Resources?

24 WITNESS LEE: I looked at it one time.

25 MS. ANSLEY: And just generally, is it your

1 understanding that that screening analysis was  
2 conducted on 182 water quality constituents?

3 WITNESS LEE: I don't recall the details, but  
4 I can understand. That approach is not reliable for  
5 evaluating these kind of issues.

6 MS. ANSLEY: But just generally, was it your  
7 understanding that that screening analysis included  
8 unregulated and unrecognized pollutants, such as  
9 endocrine disrupters?

10 WITNESS LEE: It could have, yes. I believe  
11 it did.

12 MS. ANSLEY: Do you understand that the  
13 proposed project before the Board with this petition is  
14 the Alt 4A scenario?

15 WITNESS LEE: That's what I've been hearing.

16 MS. ANSLEY: Okay. And were you aware that  
17 the Chapter 8 of the EIR analyzed and made conclusions  
18 regarding dissolved oxygen levels, both within the  
19 Delta as well as at Stockton, San Joaquin River at  
20 Stockton?

21 WITNESS LEE: I believe so. I'm not sure. I  
22 mean, I looked at it one time, but I don't remember  
23 studying details like that. Certainly it should have  
24 been, if it wasn't.

25 MS. ANSLEY: And just my last set of

1 questions. I believe, and don't let me mis- -- feel  
2 free -- to don't let me mischaracterize your testimony,  
3 but to shorthand it, I believe that one of your  
4 concerns in this testimony was that -- that the  
5 analysis of water quality should have included analysis  
6 of dissolved phosphorus; is that correct?

7 WITNESS LEE: Yes.

8 MS. ANSLEY: And that would be a component of  
9 total phosphorus loading; is that correct?

10 WITNESS LEE: Yes, by definition.

11 MS. ANSLEY: Right, by definition. Is it your  
12 understanding that the analysis in Chapter 8 concluded  
13 that total phosphorus increases would only be on the  
14 order of less than 0.2 milligrams per liter at  
15 locations in the Delta where the fraction of San  
16 Joaquin River water would increase?

17 WITNESS LEE: I assume that that's what they  
18 have said. I don't know if that's true. But with  
19 respect to those numbers, that level of phosphorus  
20 grows an awful lot of algae and causes severe water  
21 quality problems.

22 MS. ANSLEY: Less than 0.2 milligrams per  
23 liter?

24 WITNESS LEE: Yes. Critical phosphorus is  
25 down at somewhere around 2 to 5 micrograms per liter.

1 MS. ANSLEY: And are you aware of recent  
2 studies showing that neither nitrogen nor phosphorous  
3 is limiting in the Delta?

4 WITNESS LEE: Yeah, it's not reliable. That's  
5 something I've worked on extensively and published on  
6 that issue. And the assessment like that is unreliable  
7 in the face of what we know about nitrogen and  
8 especially phosphorus.

9 MS. ANSLEY: I have no further questions for  
10 Dr. Lee, thank you.

11 CO-HEARING OFFICER DODUC: And that concludes  
12 your cross?

13 MS. ANSLEY: I believe that concludes our  
14 cross for this panel.

15 CO-HEARING OFFICER DODUC: All right.

16 MS. ANSLEY: Oh, I do have -- I'm sorry. I do  
17 have one sort of housekeeping/objection for Dr. Lee's  
18 testimony.

19 In Part 1, if you recall perhaps, there was an  
20 issue with his original testimony where he had of  
21 course a lot of studies and a lot of comments he had  
22 made to the BDCP. And there was some problematic  
23 wording about incorporating the exhibits he was relying  
24 on but as his actual testimony.

25 And on February 21st -- in the February 21st

1 ruling, the Board distinguished between relying on  
2 exhibits, in a sense striking the wording that said  
3 that those exhibits were actually incorporated as part  
4 of his direct testimony in the sense that they became  
5 his direct testimony.

6 And I just would like to note that that  
7 wording has now propagated again into the Part 2  
8 testimony.

9 I would -- I'm lodging objection to  
10 incorporating -- to incorporating exhibits as direct  
11 testimony. And all I'm asking is just an understanding  
12 of that the language incorporated into the testimony is  
13 stricken. And I'm happy to leave the exhibit numbers  
14 because obviously an expert can rely on exhibits they  
15 submit into the record.

16 If that's unclear, I'm happy to write it out  
17 or discuss it more. But I think that's just a holdover  
18 that was ruled on in Part 1.

19 CO-HEARING OFFICER DODUC: Mr. Jackson?

20 MS. ANSLEY: And I can discuss it with  
21 Mr. Jackson, too, off the record.

22 MR. JACKSON: That would be kind of helpful  
23 because I did not understand what she said.

24 CO-HEARING OFFICER DODUC: All right. I'll  
25 let you guys work that out. I do want to take a break.

1 The poor court reporter has been superwoman. And  
2 during the break, I will ask your two witnesses from  
3 Panel 2 to come up. And we'll conduct that direct and  
4 cross-examination.

5 But before we take our break, I just wanted  
6 to -- and again, maybe because it's so clear to me and  
7 I have trouble articulating why, but this whole issue  
8 of the CEQA and the adequacy, I'm pulling up here our  
9 October 7th, 2016 ruling. And let me just read to you  
10 what it says. And hopefully it will clarify things.

11 We did rule that testimony regarding the  
12 adequacy of the Revised Draft EIR, Sacramento Draft  
13 EIR, is not relevant, meaning the adequacy in general  
14 is not relevant to any key issue.

15 However, and this is where I'm quoting,  
16 "Specific testimony concerning the adequacy of the  
17 information contained in the Draft EIR as it relates to  
18 a specific hearing issue is permissible."

19 So that is different than testimony that just  
20 opines on whether the Draft EIR satisfies the  
21 requirements by CEQA. There's a difference between a  
22 general opinion, general argument on the adequacy of  
23 the Draft EIR -- which, Mr. Jennings, in the section of  
24 your testimony that was stricken, you made some general  
25 statements about -- you did couch it at the beginning,



1 but majority of your argument was based on issues that  
2 such as the Alternatives were not adequately analyzed,  
3 you know, more recent scientific information might not  
4 have been considered, a lot of information are still to  
5 be developed.

6 Those are the kind of general arguments  
7 regarding the adequacy of the Draft EIR or EIR, for  
8 that matter, that is not specifically relevant to a key  
9 hearing issue.

10 But to the extent that you have or you can  
11 point out information or flaws of a specific set of  
12 information in the Draft EIR as it relates to specific  
13 a hearing issue, that, we want to hear about. And I  
14 would -- suffice to say that many of the -- many of the  
15 cases in chief for protestants during this hearing do  
16 bring up information and flaws and arguments against  
17 things and information that were in the Draft EIR.

18 So I don't know if that's clear. But there is  
19 a distinction between general arguments about the  
20 adequacy of the CEQA document and very specific  
21 arguments focused on specific information within the  
22 Draft EIR and how that is, in your opinion, supportive  
23 or not supportive of the key hearing issue that is  
24 before us.

25 WITNESS JENNINGS: Well, I'm very glad you

1 clarified that. That's somewhat different than I had  
2 assumed. But it still points up that -- and I didn't,  
3 if you noted, except that section, I tried to avoid the  
4 EIR.

5 But how the EIR -- setting aside no one  
6 questions that the adequacy of the EIR for CEQA  
7 purposes is irrelevant to this hearing.

8 CO-HEARING OFFICER DODUC: Okay. We agree on  
9 that, yes.

10 WITNESS JENNINGS: We agree from the start.

11 And I think we can agree that the adequacy of  
12 the EIR for the purposes of the Board's responsibility  
13 on the Water Code might be different.

14 MR. JACKSON: Let me make a run at that  
15 because as I understood the stricken part of  
16 Mr. Jennings' testimony, what he was arguing was, as a  
17 responsible agency, the EIR is adequate for your  
18 purposes unless, as a responsible agency, it was  
19 dealing with another set of questions.

20 In other words, the responsible agency may, in  
21 many cases, need to look at the adequacy of the  
22 information for a different decision, like a change in  
23 point of diversion.

24 CO-HEARING OFFICER DODUC: Yes, we agree on  
25 that. Yes.

1           MR. JACKSON: I didn't know we agreed on that  
2 until just now. I'm really glad to hear it. We'll try  
3 to do that --

4           CO-HEARING OFFICER DODUC: The reason I raise  
5 it now is because, if that is still unclear, we have to  
6 make it clear before you prepare your rebuttal.

7           MR. JACKSON: Yes, exactly. And the --

8           CO-HEARING OFFICER DODUC: Because I don't  
9 want you to not give us information we need to address  
10 the adequacy for our purposes.

11          MR. JACKSON: For your purposes, yes. And  
12 that's what we thought we were trying to do.

13          CO-HEARING OFFICER DODUC: And that's what we  
14 want you to do.

15          MR. JACKSON: So we had left that, after  
16 reading the accumulated rulings, we had left that for a  
17 legal question to a court at -- later.

18                 And we don't wish to do that. We wish to try  
19 to convince you in this hearing. So we'll change.

20          CO-HEARING OFFICER DODUC: Okay. So keep that  
21 in mind. Think about it. I would expect that, at some  
22 point during this Part 2, before we get to the rebuttal  
23 phase, there might be some discussion about rebuttal.  
24 And if there is any remaining question about this,  
25 let's make sure we address it.

1 MR. JACKSON: Thank you very much.

2 CO-HEARING OFFICER DODUC: All right.

3 With that, thank you for your patience,  
4 Ms. Debbie. We will take a break, and we will return  
5 at 2:55.

6 (Recess taken)

7 CO-HEARING OFFICER DODUC: All right. Its  
8 2:55. We are back.

9 And during the break, hearing team staff  
10 tracked down another ruling which I think should help  
11 in the discussion of environmental documents.

12 So in addition to the October 27th, 2016  
13 ruling, I would encourage all of you to also reread the  
14 November 8th, 2017 ruling. There is a section in there  
15 that actually has a heading "Relationship between the  
16 key hearing issues and project environmental  
17 documents." Please read that, and when we discuss  
18 rebuttals, should it be necessary, we will try to  
19 provide more clarification.

20 MR. JACKSON: Thank you.

21 CO-HEARING OFFICER DODUC: All right. May I  
22 ask you two gentleman to please stand and raise your  
23 right hand.

24 (Witnesses sworn)

25 DAVID HURLEY and GERALD NEUBERGER,

1 called as Panel 2 witnesses for Group 31,  
2 California Sportfishing Protection Alliance,  
3 California Water Impact Network, and  
4 AquAlliance, having been first duly sworn,  
5 were examined and testified as hereinafter  
6 set forth:

7 CO-HEARING OFFICER DODUC: Thank you,  
8 Mr. Jackson.

9 MR. JACKSON: Thank you.

10 CO-HEARING OFFICER DODUC: I believe  
11 Mr. Jackson had indicated that they would do direct in  
12 15 minutes or thereabouts.

13 DIRECT EXAMINATION BY MR. JACKSON

14 MR. JACKSON: Thank you very much.

15 Mr. Neuberger, is CSPA-212 a true and correct copy of  
16 your testimony?

17 WITNESS NEUBERGER: Yes.

18 MR. JACKSON: Is CSPA-213 a true and correct  
19 copy of your qualifications?

20 WITNESS NEUBERGER: Yes.

21 MR. JACKSON: Mr. Hurley, is CSPA-216 a true  
22 and correct copy of your testimony?

23 WITNESS HURLEY: Yes.

24 MR. JACKSON: Is CSPA-217 a true and correct  
25 statement of your qualifications?

1 WITNESS HURLEY: Yes.

2 MR. JACKSON: I think we'll begin with  
3 Mr. Neuberger.

4 Would you please summarize your testimony.

5 WITNESS NEUBERGER: All right. First of all,  
6 I'd like to thank you for --

7 CO-HEARING OFFICER DODUC: Is the green light  
8 on?

9 WITNESS NEUBERGER: No, it's not. There we  
10 go.

11 CO-HEARING OFFICER DODUC: Perfect.

12 WITNESS NEUBERGER: I'd like to thank you for  
13 taking my testimony today. My grandson will appreciate  
14 it. He's going to poke his finger in the tide pools  
15 tomorrow. We're going to go camping, so thank you very  
16 much. You can come if you like.

17 My name is Gerald Neuberger. I'm 74 years  
18 old. I've lived in the Sacramento Valley since 1949.  
19 I've fished the Sacramento River from probably in my --  
20 in my early 20s, which would be around 1960, up until  
21 1979. We left the country for about three years. When  
22 we came back, I started fishing in the San Joaquin  
23 side. We moved to Lodi, and I fished that area from  
24 1986-'87 up until today.

25 Over the years, I've seen a dramatic decrease

1 in the -- both the number and the size of the stripers  
2 as a species. That's the principal species that I  
3 target. And I've also noticed a major decline in the  
4 retail businesses that support that fishery in the form  
5 of on-the-water restaurants, small bait shops, small  
6 stores in the area.

7           When I looked at the Delta and I traveled  
8 around the country to other fisheries, I noticed that  
9 the Delta is declining while other fisheries -- for  
10 example, the fishery in, say, in Florida along the keys  
11 actually seems to be growing and expanding.

12           When I was young, my mom used to take me  
13 fishing. But I really didn't learn how to fish until,  
14 like I said before, in my early 20s. I bought a small  
15 boat about \$4500 -- oh, no that boat was just a K-Mart  
16 boat with a K-Mart motor.

17           We would go to out to fish in the Clarksburg  
18 Flat area. And when I'd launch, I'd see anywhere from  
19 70 to 100 boats fishing at the time. As I became more  
20 efficient, I would easily catch what was considered a  
21 limit at the time, like three stripers in the 10- to  
22 15-pound range. And I also learned about the migratory  
23 habits of the fish and things like that.

24           I also remember that, when the Rio Vista Bass  
25 Derby was going on, if we drove down to Rio Vista and

1 crossed the bridge going from the Sacramento side to  
2 the -- I guess it's Solano side -- that we would see  
3 hundreds and hundreds of both boats on the water during  
4 that particular weekend.

5           At that time, I think that Fish and Game's  
6 projection of the fish was around 3 million fish. And  
7 I know that, if you take a look at the California  
8 Striped Bass Association, their projection is about --  
9 was about the same.

10           I know that that 3 million sounds like a lot  
11 of fish, but when you consider that, in the 1930s, the  
12 striped bass was fished commercially out of the Bay,  
13 and they took over a million pounds annually, estimates  
14 could be as many as 9 million adult fish living in that  
15 estuary.

16           Like I said, I quit fishing because we left  
17 out of the country. And we came back in 1984, and I  
18 wanted to get back into fishing again. I spent \$4500  
19 on a boat and another \$500 on equipment, but instead of  
20 becoming a meat fisherman and using bait, I took up fly  
21 fishing and catch and release.

22           I've joined a club called the Delta Fly  
23 Fishers, and I've been involved in it ever since. I'm  
24 president of the Delta Fly Fishers now and have been --  
25 I'm past president of the Northern California Council



1 of Fly Fishers.

2           So I started fishing the Delta on weekends and  
3 holidays, and I became really successful. A friend  
4 of -- I was online. I got in contact with another guy  
5 who was from -- originally from South Africa, working  
6 in the Bay Area.

7           He wanted to come up fishing with me, and he  
8 decided my boat was just too small, my little  
9 14-footer. So he says, "Suppose I go half with you,  
10 and we buy a bigger boat?" So we bought a bigger boat,  
11 and we'd go out fishing.

12           And then finally it got time to -- I get  
13 toward -- I got toward retirement. I was a teacher in  
14 Stockton. So around 2006, I committed to becoming a  
15 guide on the Delta, and I bought a \$35,000 boat and  
16 spent another 6- or \$7,000 on equipment. And I guided  
17 from 2006 to the fall of 2016.

18           During that time, the first -- the first,  
19 let's see, first six or seven years, fishing was very  
20 successful with almost all my clients catching fish on  
21 a regular basis of ten pounds or close to ten pounds on  
22 an outing, even some very inexperienced anglers. And  
23 that was while my learning curve was actually growing  
24 that they were having a very good success.

25           I would say by year five or six, I felt myself

1 to be fully experienced on the Delta. But the catch  
2 rates on my boat started going down. And we also were  
3 finding fish in fewer locations. That continued on  
4 until about 2013, and then fishing really, really  
5 started to decline.

6 We would find most of our fish on the main San  
7 Joaquin and almost no fish on the interior of the Delta  
8 at all. When I say "interior," I'm talking Mildred  
9 Island, Little Mandeville, Connection Slough, Holland  
10 Cut, all of those areas where the fish would be in  
11 years past. And you would go there, and you would just  
12 find a desert.

13 When I looked at my fish finder, in the early  
14 years, I would actually go along, and I would see -- I  
15 would see so many small fish sometimes that my fish  
16 finder would look like I'm floating on a sea of fish.  
17 The amount -- and they would and juvenile stripers in  
18 the 8-to-14-inch size range. In the past four to five  
19 years -- I've only encountered that maybe once, four or  
20 five years ago. And in the past three years, I have  
21 not found any -- any fishery -- any congregation of  
22 fish that size.

23 And in fact, this last year and a half,  
24 fishing has really, really deteriorated, where I'm  
25 using smaller equipment, smaller rods because the fish

1 are just smaller, and there's just not that many of  
2 them.

3           Also, when I became aware -- as I was working  
4 in the Delta, I became aware that the retail businesses  
5 in the Delta were also dying. When I first moved to  
6 Lodi, there were four bait shops in Lodi. Now there's  
7 only one. The last one closed about two years ago.  
8 And that's on Highway 12 directly en route to the main  
9 launch areas in the Central Delta. And yet that shop  
10 could no longer maintain itself in business.

11           There was a ship chandlery shop just within  
12 walking distance of where I keep my boat in the marina.  
13 That shop closed in about 2010. There's been two  
14 attempts to open it. Both have failed. Both owners  
15 finally had to pull out. No boat repairs, and no ship  
16 chandlery there now.

17           When I first was on -- kept my boat on  
18 Mokelumne, there were four restaurants. Two of those  
19 restaurants have closed -- one of those restaurants has  
20 closed permanently. And one has -- only open in the  
21 summertime and now for three days a week. One has  
22 changed hands several times. And the restaurant at my  
23 marina, they used to lease it out, but the leasing  
24 people couldn't make any business. So now the owners  
25 of the marina are renting to themselves and the

1 manager. They're running it at a loss because they  
2 feel that to have a marina without a restaurant is just  
3 not giving their customers the full service they  
4 deserve.

5           If I were to take a look at any one thing that  
6 would indicate the declining health of the Delta, I  
7 would take a look at the Rio Vista Bass Derby. Back  
8 when I was fishing in the '60s, I would guess they  
9 probably had -- I said a thousand in my thing. But I  
10 would guess probably over 2,000 participants over three  
11 days. They would give away boats and motors as part of  
12 the prizes. The prize list would normally go on for  
13 like a full page.

14           I took a look at it through -- what they had  
15 last year online, and they had less than a thousand  
16 participants, and their prize is now a \$1,500 cash  
17 prize rather than the prizes they used to give.

18           They've also changed the way that they award  
19 the prize. And before, they used to go for the largest  
20 fish, and now they go for what's called -- they pull  
21 the number out of a hat and they'll say, for example,  
22 27.5 inches, and the person that gets the fish closest  
23 to 27.5 inches wins the prize. And the idea of that is  
24 to preserve the bigger fish because bigger females  
25 reproduce at a much greater rate than smaller females.

1           So if I were to summarize my written  
2 testimony, it would basically be that over the -- over  
3 my lifetime of experience on the Delta of 50 years, the  
4 number of fish has declined dramatically, I would guess  
5 down to probably 1/30th of what they were when they  
6 started. And the size of the fish, that's also  
7 declined dramatically from what used to average 10- to  
8 15-pounds fish on an average, catch rate down to, now,  
9 fish of three or four pounds and much fewer, as a  
10 matter of fact, as well.

11           And when I talk about catch rates, I release  
12 all of my fish. And the guys that fish with me release  
13 all their fish. So we're not limiting ourselves to two  
14 or three fish a day. Sometimes we're lucky, and we'll  
15 to catch well over a dozen fish, but they're small.

16           And the other part of my testimony is about  
17 the declining retail businesses on the Delta. Each one  
18 of those businesses probably employed from four to ten  
19 people, when you think about the shifts necessary to  
20 man it at the time.

21           So the whole Delta has just declined as a --  
22 as a sort of a unique place in California's history and  
23 California's culture.

24           I can say no more.

25           MR. JACKSON: Mr. Hurley, could you summarize

1 your testimony.

2 WITNESS HURLEY: Yes, I can.

3 My name is David Hurley. I'm a freelance  
4 writer for a number of publications here in California,  
5 including USA Fishing, the Fresno Bee Fishing Report,  
6 Western Outdoor News and Fishsniffer Magazine.

7 I'm a native of Stockton, and I'm a  
8 great-grandson of Giuseppe Busalacchi, an immigrant  
9 from Sicily who came to the United States in 1880s and  
10 ran a commercial fishing business starting in  
11 San Francisco, moving to Martinez in 1906 after the  
12 earthquake, progressively to Collinsville, to  
13 Rio Vista, and finally in Stockton in 1917.

14 My great-grandfather had six sons, of which my  
15 grandfather Frank was one.

16 They held a fishing market in Stockton until  
17 1964. And they ran their launches as tenders in the  
18 City of Stockton throughout the Delta, Sacramento  
19 River, San Joaquin River until 1958, when the  
20 commercial salmon fishery closed.

21 I'm a professional educator, and I always  
22 teach that science never lies, and history is subject  
23 to interpretation. But this doesn't really play out in  
24 the world of water because science is subject to  
25 interpretation, and history gives us the best window to

1 the truth.

2 I want to focus on the history, both past  
3 history and the recent present. As I stated before,  
4 I've written over 2,000 fishing reports in the last  
5 12 1/2 years. I write a three-times-a-week report for  
6 USA Fishing. I've conducted hundreds of interviews  
7 with a number of individuals about what is taking place  
8 in what is the amazing estuary that's the California  
9 Delta.

10 And what the reports have made clear to me is  
11 that we have a decreasing participation in sturgeon and  
12 striped bass derbies, as Mr. Neuberger has indicated.  
13 We have a closure of numerous bait and tackle shops.  
14 What is there are on life support in many cases. We  
15 have a closure of several marinas. We have entire  
16 marinas close due to the amount of vegetation blocking  
17 the ability to launch a boat.

18 We have Fish and Game regulations. At one  
19 time, striped bass was five, went to three; now it's to  
20 two. Sturgeon is now limited to three slot limit fish  
21 per year. And as I'm sure you're aware, we currently  
22 have the postponement of the ocean salmon season from  
23 Pigeon Point north to Horse Mountain in Humboldt  
24 County. And that is a reflection of the loss of the  
25 late fall-run and the winter-run.

1           Fishing locations that have been very  
2 productive in the past are no longer viable due to the  
3 amount of vegetation, particularly in the South Delta.

4           While I was a geography major at Humboldt  
5 State University 40-something years ago, the late  
6 Professor John Hopper made it very clear. He said  
7 there's no watershed as a point of diversion that has  
8 ever been enhanced by water diversions.

9           Those words of over 40 years ago are prophetic  
10 today. In my relatively short life span of 61 years,  
11 I've been witness to the degradation of fishing and  
12 hunting opportunities in the Delta. I've been very  
13 fortunate. I've spent numerous hours on the Delta,  
14 with two men that have spent over 10,000 days on the  
15 Delta. These two men I've been on a boat with where  
16 you couldn't see from me to our court reporter because  
17 of the fog. And they were able to navigate without the  
18 use of a depth finder, without the use of a fish  
19 finder, without the use of a GPS. That's how intensive  
20 their knowledge of the Delta was. One was my  
21 grandfather and the other was long-time 40-year retired  
22 guide in the Delta,  
23 Jay Sorensen.

24           Based on a lifetime in the Delta Estuary, I  
25 strongly believe that WaterFix's plan to divert



1 additional millions of acre-feet of freshwater around  
2 the Delta will lead to the termination of the last  
3 remnants of the Delta, including pushing fish species  
4 over the edge towards extinction.

5 I had the opportunity to spend a lot of time  
6 with my grandfather before he passed. And one of the  
7 things he would describe to me is, when they would go  
8 out in the salmon tender, that salmon tender would be  
9 so loaded with fish on the way to the cannery in  
10 Pittsburg, they would take water over the top of the  
11 rails. They had to be very careful in navigating and  
12 going at certain times because they were just so loaded  
13 down.

14 My family also participated in the commercial  
15 striped bass industry that Mr. Neuberger had indicated.  
16 in fact the symbol on their Giuseppe Busalacchi & Bros.  
17 Fish Market was that of a striped bass. So we know  
18 that striped bass and the salmon coexisted for many  
19 years.

20 My grandfather would describe situations in  
21 the Delta where he could actually see the bottom of the  
22 water in the Old River. He could actually see the  
23 bottom. Even 50 years ago, that was hard for me to  
24 believe.

25 I just want to summarize -- oh, and one other

1 thing. Shad runs used to be very prolific on the  
2 San Joaquin River. In fact, my uncles -- my uncle  
3 Jo-Jo my great uncle, he would go out there with his --  
4 and bump net for shad and just load up on shad. There  
5 hasn't been American shad run in the San Joaquin River  
6 for decades.

7           One other thing I wanted to draw attention to  
8 is Jay Sorensen, who is the founder of the California  
9 Striped Bass Association, noted in 1974, because he was  
10 working out at Spindrifft Marina, that the massive  
11 striped bass spawns that had taken place, that he would  
12 describe the fact that you could smell the milt from  
13 the males on top of the water and hear the females  
14 slapping the water all the time. And when he was  
15 actually catching a fish, a female fish, he had two  
16 males swim in the net. Those spawns disappeared in the  
17 1970s, and as a result of that, he started the  
18 California Striped Bass Association.

19           The Delta's a unique and remarkable place, as  
20 Sorensen said to me many times, "This is my Sistine  
21 Chapel. There is no two sunsets alike out in the  
22 Delta." His reverence for this special place is shared  
23 by many. And to be able to share the feeling of  
24 watching the sunrise and fog lift off the water in the  
25 San Joaquin River, to hear the massive flocks of ducks,

1 geese, and Sandhill cranes go overhead in the fog where  
2 you can't see them, or the listen to the coyotes holler  
3 off of Decker Island at the night, those are  
4 experiences that should be preserved for generations.

5           To sit on the anchor and have long  
6 conversations with other men, those are experiences --  
7 and have the opportunity to catch the fish of a  
8 lifetime, those are things that need to be treasured  
9 and preserved.

10           You know, it's been over 50 years, but I  
11 distinctly remember the first time I saw a river otter  
12 on Delta. I was out on the river with my uncle --  
13 Great Uncle Nino and my grandfather in a pea soup fog.  
14 You couldn't see anything. And it was one of those  
15 days when, on the San Joaquin River, it's just magical  
16 when the fog starts to rise off the water. And when  
17 that took place, I looked over to the side, and I saw a  
18 river otter for the first time. It just set something  
19 off in me. I said, wow, this is one amazing place.

20           So there is no doubt in my mind, based on my  
21 observations within my lifetime and actual hands-on  
22 experience of writing fishing reports, that the Delta  
23 experience is in danger of extinction.

24           WaterFix's plans to divert the Sacramento  
25 River fresh water around the South Delta, where the

1 flows have already been constricted, will further the  
2 man-made damage that's occurred over the last 150  
3 years. It all depends on whether we want to be the  
4 generation that drives the last nail in the coffin of  
5 the Delta.

6 And just want to show you one thing to  
7 emphasize my thinking. This is a relic. I don't know  
8 if you know what this is, but this was a commercial --  
9 hand-carved commercial fish net repair tool, which has  
10 my great-uncle Antonio Busalacchi's initials on it.  
11 This is now a relic. This is a thing of the past.

12 This is a fishing lure that we would use  
13 currently right now for largemouth bass and spotted  
14 bass -- and striped bass, excuse me.

15 I'm a very lucky man. I have six grandsons.  
16 I do not want them to come up here in 50 years and show  
17 something like this, show something like this to you  
18 and say, "This is a relic." So in closing, I don't  
19 want to be part of this legacy of the destruction of  
20 the Delta. Thank you.

21 CO-HEARING OFFICER DODUC: Thank you.

22 MR. JACKSON: Thank you very much.

23 CO-HEARING OFFICER DODUC: I'm going to have  
24 to start reading your fishing reports now.

25 WITNESS HURLEY: Any time. Just give me your

1 e-mail address. I'll be happy to get them to you.

2 Mr. Mizell. And I believe Mr. Mizell had  
3 estimated 15 minutes for his cross.

4 MR. MIZELL: Yes, I think can I get this done  
5 in five.

6 CO-HEARING OFFICER DODUC: Better.

7 CROSS-EXAMINATION BY MR. MIZELL

8 MR. MIZELL: Mr. Neuberger, you state in your  
9 testimony CSPA-212 on Page 2, that your conclusions are  
10 based upon anecdotal evidence; is this correct?

11 WITNESS NEUBERGER: Yes. Yeah, I didn't  
12 conduct any -- set any trawls or anything like that,  
13 collect samples or anything like that, no. I just  
14 looked at my fish finder and looked at what was on the  
15 end of my line.

16 MR. MIZELL: Thank you. And your testimony is  
17 based upon a perceived decline in striped bass that has  
18 already taken place; is that correct?

19 WITNESS NEUBERGER: I'm sorry. I'm a little  
20 bit deaf, so.

21 MR. MIZELL: I'll speak up. Your testimony is  
22 based upon a perceived decline in striped bass that has  
23 already taken place, correct?

24 WITNESS NEUBERGER: Yes.

25 MR. MIZELL: And the main example that you

1 cite to in your testimony is the recent record-setting  
2 drought of 2013 to 2016, correct?

3 WITNESS NEUBERGER: I'm basing my testimony on  
4 50 years of experience, not three.

5 MR. MIZELL: Do you include in your testimony  
6 the recent drought as an example?

7 WITNESS NEUBERGER: Again, please?

8 MR. MIZELL: Do you include in your testimony  
9 the recent drought as an example?

10 MR. MIZELL: We've had droughts in the past,  
11 and we've had wet years in the past. And the striper  
12 fisheries seemed to be resilient and not reflect those  
13 changes in the water flows.

14 MR. MIZELL: If we could bring up CSPA-212,  
15 please. Let's go to Page 5, please, and the last  
16 paragraph.

17 So it was my understanding that Pages 5 and 6  
18 of your testimony, you were providing an example of  
19 this decline in this striped bass that you're  
20 testifying about.

21 WITNESS NEUBERGER: Yes, yes. But I don't  
22 attribute them to be anything of whether it's a wet  
23 year or a dry year. I didn't refer that in any part of  
24 my testimony.

25 MR. MIZELL: Okay. But the years that you

1 state on the bottom of Page 5 and the top of Page 6 are  
2 the years of 2013, 2014, 2015, and 2016; is that  
3 correct?

4 WITNESS NEUBERGER: Yes.

5 MR. MIZELL: Thank you.

6 Mr. Hurley, you do not cite to a single source  
7 of data in your testimony, do you?

8 WITNESS HURLEY: Can you repeat the question,  
9 please.

10 MR. MIZELL: You do not cite to a single piece  
11 of data in your testimony; is that correct?

12 WITNESS HURLEY: What are you referring to in  
13 terms of data?

14 MR. MIZELL: Do you provide any citation to  
15 any that would support the statements in your  
16 testimony?

17 WITNESS HURLEY: I would say that this is  
18 data, sir.

19 MR. MIZELL: So --

20 WITNESS HURLEY: We know that that --

21 MR. MIZELL: -- there's nowhere in your  
22 testimony --

23 WITNESS HURLEY: We know that this existed --

24 (Reporter interruption)

25 WITNESS HURLEY: We know that this existed

1 [indicating].

2           Sir, I've conducted over hundred -- thousands  
3 of interviews with fishermen, fishing tackle shops,  
4 party boat operators over the last 12 1/2 years. I  
5 have archives of the reports of everything. So as far  
6 as scientific data, if you're requesting that, the  
7 answer is no.

8           MR. MIZELL: If we could pull up CSPA-216,  
9 please. And we can either do this the easy way or the  
10 hard way. The easy way would be I'll ask a general  
11 question, and a straightforward answer would be  
12 appreciated.

13           MR. JACKSON: Excuse me. I object to the  
14 attempt, I guess, to intimidate the witness.

15           CO-HEARING OFFICER DODUC: Hold on. Hold on.

16           CO-HEARING OFFICER MARCUS: Can I make a  
17 comment, please.

18           ALL sides do this, including you. I'm just  
19 going to say I know people feel really strongly, but I  
20 think we would appreciate it if everybody just tried to  
21 answer -- this is a legal proceeding. Folks ask  
22 questions in a certain way, you all may take umbrage.  
23 there, okay. But they should be asked in a respectful  
24 tone.

25           But everybody, this is on all sides. I just



1 really appreciate if people step back, help us with the  
2 hearings. Just answer the questions. If you don't  
3 understand, say you don't understand and ask for it  
4 back. And don't presume intent of anybody. It's just  
5 better to come at people like this in life. Just  
6 listen, ask questions, listen to the answer. And then  
7 we don't search for answers here.

8 MR. MIZELL: Understood.

9 CO-HEARING OFFICER DODUC: What she said.

10 Proceed, Mr. Mizell.

11 MR. MIZELL: Mr. Hurley, can you identify for  
12 me where in your testimony you reference the  
13 information that you just stated was the basis of your  
14 testimony?

15 WITNESS HURLEY: I don't think I understand  
16 the question, Mr. Mizell.

17 CO-HEARING OFFICER DODUC: Mr. Mizell, are you  
18 referring to Mr. Hurley's response that he had  
19 conducted interviews?

20 MR. MIZELL: That's correct. In response to a  
21 question about the basis of his opinions, he said he  
22 conducted hundreds of interviews. And I don't want to  
23 mischaracterize his answer, but it went on. I would  
24 like him to identify where in his testimony he cites to  
25 any of that information.

1           WITNESS HURLEY: Well, I'd like to respond to  
2 the earlier question about data. I think that it  
3 states in my testimony that Dockside Bait in Pittsburg,  
4 Sea Biscuits in Vallejo, Ly's Fishing Goods in San  
5 Jose, Leonard's Bait in Port Sonoma, Oyster Point Bait  
6 and Tackle in South San Francisco -- and I forgot about  
7 Martini's Bait, but that is data. Those shops are now  
8 closed. We can verify that.

9           But going your current question, all you have  
10 to do is look at the archives of USA Fishing, the  
11 Fresno Bee, and Western Outdoor News, and you'll see my  
12 reports there.

13           MR. MIZELL: Have you provided dates of when  
14 those reports were run?

15           WITNESS HURLEY: I'd be happy to do that if  
16 that's what you're requesting.

17           MR. MIZELL: I'm trying to understand how  
18 other parties can assess the information in your  
19 testimony. So if you could provide us with as many  
20 citations as you feel are necessary to support your  
21 testimony, that would be appreciated.

22           WITNESS HURLEY: So let me see if I understand  
23 your question. What asking me to do is to provide you  
24 with the archives of the USA Fishing going back  
25 to 19- -- 2005? I'd be happy to do that if that's

1 really what you are requiring. Would you like it on a  
2 flash drive?

3 MR. MIZELL: No, thank you.

4 Is your testimony based upon a perceived  
5 decline in the fishing industry that has already taken  
6 place?

7 WITNESS HURLEY: Well, if you'd listen to my  
8 testimony, you'll see that it's taken place over the  
9 last 150 years.

10 MR. MIZELL: Thank you. No questions.

11 CO-HEARING OFFICER DODUC: So Mr. Mizell, did  
12 you withdraw that request?

13 MR. MIZELL: Yes.

14 CO-HEARING OFFICER DODUC: Any redirect  
15 Mr. Jackson?

16 MR. JACKSON: No redirect.

17 CO-HEARING OFFICER DODUC: All right. Thank  
18 you.

19 WITNESS HURLEY: Thank you very much. Thank  
20 you

21 WITNESS NEUBERGER: Thank you.

22 CO-HEARING OFFICER DODUC: All right. If we  
23 could get Panel 1 back please.

24 While that is taking place, perhaps we can do  
25 a time check. I have Mr. O'Hanlon for roughly 30

1 minutes. Is that still the case?

2 MR. O'HANLON: I would estimate something less  
3 than that, maybe 20.

4 CO-HEARING OFFICER DODUC: Okay.

5 And I have next Ms. Meserve for 20 minutes.

6 Ms. Meserve is that still true?

7 MS. MESERVE: Yes.

8 CO-HEARING OFFICER DODUC: Mr. Ruiz, 45  
9 minutes?

10 MR. RUIZ: 30. 25, 30.

11 CO-HEARING OFFICER DODUC: Okay. We are still  
12 in session. So no chit-chatting, please.

13 Mr. Keeling, 30 minutes?

14 MR. KEELING: 20 to 30.

15 CO-HEARING OFFICER DODUC: Ms. Des Jardins,  
16 still 45?

17 MS. DES JARDINS: Yes, please.

18 CO-HEARING OFFICER DODUC: And Ms. Womack,  
19 still 20?

20 MS. WOMACK: Maybe 10, about 20.

21 CO-HEARING OFFICER DODUC: Okay. We will -- I  
22 did Ms. Meserve already.

23 So we are still trying to do our best to get  
24 to you today. We do have a hard stop at 6:00, so  
25 hopefully we can complete that.

1           Tomorrow, Mr. Jackson, for your remaining two  
2 witnesses of Panel 2, how much time do you anticipate  
3 needing for their direct?

4           MR. JACKSON: I will think no more than 30  
5 minutes.

6           CO-HEARING OFFICER DODUC: And DWR? Has your  
7 cross-examination of Panel 2 been reduced? You had  
8 estimated 25 minutes. And now Panel 2 is just two  
9 witnesses instead of four.

10          MS. ANSLEY: Since Mr. Mizell has already  
11 walked out, I'd like to still reserve 15 to 20. But I  
12 do anticipate what you're saying is true, that the  
13 number of questions is less.

14          CO-HEARING OFFICER DODUC: All right. And we  
15 still have Mr. Emrick, Mr. Herrick, and Ms. Des Jardins  
16 requesting cross-examination of Panel 2; is that  
17 correct? And that would be only two witnesses.

18          MR. RUIZ: Yes, for South Delta we probably  
19 just have 10 or 15 minutes.

20          CO-HEARING OFFICER DODUC: Ms. Des Jardins?

21          MS. DES JARDINS: I would also only have 10 or  
22 15 minutes.

23          CO-HEARING OFFICER DODUC: Okay. So let's  
24 talk about Panel 3. Estimate direct?

25          MR. JACKSON: Same number of witnesses as this

1 morning. I estimated an hour and 20 minutes, and I  
2 realize the need to move it, but an hour 20 minutes.

3 CO-HEARING OFFICER DODUC: All right.

4 Cross by DWR for Panel 3?

5 MS. ANSLEY: I'm still refining questions, but  
6 I believe it's 40 minutes to an hour.

7 CO-HEARING OFFICER DODUC: Anyone else wishing  
8 to cross Panel 3?

9 (No response)

10 CO-HEARING OFFICER DODUC: So then next on the  
11 list would be Restore the Delta. I don't know if  
12 there's any representatives here, but any estimate on  
13 cross for Restore the Delta?

14 MS. ANSLEY: I'm sorry. Mr. Mizell stepped  
15 out, so I don't know have a good estimate of cross, but  
16 I do know that we have cross. But I know that -- I  
17 mean, just looking from my familiarity of the  
18 testimony, I don't anticipate it being more than 40  
19 minutes to an hour. It's not going to be something  
20 unusually long. I know that's not very helpful, but he  
21 stepped out, so.

22 MR. RUIZ: For the South Delta Water Agency  
23 parties, I would say 30 minutes for Restore the Delta.

24 MS. MESERVE: Osha Meserve for LAND. I would  
25 like to reserve 15 minutes. It will depend on whether

1 I can actually be here at that time though.

2 CO-HEARING OFFICER DODUC: Okay. So I'm going  
3 through this for the benefit of Mr. Wright because you  
4 are representing Friends of the River and Sierra Club  
5 California?

6 MR. WRIGHT: That's correct.

7 CO-HEARING OFFICER DODUC: So you would come  
8 after Restore the Delta. We will know better tomorrow,  
9 but it's possible that we might get to you on Thursday.

10 MR. WRIGHT: Well, I would take it you would  
11 definitely get to -- my concern was -- sounds like,  
12 then, they don't -- my witnesses don't have to be here  
13 tomorrow then.

14 CO-HEARING OFFICER DODUC: Correct -- hold on.  
15 Yes, that is -- that sounds correct, not  
16 tomorrow.

17 MR. WRIGHT: All right. That's a big help and  
18 then we'll know tomorrow whether -- thank you very  
19 much. Much appreciated.

20 CO-HEARING OFFICER DODUC: All right.

21 Okay. I think now we'll turn to Mr. O'Hanlon.

22 MR. O'HANLON: Thank you. Daniel O'Hanlon,  
23 appearing on behalf of the San Luis Delta-Mendota Water  
24 Authority --

25 (Reporter interruption)

1 (Discussion off the record)

2 CO-HEARING OFFICER DODUC: Are you ready?

3 THE REPORTER: Yes.

4 CO-HEARING OFFICER DODUC: All right.

5 Mr. O'Hanlon.

6 TOM CANNON, CHRIS SHUTES,

7 TOM STOKELY, DR. G. FRED LEE,

8 BILL JENNINGS,

9 called as Panel 1 witnesses for  
10 Group 31, California Sportfishing  
11 Protection Alliance, California  
12 Water Impact Network, and  
13 AquAlliance, having been previously  
14 duly sworn, were examined and  
15 testified further as hereinafter  
16 set forth:

17 CROSS-EXAMINATION BY MR. O'HANLON

18 MR. O'HANLON: Thank you. My questions today  
19 are for Mr. Shutes and Mr. Stokely. My questions for  
20 Mr. Shutes have to do with the proposed conditions  
21 described at Page 15 of his testimony, conditions  
22 primarily relating to Shasta operations.

23 My questions for Mr. Stokely have to do with  
24 the connection he draws between the Trinity River  
25 Division of the CVP and the San Luis Unit of the CVP.



1           Good afternoon, Mr. Shutes.

2           WITNESS SHUTES: Good afternoon.

3           MR. O'HANLON: Could I please have Mr. Shutes'  
4 testimony on the screen? It's CSPA-202 Errata.

5           And specifically, Mr. Baker, Page 15, please.

6 Thank you. All right. Could you scroll down a little  
7 bit further? Thank you.

8           All right. Starting at Line 9, Mr. Shutes,  
9 I'll paraphrase your testimony. And you tell me if  
10 I've misstated it. As I understand it, you're  
11 proposing that the Board should, at a minimum,  
12 incorporate into the CVP permits what you called  
13 numeric storage requirements from the NMFS Biological  
14 Opinion; is that correct?

15          WITNESS SHUTES: Yes, it is.

16          MR. O'HANLON: And you also proposed that the  
17 Board should do so without what you call exception  
18 language that allows the Bureau not to meet storage  
19 requirements in some water years, correct?

20          WITNESS SHUTES: That's what I propose.

21          MR. O'HANLON: My first question is what are  
22 the numeric storage requirements from the NMFS  
23 Biological Opinion that you're referring to?

24          WITNESS SHUTES: I believe there's two  
25 different values, and I don't recall as I sit here what

1 exactly they are.

2           There's one for normal years, there's one for  
3 drier years. And they're in the Biological Opinion  
4 for -- for the operations of the long-term -- the  
5 long-term operations of the Central Valley Project and  
6 the State Water Project.

7           MR. O'HANLON: Mr. Baker, could we have State  
8 Water Resources Control Board Exhibit 84, which is the  
9 NMFS Biological Opinion, and specifically Page 592.  
10 Thank you.

11           Mr. Shutes, we have on the screen Page 592  
12 from the Biological Opinion. Are these the storage  
13 requirements that you were referring to?

14           WITNESS SHUTES: They are.

15           MR. O'HANLON: Now, I'm looking at the  
16 performance measures for end of -- EOS, which is end of  
17 September, correct?

18           WITNESS SHUTES: Correct.

19           MR. O'HANLON: EOS storage carryover for  
20 Shasta Reservoir. It lists certain requirements  
21 that -- for minimum storage that they be met in a  
22 certain percentage of years, correct?

23           WITNESS SHUTES: That's correct.

24           MR. O'HANLON: Are you proposing any minimum  
25 storage that would be met in 100 percent of the years?

1 WITNESS SHUTES: No.

2 MR. O'HANLON: All right. In your testimony,  
3 you also propose that the Board not include what you  
4 called the exception language that's in the Biological  
5 Opinion, correct?

6 WITNESS SHUTES: Correct.

7 MR. O'HANLON: What exception language are you  
8 referring to?

9 WITNESS SHUTES: Could we find that in the  
10 line, please, so I could look at that, please?

11 MR. O'HANLON: I'm sorry, you're looking --

12 WITNESS SHUTES: I see. I found it.

13 I guess what I was referring to was the  
14 percentages. And on reflection, I think that there  
15 needs to be some exception in some circumstances.

16 On the other hand, the operations of the  
17 Central Valley Project have not met those storage  
18 targets. And one of the exceptions to which I take  
19 exception is the squishiness of the frequency with  
20 which these targets are actually being met.

21 They've become, in my opinion, targets that  
22 lack enforceability because they haven't been met with  
23 the frequency that was intended.

24 MR. O'HANLON: Have you proposed any  
25 specific -- as you put it -- exception language to

1 replace the language that's in the current Biological  
2 Opinion?

3 WITNESS SHUTES: I haven't proposed any.

4 MR. O'HANLON: And for carryover storage at  
5 Trinity Reservoir, CSPA is referring to recommendations  
6 of the PCFFA proposal in this proceeding, correct?

7 WITNESS SHUTES: That's what I initially  
8 stated, although I did indicate that, on review, we  
9 might consider something different in rebuttal.

10 MR. O'HANLON: But you have no specific  
11 proposal aside from whatever PCFFA is proposing at this  
12 time; is that right?

13 WITNESS SHUTES: That's correct. Again, as I  
14 stated in my testimony and I stated in my oral  
15 testimony earlier, there needs to be requirements at  
16 each of the reservoirs, otherwise impacts are simply  
17 going to be directed at those reservoirs for which  
18 there are no requirements.

19 MR. O'HANLON: All right. And for carryover  
20 storage at Folsom, is CSPA deferring to the Water  
21 Forum's proposal in this proceeding?

22 WITNESS SHUTES: Yes. At least I am. I don't  
23 think that's an official position of CSPA at this time.

24 MR. O'HANLON: But you yourself have no other  
25 proposal for carryover storage at Folsom; is that

1 correct?

2 WITNESS SHUTES: I do not. And I would point  
3 out that the folks at Folsom have the benefits of many  
4 years of modeling models that were accessible and  
5 usable. And they went through a large number of  
6 iterations to develop their proposed flows and  
7 carryover storage targets.

8 I think a process such as that would be --  
9 that has that kind of technical sophistication and  
10 integrity would be appropriate for both Trinity and  
11 Shasta. I haven't seen that.

12 And so what that means with Folsom is, not  
13 having participated in those discussions, I really  
14 don't feel that I'm in a position to second guess what  
15 a wide variety of stakeholders came up with. And as  
16 far as the other reservoirs are concerned, I don't  
17 think there's been anywhere near that kind of effort to  
18 work out what appropriate carryover storage targets  
19 would be.

20 MR. O'HANLON: Has CSPA done any modeling of  
21 any carryover storage requirements at Trinity, Shasta,  
22 or Folsom

23 WITNESS SHUTES: No. I'm somewhat aware of  
24 some of the modeling that's taken place at Folsom. But  
25 I have not been anything other than sort of broadly

1 apprised of what some of it looked at.

2 MR. O'HANLON: Could we go back to CSPA-202  
3 Errata. First full paragraph that begins at Line 14,  
4 you propose that the Board incorporate into CV permits  
5 requirements related to fall redd dewatering at  
6 Sacramento River; is that correct?

7 WITNESS SHUTES: That's correct.

8 MR. O'HANLON: And in your case in chief, you  
9 haven't proposed any specific additions related to that  
10 condition, have you?

11 WITNESS SHUTES: Not a specific defined  
12 measure that's written as a condition.

13 MR. O'HANLON: The next two sentences you  
14 propose, as you put it, tightening the requirements in  
15 water rights order 90-05 correct

16 WITNESS SHUTES: I do

17 MR. O'HANLON: And again, has CSPA proposed  
18 any specific tightening requirements for this  
19 proceeding?

20 WITNESS SHUTES: No, it just pointed out the  
21 general need to do so.

22 MR. O'HANLON: And there is a tension between  
23 conserving cold water in storage at Shasta and  
24 maximizing the area downstream that has appropriate  
25 temperatures, correct?

1                   WITNESS SHUTES: I'm sorry. Would you repeat  
2 that again?

3                   MR. O'HANLON: Sure. There's a tension  
4 between conserving cold water storage in Shasta and  
5 maximizing the area downstream with appropriate  
6 temperatures, correct?

7                   WITNESS SHUTES: There is.

8                   MR. O'HANLON: And isn't it correct that  
9 that's why WRO 90-05 has flexibility regarding where  
10 the temperature compliance will occur?

11                   WITNESS SHUTES: I think there's also part  
12 of -- that's part of the reason -- I think part of the  
13 reason is the amount of water that the Bureau delivers  
14 in any given year to various parties, both along the  
15 Sacramento River and into the Delta for export.

16                   MR. O'HANLON: In the next paragraph beginning  
17 at Line 22, you propose limiting exports of stored  
18 water through both the North Delta diversion and  
19 existing South Delta facilities.

20                   You say, "If such export will cause violation  
21 of the Sacramento River temperature standards"; is that  
22 right?

23                   WITNESS SHUTES: That's correct.

24                   MR. O'HANLON: Now, I was perplexed a bit by  
25 this testimony. Are you contending that diversions in

1 those locations would cause exceedance of temperature  
2 standards at the locations of the North Delta diversion  
3 or in the South Delta?

4 WITNESS SHUTES: I think that what I'm talking  
5 about is not only diversions to tell you how much water  
6 to release, but over a period of a year or multiple  
7 years, assuring that you're not making discretionary  
8 releases such that you later find that -- that you're  
9 not able to meet the temperature requirements along the  
10 Sacramento River. And I understand that that's not a  
11 trivial or a simple undertaking.

12 MR. O'HANLON: Let me ask this perhaps a  
13 different way. If water is released from storage in  
14 Shasta, it produces storage in Shasta regardless of how  
15 the water is later used, correct?

16 WITNESS SHUTES: That's correct.

17 MR. O'HANLON: So it would have that effect  
18 regardless of whether the water was diverted, say,  
19 North of the Delta or South of the Delta, correct?

20 WITNESS SHUTES: In the immediate -- in the  
21 instant moment, yes, it would. What I'm talking about,  
22 though, is assuring that -- I mean, part of the  
23 calculus here is also the temperature of water in  
24 Shasta Reservoir. And that's in substantial part a  
25 function of how much storage there is in Shasta



1 Reservoir.

2           So if you release water in the previous year  
3 in order to meet exports, or for whatever reason, on a  
4 discretionary basis, and -- you can find in the  
5 following year that you need to release more water than  
6 you would have if the water that you were able to  
7 release would be colder or when you were able -- when  
8 you were able to manage the temperatures more carefully  
9 of water that you're releasing from Shasta with a  
10 temperature control device.

11           MR. O'HANLON: Thank you, Mr. Shutes. I have  
12 no further questions for you.

13           Good afternoon, Mr. Stokely.

14           WITNESS STOKEY: Good afternoon.

15           Could we please have Mr. Stokely's testimony  
16 CSPA-220. And specifically Page 3 of his testimony.

17           Mr. Stokely, in your testimony here, you refer  
18 to some House and Senate committee reports that make  
19 reference to use of Trinity water in the San Luis Unit,  
20 correct?

21           WITNESS STOKEY: Correct.

22           MR. O'HANLON: And the San Luis Unit is  
23 located in the western side of the San Joaquin Valley;  
24 is that right?

25           WITNESS STOKEY: Correct.

1           MR. O'HANLON: Could we please have CSPA  
2 Exhibit 350, which is the Trinity River Act of 1955.

3           Mr. Stokely, are you familiar with this  
4 statute?

5           WITNESS STOKELY: I am.

6           MR. O'HANLON: I'd like to refer you to the  
7 very first line of Section 1.

8           Mr. Baker, perhaps you could expand that a  
9 little bit.

10           Where it says, "Congress is authorizing the  
11 Trinity River Division for the principal purpose of  
12 increasing the supply of water available for irrigation  
13 and other beneficial uses in the Central Valley of  
14 California," correct?

15           WITNESS STOKELY: Correct.

16           MR. O'HANLON: And the Central Valley includes  
17 a much larger area than the San Luis Unit, correct?

18           WITNESS STOKELY: Correct.

19           MR. O'HANLON: Are you aware of any provision  
20 in this Act that limits the use of water supply created  
21 in the Trinity River Division to uses in the San Luis  
22 Unit?

23           WITNESS STOKELY: No.

24           MR. O'HANLON: In fact, this Act doesn't even  
25 mention the San Luis Unit, does it?

1                   WITNESS STOKELY: No, the House and Senate  
2 committee reports do.

3                   MR. O'HANLON: But the Act itself does not,  
4 correct?

5                   WITNESS STOKELY: That is correct.

6                   MR. O'HANLON: And at the time Congress passed  
7 this Act, it had not yet authorized the San Luis Unit;  
8 is that correct?

9                   WITNESS STOKELY: That is correct.

10                  MR. O'HANLON: Do you know what year Congress  
11 did authorize the San Luis Unit?

12                  WITNESS STOKELY: 1960.

13                  MR. O'HANLON: So that was five years later?

14                  WITNESS STOKELY: Yes.

15                  MR. O'HANLON: All right. So Reclamation has  
16 no ability to ensure that all the water that originates  
17 in the Trinity River Division goes to the San Luis  
18 Unit, correct?

19                  WITNESS STOKELY: Correct.

20                  MR. O'HANLON: And to your knowledge, did  
21 Reclamation move water from the Trinity River watershed  
22 over to the Sacramento River watershed in 2014?

23                  WITNESS STOKELY: Yes, they did.

24                  MR. O'HANLON: And to your knowledge, did  
25 Reclamation do that in 2015?

1 WITNESS STOKELY: Yes.

2 MR. O'HANLON: Do you know what the  
3 contractual indications were for San Luis Water  
4 Contractors in those years?

5 WITNESS STOKELY: Zero percent.

6 MR. O'HANLON: So isn't it true, Mr. Stokely,  
7 that the water supply developed by the Trinity River  
8 Division is used for multiple CVP purposes in multiple  
9 locations?

10 WITNESS STOKELY: That's correct.

11 MR. O'HANLON: I have no further questions.

12 CO-HEARING OFFICER DODUC: Thank you,  
13 Mr. O'Hanlon.

14 Ms. Meserve.

15 CROSS-EXAMINATION BY MS. MESERVE

16 MS. MESERVE: Good afternoon, Osha Meserve for  
17 LAND, et al. My questions are primarily for Tom Cannon  
18 regarding fish screens, diversions flows, and those  
19 kinds of issues. However, if Mr. Shutes should have an  
20 additional answer that will be helpful based on his  
21 experience and his testimony, that would be fine.

22 So, Mr. Cannon, in your testimony you  
23 reference problems on Page 2 with adequate fish  
24 protection from entrainment at the proposed North Delta  
25 diversions. And you reference these blog posts written

1 by -- is that yourself and Mr. Vogel?

2 WITNESS CANNON: Yes.

3 MS. MESERVE: And are you aware of whether  
4 Mr. Vogel as worked on fish screen design or is  
5 otherwise familiar with those types of projects?

6 WITNESS CANNON: Yes, he's very familiar.

7 MS. MESERVE: Do you have any example projects  
8 in mind?

9 WITNESS CANNON: Red Bluff Diversion Dam,  
10 GCID, Tehema-Colusa Irrigation District, ACID as well,  
11 Anderson-Cottonwood Irrigation District.

12 MS. MESERVE: And Mr. Vogel is presently a  
13 private consultant at this time, correct?

14 WITNESS CANNON: Yes.

15 MS. MESERVE: But did he used to work for a  
16 fishery agency?

17 WITNESS CANNON: Yes, Fish and Wildlife  
18 Service in Red Bluff.

19 MS. MESERVE: And are you -- do you have  
20 experience with fish screen design for large fish  
21 projects?

22 WITNESS CANNON: Yes.

23 MS. MESERVE: I'm sorry, large diversion  
24 projects.

25 Could we please show DWR Exhibit 1051? And

1 this is just a picture of the Red Bluff Diversion. Are  
2 you at all familiar, Mr. Cannon, with the Red Bluff  
3 Diversion?

4 WITNESS CANNON: Yes, I was a consultant on  
5 that project at one time as well.

6 MS. MESERVE: And is there -- and this is just  
7 south of Red Bluff, right?

8 WITNESS CANNON: Yes.

9 MS. MESERVE: Is there any tidal influence at  
10 that location just south of Red Bluff?

11 WITNESS CANNON: No.

12 MS. MESERVE: So there isn't any change in  
13 river stage due to tides?

14 WITNESS CANNON: No.

15 MS. MESERVE: Now, thinking about the proposed  
16 North Delta diversion locations, are there tides twice  
17 per day?

18 WITNESS CANNON: Yes.

19 MS. MESERVE: And would there be tidal  
20 reversals that would basically have water going  
21 upstream twice per day, potentially?

22 WITNESS CANNON: Yes, when the Freeport flow  
23 falls below something like 30- or 35,000 or 25-,  
24 somewhere in that range.

25 MS. MESERVE: Now, thinking about the

1 operation of those diversions, how would changes in  
2 tide affect the engineered sweeping approach velocities  
3 at the base of the screens?

4 WITNESS CANNON: Well, a slack tide, if there  
5 were flows down in the 25- to 35- range, a slack tide  
6 could be zero sweeping velocities.

7 MS. MESERVE: And do you know if the current  
8 conceptual screen designs compensate for those changes  
9 to maintain hydraulic criteria?

10 WITNESS CANNON: I can't answer that. There  
11 wasn't enough detail for me to address that.

12 MS. MESERVE: And do you know if there is any  
13 plan to stop diverting at high -- at slack or reverse  
14 tides because of sweeping velocities?

15 WITNESS CANNON: I saw nothing mentioned about  
16 that in documentation.

17 MS. MESERVE: Would you describe the proposed  
18 fish screen conceptual design that you've seen as  
19 experimental?

20 WITNESS CANNON: I would say it would be an  
21 advanced design, screen design, all the elements of the  
22 literature and the science on the subject. But whether  
23 it would work or not would be another question. It is  
24 an advanced screen technology.

25 MS. MESERVE: And in your mind, would it be

1 similar to the Red Bluff Diversion that we looked at a  
2 minute ago?

3 WITNESS CANNON: No. It would be more  
4 advanced. They're still working on Red Bluff.

5 MS. MESERVE: So it would need to be different  
6 than the technologies being employed at Red Bluff?

7 WITNESS CANNON: It certainly is. It's not an  
8 active screen. Red Bluff tries to push fish in a  
9 certain direction and collect them and put them in a  
10 certain place in the river out of danger. But this one  
11 is just a screen.

12 MS. MESERVE: So there's no part of the design  
13 that attempts to keep fish away from the face of the  
14 screen; is that correct?

15 WITNESS CANNON: That's correct.

16 MS. MESERVE: Now, with respect to the ITP  
17 issued by DFW, are you at all familiar with that  
18 document?

19 WITNESS CANNON: Yes.

20 MS. MESERVE: And are you aware that the that  
21 document included certain standards for protection of  
22 winter and spring-run Chinook salmon with the sweeping  
23 velocities?

24 WITNESS CANNON: Yes.

25 MS. MESERVE: And would you be concerned that



1 other fish besides winter-run and spring-run Chinook  
2 salmon weren't being included in these protections?

3 WITNESS CANNON: Yes, just like at the South  
4 Delta diversions, the screens are designed for big  
5 smolts like those two runs. The other species life  
6 stages at the screens would be a much greater risk to  
7 damage.

8 MS. MESERVE: And in your opinion as a  
9 fisheries biologist, those other fish would also be  
10 public trust resources in the Delta?

11 WITNESS CANNON: Yes, all of them.

12 MS. MESERVE: And there's a long list of fish  
13 that occur the Delta, correct?

14 WITNESS CANNON: Yes, both native and  
15 non-native.

16 MS. MESERVE: Now, going back to the ITP, are  
17 you familiar with the trigger for pulse flow protection  
18 being five fish called in the Knight's Landing screw  
19 trap?

20 WITNESS CANNON: Yes.

21 MS. MESERVE: And that is only for the  
22 October-to-June period, correct?

23 WITNESS CANNON: Yes, when winter-run and  
24 spring-run would be it.

25 MS. MESERVE: And there are fish in the

1 Sacramento River in the Delta during other periods July  
2 through September, aren't there?

3 WITNESS CANNON: Yes.

4 MS. MESERVE: And the pulse flow protections  
5 would only apply if the winter or spring-run Chinook  
6 were caught in the screw trap the way the permit  
7 condition is written now, correct?

8 WITNESS CANNON: Yes. It's -- the 2009  
9 Biological Opinion had specific criteria, which it  
10 appears there is they're still going to use despite the  
11 population being 100th of what it was before, during  
12 2009.

13 MS. MESERVE: So would it be your opinion that  
14 a different criteria might be necessary to try to  
15 protect even just those two fisheries?

16 WITNESS CANNON: Yes. And they have other  
17 criteria, like the survival of radio tagged late-fall  
18 hatchery fish going buy the North Delta diversion.

19 MS. MESERVE: Can you look at, please Exhibit  
20 LAND-217, which is a cross-examination exhibit used  
21 previously.

22 And going from the ITP, which discusses the  
23 five-fish trigger at Knight's Landing, and just looking  
24 at the layout of where the Feather River and the  
25 American River join the Sacramento River, the screw

1 trap results up there in Knight's Landing, they  
2 wouldn't be protective of fish coming from those other  
3 river systems, would they?

4 WITNESS CANNON: No. They would not be  
5 protective.

6 MS. MESERVE: And just maybe going down the  
7 page a little bit to the picture of the screw trap, do  
8 you have any experience or knowledge regarding the  
9 trapping efficiencies of these kinds of devices in  
10 terms of how they show the numbers that are actually in  
11 the system from the numbers that appear in the traps?

12 WITNESS CANNON: Yes, the standard technique  
13 is to take marked fish above them and see what the  
14 percentage recovery is under different loads and  
15 different life stages.

16 Rarely is that done, but when it is done it  
17 shows that large -- the larger the fish, the more able  
18 they are to avoid the screw trap.

19 MS. MESERVE: So in your experience, can you  
20 opine on whether the screw traps are a reliable  
21 indicator of fish?

22 WITNESS CANNON: Like most of the net used in  
23 the IEP, they have a long-term database; they may be  
24 biased towards total numbers. But as a relative  
25 indicator, they remain a valuable tool in managing the

1 fisheries or managing the rules for pulse flows for  
2 salmon at Knight's Landing.

3 MS. MESERVE: And does it sound correct that  
4 there's about 48 miles of river between the screw trap  
5 at Knight's Landing and the northern most proposed  
6 intake at Clarksburg?

7 WITNESS CANNON: Yes.

8 MS. MESERVE: Might be you concerned that, if  
9 the screw trap was checked only once per day, that  
10 there might not be the opportunity to change two pulse  
11 flow protections in time to protect fish passing  
12 through?

13 WITNESS CANNON: Well, an annual pattern at  
14 Knight's Landing screw trap is a very effective tool  
15 for protecting when the salmon start moving towards the  
16 Delta. And they've been able to relate that pattern to  
17 specific conditions like pulse flows.

18 The first or second pulse flow in the  
19 Sacramento River usually brings them to the screw trap  
20 and to the Delta at Sacramento and at the South Delta  
21 pumps.

22 MS. MESERVE: And are you aware that -- of the  
23 pulse flow protections that are proposed as part of  
24 this project?

25 WITNESS CANNON: I've always been confused

1 because I thought it was either the first one or the  
2 second one; whether it was the third one or fourth one  
3 or how much of a pulse flow -- I guess the screw trap  
4 catch would be an indicator of is this the big pulse or  
5 not. And usually one or two pulses do about 90 percent  
6 or more of the winter-run migration from Red Bluff.

7 MS. MESERVE: But it wouldn't be protective of  
8 any other fish runs, such as the fall-run Chinook  
9 salmon?

10 WITNESS CANNON: Absolutely not.

11 MS. MESERVE: And so even if the screw trap  
12 caught other fish besides the winter and spring-run  
13 Chinook, is it your understanding there wouldn't be any  
14 change in operations of the proposed North Delta  
15 diversions?

16 WITNESS CANNON: There's always adaptive  
17 management.

18 MS. MESERVE: So --

19 WITNESS CANNON: I expect them, if they had a  
20 huge slug of spring-run fry or fall-run fry, that they  
21 would consider it during the adaptive management,  
22 salmon and steelhead technical committee meetings, and  
23 there would be a recommendation or maybe not.

24 MS. MESERVE: So there wouldn't be a  
25 requirement in the permit that you know of that would

1 require a change in operations if it wasn't one of the  
2 triggers listed in the ITP though, correct?

3 WITNESS CANNON: Oftentimes it would be take  
4 at the pumps that would drive the situation.

5 MS. MESERVE: And when you say "take at the  
6 pumps" do you mean at the existing South Delta pumps?

7 WITNESS CANNON: Yes, there's a requirement  
8 and take limits at South Delta.

9 MS. MESERVE: Are you aware that the ITP  
10 includes the possibility of additional monitoring  
11 stations besides the Knight's Landing location?

12 WITNESS CANNON: Yes. And University of  
13 Washington presents daily data from Knight's Landing,  
14 Sacramento, and from the pumps. And those are usually  
15 pretty accurate. And having more would just, you know,  
16 round out the information a little better.

17 MS. MESERVE: If someone was trying to figure  
18 out whether the permit condition in the ITP was being  
19 met in terms of survival past the proposed North Delta  
20 diversions, wouldn't you need a lot more monitoring  
21 stations?

22 WITNESS CANNON: For survival estimates of,  
23 like, American River fry, absolutely. I don't even  
24 know if that's possible because of the intensity of the  
25 sampling that would be required. And the variability

1 from day to day -- it would just be a very difficult  
2 proposition.

3 MS. MESERVE: So do you -- when you see the  
4 survival rates listed in the ITP, do you feel certain  
5 that those will be implementable and provable with  
6 monitoring?

7 WITNESS CANNON: They will definitely release  
8 often groups of late-fall radio tagged fish. And they  
9 will be able to determine what the survival of those  
10 hundred fish that day would be. And that's what  
11 they're going to use.

12 MS. MESERVE: So the tagging would be a  
13 separate endeavor from the screw trap, right?

14 WITNESS CANNON: Yeah. It's just another --  
15 this would be a direct estimate of survival past the  
16 screens.

17 MS. MESERVE: How would the operators know how  
18 many fish made it past the screens?

19 WITNESS CANNON: Detection of the radio tags  
20 and signals below the screens.

21 MS. MESERVE: Would there need to be a new  
22 system installed south of the proposed intakes?

23 WITNESS CANNON: There would be a whole new  
24 system for the entire radio tagging program.

25 MS. MESERVE: And have you seen anything in

1 the permits or your other review that actually requires  
2 development of a whole new system that you're  
3 mentioning?

4 WITNESS CANNON: The Biological Opinion and  
5 ITPs pretty much say that.

6 MS. MESERVE: Now, you're aware that sometimes  
7 the operations that are being discussed here have been  
8 referred to as real-time operations?

9 WITNESS CANNON: Yes.

10 MS. MESERVE: Have you seen that phrase? What  
11 does that phrase mean to you?

12 WITNESS CANNON: Well, there's historical  
13 record of real-time operations, and there's real-time  
14 operations. And from my own experience, real-time  
15 operations is to monitor impingement hourly, daily,  
16 annually to see if there's a problem. And they have  
17 nothing like that proposed.

18 MS. MESERVE: In fact, when there are  
19 references to real-time operations, isn't it primarily  
20 in reference to the screw trap at Knight's Landing some  
21 40-plus miles north of the proposed diversions?

22 WITNESS CANNON: Well, that tells them if --  
23 if the fish are coming. It doesn't say what their  
24 mortality or what the risks are.

25 MS. MESERVE: So is it your understanding that



1 these details of what actually would be real-time  
2 operations would be developed at some later point?

3 WITNESS CANNON: If the fish are coming, I  
4 don't know what they'd do other than shut down because  
5 they have no measure of impingement or entrainment in  
6 their program.

7 MS. MESERVE: So how would -- going back to my  
8 prior question. How could the operators show that they  
9 have a 95 percent survival rate, for instance, if  
10 there's no method of monitoring entrainment or  
11 impingement?

12 WITNESS CANNON: 95 of those hundred radio  
13 tags would pass the screen successfully, big six-inch,  
14 fall-run, late fall-run hatchery salmon.

15 MS. MESERVE: Now, moving on to flows, as a  
16 fisheries biologist, do you think that flows are one of  
17 the most important drivers of fisheries in a river?

18 WITNESS CANNON: Yes.

19 MS. MESERVE: And also in an estuary like the  
20 Delta?

21 WITNESS CANNON: More so, yes?

22 MS. MESERVE: And are you aware that, in this  
23 proceeding, the petitioners have alleged that the  
24 project would align operations to better reflect  
25 natural seasonal flow patterns?

1           WITNESS CANNON: That's the intent is to  
2 provide highs and lows as occur naturally.

3           MS. MESERVE: Is there anything that you have  
4 seen in your review of this project that would restore  
5 highs and lows in the hydrograph?

6           WITNESS CANNON: Well, they're not going to do  
7 much on the big flows. And they'll do a lot on the  
8 smaller flows unless they get to critical levels, then  
9 they'll do nothing. So the highs and very lows won't  
10 change.

11          MS. MESERVE: Wouldn't the diversions -- and  
12 thinking about the bypass flow criteria that are 5,000  
13 or 7,000 cfs depending on the time of year, wouldn't a  
14 diversion in fact tend to just lop off all of the  
15 higher flows when other requirements weren't  
16 controlling?

17          WITNESS CANNON: It depends. One of my posts,  
18 I forget which exhibit, shows that, you know, between  
19 25- and 35-, there's a lot of difference and a lot of  
20 variability.

21          MS. MESERVE: A lot of difference and  
22 variability in what?

23          WITNESS CANNON: Variability in the effect.  
24 You can affect Steamboat Slough. You can affect  
25 Georgiana, Three Mile Slough. 35- and you take out 9-

1 is a lot different than 25- and you take out 9-. The  
2 standard applying at that time is 7,000 at  
3 Rio Vista, you can take 9- out of 16-. I mean, every  
4 circumstance is different, and every season is  
5 different, and every species' response to that change  
6 will be different.

7 MS. MESERVE: I just ask for about five  
8 minutes. I can wrap up quickly. Thank you.

9 In what you just described, Mr. Cannon, does  
10 any of that change the operation of the river to  
11 more -- to better reflect natural seasonal flow  
12 patterns?

13 WITNESS CANNON: Like I said before, the high  
14 flows won't be affected very much, and they wouldn't do  
15 that at low flows, so it's just going to be a change in  
16 the intermediate flows.

17 MS. MESERVE: But it wouldn't make more  
18 natural flow patterns, would it?

19 WITNESS CANNON: Has nothing to do with  
20 natural flow patterns. It's just the operational  
21 criteria for the North Delta diversion based on  
22 different Freeport flows.

23 MS. MESERVE: So there's nothing in the  
24 project that tries to mimic natural flows; is there?

25 WITNESS CANNON: Well, there certainly could

1 be if it affected reservoir storage.

2 MS. MESERVE: But that's not what you've seen  
3 so far, right?

4 WITNESS CANNON: They're not going to change  
5 reservoir releases.

6 MS. MESERVE: Okay. Now, in thinking now  
7 about the Delta Cross Channel, are you aware of whether  
8 the Delta Cross Channel would be operated any  
9 differently under the proposed project?

10 WITNESS CANNON: Seems it would not be, but it  
11 could be and be a benefit if they changed it and/or it  
12 could get worse because the split below the intakes at  
13 Delta Cross Channel will be completely different  
14 hydraulics than it is right now.

15 MS. MESERVE: And if the North Delta  
16 diversions weren't built, do you think there would be a  
17 way to reduce the number of fish that end up in the  
18 Delta Cross Channel and go to the South Delta?

19 WITNESS CANNON: That's a very difficult  
20 question to answer. My own personal opinion is keep  
21 the Delta Cross Channel open because then they won't go  
22 down Georgiana Slough and get trapped for sure. At  
23 least if the Delta Cross Channel is open, everybody has  
24 a chance to make it out.

25 MS. MESERVE: And in your opinion, are there

1 improvements that could be taken absent the North Delta  
2 diversions in the South Delta that could reduce take by  
3 those existing pumps?

4 WITNESS CANNON: Certainly reducing the take  
5 and keeping the fish away from those absolutely  
6 obsolete facilities would be helpful.

7 MS. MESERVE: Do you think it would be  
8 feasible, given your experience with these facilities  
9 in the Delta?

10 WITNESS CANNON: There are many alternatives  
11 that have been evaluated by DWR. The Indian River  
12 configuration, getting rid of Clifton Court. There are  
13 many things they have considered that would be a  
14 benefit.

15 MS. MESERVE: Do you have any opinion as to  
16 why these other alternatives have not been pursued?

17 WITNESS CANNON: Not really.

18 MS. MESERVE: If some of these alternatives  
19 were pursued, do you think that might make exports out  
20 of the South Delta more reliable, even absent the  
21 proposed new diversions?

22 CO-HEARING OFFICER DODUC: Let me interrupt  
23 here and ask. I'm curious, Ms. Meserve, you are  
24 seeming to ask this witness questions about  
25 alternatives that were not or were analyzed in the CEQA

1 document. How is that relevant to the key hearing  
2 issues before us?

3 MS. MESERVE: I think the questions go to the  
4 public interest factors. There's been portions of the  
5 petition that have indicated that this is really the  
6 only solution that could assist with reliable water  
7 supplies. And there's even been allegations that it  
8 would help restore the ecosystem.

9 So I'm just simply trying to flush out, you  
10 know, whether that's true.

11 CO-HEARING OFFICER DODUC: It's a tight line  
12 but since you're almost done, all right.

13 MS. MESERVE: Shall I ask the question again?

14 WITNESS CANNON: Clifton Court Forebay, every  
15 study has shown that 90 percent of the fish die before  
16 they get to the salvage facilities. So why would they  
17 engineer a new Clifton Court Forebay in the new design  
18 when they could have gotten rid of it? That's my  
19 answer.

20 MS. MESERVE: Just if you could just explain,  
21 what do you mean by getting rid of the Clifton Court  
22 Forebay?

23 WITNESS CANNON: They could have put an intake  
24 right there on the Old and Middle Rivers and not even  
25 had a Clifton Court Forebay for the continuing South

1 Delta diversion.

2 MS. MESERVE: And that's something that still  
3 could be done today?

4 WITNESS CANNON: Yes.

5 MS. MESERVE: Thank you.

6 CO-HEARING OFFICER DODUC: Mr. Ruiz.

7 And if you're okay with that, Debbie, we'll  
8 take a break after Mr. Ruiz is done. I've always found  
9 him to be extremely efficient.

10 CO-HEARING OFFICER MARCUS: And courteous.

11 CO-HEARING OFFICER DODUC: And courteous, yes.

12 CROSS-EXAMINATION BY MR. RUIZ

13 MR. RUIZ: Good afternoon, Dean Ruiz for the  
14 South Delta Water Agency parties. I have questions for  
15 Mr. Jennings mostly and a few for Mr. Cannon.

16 Just for a heads-up and efficiency, the topics  
17 for Mr. Jennings will deal with his testimony regarding  
18 the AFRP doubling, water temperatures, drought  
19 biological performance targets, and adaptive  
20 management. There's only really like one question on  
21 each one of those. That's not as long as it might  
22 seem.

23 For Mr. Cannon a couple questions on South  
24 Delta velocities, salinity criteria, low salinity  
25 zones, bypass flows, and a question on Delta smelt, so.

1           Mr. Jennings, if you can referring refer to  
2 your testimony at Page 13.

3           Do you have that, sir?

4           WITNESS JENNINGS: Okay.

5           MR. RUIZ: About three quarters down the page,  
6 you testified about the AFRP fish doubling program.

7           WITNESS JENNINGS: Mm-hmm.

8           MR. RUIZ: And the doubling program you  
9 referenced, is it your understanding that's a statutory  
10 requirement or just a policy goal or objective?

11           WITNESS JENNINGS: It's -- I think it's a  
12 statutory requirement, if at all reasonably possible.  
13 And I suppose there's some time, but it  
14 is -- the Central Valley Improvement Act was a law by  
15 Congress.

16           MR. RUIZ: Thank you. And the mandates of the  
17 fish doubling program as you allude to in your  
18 testimony, they have not been met, correct?

19           WITNESS JENNINGS: They've never been met.

20           MR. RUIZ: They haven't been close to being  
21 met, correct?

22           WITNESS JENNINGS: No, they've actually  
23 declined.

24           MR. RUIZ: And that was part of a little bit  
25 of confusion I had because you've indicated they've



1 declined, but you also testified that during the first  
2 12 years of the doubling program, it was more  
3 successful than the last eight years. What do you mean  
4 by that? Can you explain that in a little more detail?

5 WITNESS JENNINGS: Well, I mean, they've been  
6 declining from the baseline period. And that has  
7 accelerated in the last ten years.

8 MR. RUIZ: Do you have an opinion as to why  
9 there's been this fall-off or additional fall-off in  
10 the last eight to ten years?

11 WITNESS JENNINGS: Well, I -- I -- water  
12 operations, drought. I mean, you know, it can be a  
13 number of things. But certainly in my opinion there's  
14 been serious problems with -- in Sacramento since, the  
15 system with temperature management before, below  
16 Shasta.

17 MR. RUIZ: Referring to Page 15 of your  
18 testimony to the bottom of the page. Do you have that?

19 WITNESS JENNINGS: Yes.

20 MR. RUIZ: You testify about SWRCB 90-05 and  
21 the fact that it's failed to protect the river stretch  
22 between Hamilton and Red Bluff. Do you recall that?

23 WITNESS JENNINGS: Yes.

24 MR. RUIZ: And you're talking about -- is it  
25 correct you're talking about a failure to set a

1 temperature requirement -- a temperature requirement  
2 compliance point along that stretch of the river,  
3 right?

4 WITNESS JENNINGS: Well, yes, to incorporate  
5 it within the CVP permit.

6 MR. RUIZ: And has that omission been  
7 corrected by the Board? Has that changed since the  
8 adoption of SWRCB 90-05?

9 WITNESS JENNINGS: No.

10 MR. RUIZ: What, in your opinion, has been the  
11 significance of that omission?

12 WITNESS JENNINGS: Well, the Regional Board's  
13 baseline plan set that temperature according to  
14 controllable factors. In an order subsequent to  
15 90-05 -- I think it was 92-02 -- I think the State  
16 Board clarified what it meant in Order 90-05. And they  
17 clarified that -- that delivery for controllable  
18 factors.

19 One of the problems that -- the National  
20 Marine Fishery Service cannot require the Bureau to cut  
21 deliveries. I mean, that's -- they have requested --  
22 the State Board requested the Bureau to cut deliveries  
23 in certain times. But -- and that's one of the flawed  
24 problems of the Sacramento-San Joaquin -- I mean  
25 Sacramento Temperature Management Task Force is that

1 they only have the water that the Bureau has agreed to  
2 give them. But it's not showing.

3 And so there are times when, you know, even in  
4 the deepest of the droughts over the last few years,  
5 the Sacramento Valley Contractors were getting well  
6 over a million acre-feet. And of course, the problem  
7 is that we can't get out of the stair-step of  
8 exporting -- of draining the reservoirs too much in a  
9 wet year. And the expectation is the next year is  
10 going to be wet or normal.

11 And once you get behind the -- once you get  
12 behind the ball, I mean, the trend, it's hard to catch  
13 up.

14 MR. RUIZ: Yes. Okay. Thank you.

15 Referring you to Page 17 of your testimony,  
16 towards the bottom, you indicate that it's your opinion  
17 that USBR's water right permits must be modified such  
18 that they comply with adopted water quality standards  
19 for temperature, correct? That's your opinion,  
20 correct?

21 WITNESS JENNINGS: Well, yes. I mean, I think  
22 that -- to -- yes.

23 MR. RUIZ: Do you have an opinion as to how  
24 the USBR's permits should be modified to achieve  
25 compliance with the adopted temperature requirements

1 that you referred to?

2 WITNESS JENNINGS: Well, I think the State  
3 Board's quite capable of developing that. But I  
4 wouldn't want to just come up and -- it is complicated.  
5 I mean, you know, if you're going to require strict  
6 compliance, there's a cost to that. I mean, there are  
7 no easy solutions here.

8 But the requirement to comply with the basin  
9 plan temperature requirements needs to be in the  
10 permit.

11 MR. RUIZ: Referring you to Page 19 of your  
12 testimony, again, towards the bottom, the last few  
13 lines of that page, you testify about how fish have  
14 responded to recent droughts. It's your opinion -- and  
15 you point this out -- that droughts are not uncommon in  
16 California, correct?

17 WITNESS JENNINGS: More than 40 percent of the  
18 time. I mean, in that -- I pulled that out of a DWR  
19 publication. And it's where I first noticed it and  
20 added them up. And it was more than 40 years over the  
21 last hundred that they considered significant  
22 multi-year droughts.

23 MR. RUIZ: Also along in that same area of  
24 your testimony, you talk about by comparing February  
25 through June Delta outflows or percentage of unimpaired

1 flow, fish experience super critical conditions 50  
2 percent of the time. Do you recall that testimony?

3 WITNESS JENNINGS: I'm sorry. Where's that  
4 testimony?

5 MR. RUIZ: At the bottom of Page 19, same  
6 area.

7 WITNESS JENNINGS: Yeah, that's outflow, the  
8 percentage of unimpaired.

9 MR. RUIZ: What do you mean, though, that the  
10 fish end up experiencing super critical conditions  
11 50 percent of the time?

12 WITNESS JENNINGS: It runs from 19 to  
13 40 percent. I mean, that's equivalent of basically a  
14 super critical drought.

15 And that happened to be the language that the  
16 Bay Institute had placed on it. It originally came  
17 from an analysis that they did. And that -- looking at  
18 the part of unimpaired runoff that has gone at outflow,  
19 essentially -- essentially, fish get to the bay.  
20 It's -- it runs frequently into the 20, 25, 30 percent  
21 range.

22 MR. RUIZ: And that's a function of outflow as  
23 opposed, necessarily, to hydrology? That just ends up  
24 being the ultimate outflow result is what you're  
25 saying; is that correct?

1           WITNESS JENNINGS: Ultimate outflow as a  
2 result of all of the upstream used exports and whatnot.

3           MR. RUIZ: Referring you to Page 21 of your  
4 testimony, towards the top of that one third of that  
5 page, you testify about, "New Delta water quality  
6 standards placed on DWR and the Bureau must be clearly  
7 tied to biological performance targets."

8           What -- do you have specific types of  
9 performance -- biological performance targets in mind  
10 with regard to that opinion?

11           WITNESS JENNINGS: Well, seasons are variable.  
12 Fish populations go up and down. We know now in wet  
13 years fish populations rebound; in dry years, they  
14 suffer. But at a long-term average, there needs to be  
15 some standards, some biologically based standard that  
16 you can hold the projects accountable.

17           Like I said, EPA in 1995, followed a long  
18 process that issued a requirement that showed on the  
19 books that, based on a formula of out-migrating smolts  
20 that were tagged and released above and then caught at  
21 Chipps Island, that a percentage of that that they  
22 calculated would lead to a doubling of salmon  
23 populations. That's a requirement. I mean, and it was  
24 a requirement in a basin plan that conceivably could be  
25 enforced by someone.

1           But there needs to be something in there to  
2 drive improvement. We can always find excuses that --  
3 in a crunch, that, well, fish can pay the price, that  
4 we can do this.

5           Fish never really get the benefit of the  
6 doubt. Even in this last drought. Fish suffered;  
7 folks south suffered. But when the Board made their  
8 temporary urgency change petitions, it was shifted from  
9 fish to exports.

10           MR. RUIZ: And in that same area of your  
11 testimony, you discuss that, your opinion, there must  
12 be specific consequences on DWR and the Bureau or  
13 failing to comply with these biological performance  
14 standards.

15           Do you have specific types of consequences in  
16 mind that you would suggest that would be appropriate  
17 in your opinion, based on your experience?

18           WITNESS JENNINGS: Well, as someone that  
19 frequently enforces the Clean Water Act, I'm probably  
20 the wrong person to ask on that because the penalties  
21 there are substantial.

22           There needs to be something that will drive  
23 improvement, that will drive the standards. And it's  
24 got to be substantial.

25           By the same token, I mean, anything that

1 we're -- standards were enforced. Even the standards  
2 we have, if -- if they're not met, what's the  
3 consequence?

4 I mean, you know, when I quoted back in the  
5 '77 -- '76-'77 drought and '88 to '92, there were  
6 hundreds of violations. And, you know, I've seen the  
7 letter. Don Juan, God bless his sole, marvelous human  
8 being, but just telling the Bureau, "Well, you  
9 shouldn't do that. Let us know next time you're going  
10 to do it, but we're not going to prescribe any  
11 punishment" -- you know, the South Delta situation with  
12 the exceedance of salinity and the cease and desist  
13 order with a specific requirement to come back with a  
14 plan that then was superseded with another cease and  
15 desist order to come back with a plan, that was -- and  
16 then more time was given.

17 And to the best of my knowledge, unless it  
18 came out recently, the plan hasn't -- and what the  
19 Board ordered in 2006 still hasn't been done.

20 That lack of enforcement, I mean, I'm  
21 beginning to -- seriously, no one takes the Board  
22 seriously. If the Board promulgates an order, a water  
23 quality order or a direction, there needs to be  
24 consequences for blowing it off.

25 MR. RUIZ: Thank you. Just a couple of



1 questions with regard to adaptive management. Is it  
2 fair to say that, in your testimony, you speak  
3 extensively about adaptive management?

4 WITNESS JENNINGS: Well, I mean, in my  
5 computer I guess I've got well over a hundred published  
6 papers on adaptive management. I've made it a point to  
7 look at it because I can remember back in the old  
8 CalFed, that was the buzz word, "adaptive management."

9 And we've lived with adaptive management, the  
10 IEP, I mean, the applied management -- across the whole  
11 board. We've used adaptive management. And beyond  
12 the -- its track record, what's being proposed in  
13 WaterFix is a kind of a unique hybrid.

14 I mean, it's essentially a closed system.  
15 It's not like adaptive management programs that have  
16 been, you know, suggested like Glenn Canyon or the  
17 Everglades, which were big, robust public processes  
18 that still had serious problems failing. But they  
19 were -- they involved the public.

20 And basically this -- this adaptive management  
21 process and WaterFix is a closed door. It's a "trust  
22 us." And there's no place -- interaction between  
23 people, even legal users of water that may conceivably  
24 be harmed can plug into the system until they bring it  
25 to the State Board. But what they've essentially asked

1 is for the State Board to give them enormous latitude,  
2 you know, so that fewer and fewer things would get  
3 brought to the Board.

4 MR. RUIZ: Thank you. And you mentioned the  
5 adaptive management with regard to the CalFed  
6 processes. How did fish fair in your opinion, based on  
7 your experience as a result of the CalFed process?

8 WITNESS JENNINGS: I guess in my  
9 frustration -- and my frustration obviously has not  
10 been hidden. I mean, everybody can pick up on it.

11 It's not just -- I mean, between every major  
12 order the Board has issued, fish have declined.  
13 Between every biological opinion that has been issued,  
14 fish have declined. Between all of the -- and the  
15 emergence of adaptive management, fish have declined.  
16 I mean, it's a consistent.

17 You know, I mean, I ran the numbers, you know,  
18 from -- you know, at one point I was going after each  
19 other, after each biological opinion, after -- I mean,  
20 you know and it -- it's consistent broad decline.

21 And it's all because -- and it's the question  
22 that I've asked biologists for 20 years in this  
23 estuary, 30 years.

24 How do you take -- deprive an estuary of more  
25 than half its flow and fix it by taking away millions

1 of acre-feet of additional water? And how do you  
2 protect water quality? And in all of the efforts on  
3 the Mokelumne and streams, the IFIM studies, I mean,  
4 the in-stream studies -- when you start getting below  
5 70 percent, 70, 75 percent, you start getting  
6 irreparable damage. Well, in this estuary, we're down  
7 below a half.

8 And I don't think there is -- you know, it's  
9 just a tough situation. And I don't know that there's  
10 an answer other than more flow, which it's an  
11 oversubscribed system.

12 MR. RUIZ: Thank you. I just -- have no  
13 further questions for Mr. Jennings.

14 I have a few questions for Mr. Cannon.

15 Mr. Cannon, referring to your testimony  
16 CSPA-204, Page 5. If you can just take a look at that,  
17 at the bottom of the page.

18 WITNESS CANNON: Okay.

19 MR. RUIZ: You testify with regard to NMFS  
20 conclusion that CWF, California WaterFix, would result  
21 in a positive change in South Delta channel velocities.  
22 You don't agree with that conclusion, correct?

23 WITNESS CANNON: Right. I do not agree with  
24 it.

25 MR. RUIZ: And why you don't agree with that?

1           WITNESS CANNON: Well, first their conclusions  
2 are based on South Delta exports declining, which would  
3 increase positive channel flows. But I see no evidence  
4 that it would decline or decline at the right times  
5 when the change in flows would be appropriate and be a  
6 benefit.

7           MR. RUIZ: Referring to Page 12 of your  
8 testimony, towards the bottom, do you have that?

9           WITNESS CANNON: Yes.

10          MR. RUIZ: And you have that, in your view,  
11 more strict salinity criteria are needed for the late  
12 summer in the Central Delta; is that right?

13          WITNESS CANNON: Yes, in reference to the low  
14 salinity zone location.

15          MR. RUIZ: And is it your opinion that  
16 insufficient flows allow a low salinity zone to move  
17 into the Central Delta?

18          WITNESS CANNON: Yes. And the operating  
19 criteria seems to be keeping South Delta and Contra  
20 Costa Water District exports at less than 800, you  
21 know, micrograms per liter of salinity when it should  
22 be 200 or 300. They're managing on -- they actually  
23 managed to take salt in their operations in the summer.

24          MR. RUIZ: Well, you may have answered my next  
25 question, but I don't know if did you so completely.

1 That is, so, based on your testimony -- and you said  
2 that you believe that more stringent salinity criteria  
3 are necessary. What criteria did you believe  
4 specifically are necessary, if you have an opinion?

5 WITNESS CANNON: Well, they're the ones that  
6 are in CSPA-415. Essentially, just keep the salt out  
7 of the Delta. Keep the salt front at Emmaton and  
8 Jersey Point. I mean, it's very easy to do. It may  
9 cost water, but it's physically very easy to monitor  
10 and do.

11 MR. RUIZ: Thank you. Couple questions with  
12 regard -- more with regard to low salinity zones.  
13 Looking at Page 15 of your testimony with regard to --  
14 towards the bottom of your testimony. You also speak  
15 here about bypass flows. You say a bypass flow of  
16 7,000 cfs at the North Delta diversions is insufficient  
17 to protect Bay-Delta fish and their low salinity zone  
18 habitat. What is your opinion are the bases as to why  
19 you think that 7,000 cfs is insufficient?

20 WITNESS CANNON: Well, 7,000 cfs bypass flow  
21 with everything closed off, Delta Cross Channel and  
22 Delta exports at 10,000, obviously there's not going to  
23 be Delta outflow. And low salinity zone is going to be  
24 at Rio Vista. And they're going to be getting 800, you  
25 know, micrograms per liter at South Delta exports.

1 Salty water descends south into the farms, 7,000 isn't  
2 going to do it.

3 MR. RUIZ: What do you think will do it, based  
4 on your experience?

5 WITNESS CANNON: Whatever it takes to keep the  
6 salt out of the Delta. And it's usually around 10 to  
7 12 -- it depends on the tides. The tides can really  
8 force more water being released to make that the  
9 standards. The tides are very important because they  
10 act like a dam on the Delta and drive salt up into the  
11 Delta. And it takes more freshwater inflow when the  
12 tides are forcing salt into the Delta.

13 MR. RUIZ: Referring you to Page 26 of your  
14 testimony, the top third of that page. Do you have  
15 that?

16 WITNESS CANNON: Yes.

17 MR. RUIZ: Here, you're referring to another  
18 exhibit, a CSPA exhibit, 451. And you're talking about  
19 a loophole in existing OMR protections under the Delta  
20 smelt BiOps. Do you recall that testimony?

21 WITNESS CANNON: Yes.

22 MR. RUIZ: What do you mean or can you please  
23 provide further explanation as to the loophole to which  
24 you're referring and how it relates to June  
25 temperatures as an OMR exception?

1           WITNESS CANNON: Well, in dry and critical  
2 years, things get bad. The Central Delta and Clifton  
3 Court Forebay hit 25 degrees centigrade, and then the  
4 limits immediately stop. They're gone when they're  
5 needed more than ever. So that's the loophole.

6           MR. RUIZ: Okay. Also on Page 26 but towards  
7 the middle of the page, you say that, based on your  
8 experience, Delta smelt are on a likely path to  
9 extinction, do you recall that?

10          WITNESS CANNON: Yes.

11          MR. RUIZ: And is it your understanding that  
12 the primary way WaterFix proposes to address or handle  
13 Delta smelt moving forward is based on adaptive  
14 management?

15          WITNESS CANNON: No, the intention to switch  
16 some South Delta exports in the spring to the North  
17 Delta is a good intention.

18          But, for example, this year in April-May, when  
19 it's most important for smelt, in the past 20, 25 years  
20 we've always limited exports to 1500 or 2500 with CVPIA  
21 (b)(2), and there were VAMP restrictions.

22          This year, they just ignored them. They're  
23 gone. And there was 10-, 11,000 cfs in early May being  
24 exported from the Delta. That's absolutely crazy. We  
25 learned from adaptive management that that was crazy a

1 long time ago. And we had programs to prove it, and we  
2 proved it. Yet this year, they exported 10,000 on  
3 May 1st. So that -- I hope that answers your  
4 questions.

5 MR. RUIZ: Yes, it does. Thank you.

6 I have no further questions.

7 CO-HEARING OFFICER DODUC: Before we take a  
8 short five minutes, I did want to -- Ms. Womack?

9 MS. WOMACK: I just wanted to say that my  
10 questions have been asked, so I won't be asking.

11 CO-HEARING OFFICER DODUC: Thank you.

12 Actually, so then I'll direct my questions to  
13 Mr. Keeling and Mrs. Des Jardins. Do you have  
14 questions for all the witnesses? Is there anyone for  
15 whom you do not have questions?

16 MR. KEELING: I have a grueling battery of  
17 questions that will be mercilessly imposed only on  
18 Mr. Jennings.

19 CO-HEARING OFFICER DODUC: All right.

20 Ms. Des Jardins.

21 MS. DES JARDINS: I have cross-examination for  
22 Mr. Shutes and Mr. Cannon and a little bit for  
23 Mr. Jennings.

24 CO-HEARING OFFICER DODUC: All right.

25 So Mr. Stokely and Dr. Lee, I believe, are



1 done, unless Mr. Jackson has redirect.

2 MR. JACKSON: Oh, no.

3 CO-HEARING OFFICER DODUC: Thank you,  
4 Mr. Stokely and Dr. Lee. Always a pleasure, Dr. Lee.  
5 You've been an expert for quite a long time.

6 All right. With that, we'll take a short  
7 break, just a stretch. And we'll be back at 4:50.

8 (Recess taken)

9 CO-HEARING OFFICER DODUC: Take your seats  
10 please, everybody. We are resuming with Mr. Keeling's  
11 grueling torture of Mr. Jennings about to commence,  
12 according to Mr. Keeling

13 CROSS-EXAMINATION BY MR. KEELING

14 MR. KEELING: Tom Keeling on behalf of the San  
15 Joaquin County protestants.

16 Mr. Ruiz covered most of my adaptive  
17 management questions, but I will have a few of those  
18 for Mr. Jennings.

19 I will have a few on the Water Quality Control  
20 Plan and compliance with water quality standards and  
21 Delta flow criteria. I will have a couple questions on  
22 the boundary analysis, the boundary approach, and  
23 initial operating criteria. And I will have a couple  
24 of questions about public trust analysis, balancing,  
25 and other types of analyses that we have not seen yet

1 in this action -- in this proceeding.

2 Mr. Jennings, are you still alert enough that  
3 you think you could respond to a few questions?

4 WITNESS JENNINGS: I'll try not to fall asleep  
5 in the middle of them.

6 MR. KEELING: In your written testimony, which  
7 is CSPA-200 Corrected, you mention specifically a  
8 number of adaptive management programs that --  
9 affecting the Delta.

10 And my question of you is which, if any, of  
11 those adaptive management programs referenced in your  
12 testimony have been successful in your opinion?

13 WITNESS JENNINGS: Improving the condition, I  
14 can think of none.

15 But adaptive management sometimes is  
16 misunderstood. Adaptive management in a research  
17 situation can, in fact, work. And so there have been  
18 aspects of monitoring research programs where I think  
19 adaptive management has had some benefit.

20 But as a whole, adaptive management is subject  
21 to the same political processes -- I mean, one of the  
22 difficulties of adaptive management, as a concept is  
23 that in large complex systems that are oversubscribed,  
24 where the consequences are expensive and there are  
25 strong political stakeholders involved, adaptive

1 management is just awfully difficult if not impossible.

2           It's extremely expensive. And people have a  
3 reluctance to embrace uncertainty. And it's just  
4 like -- and VAMP is a prime example of adaptive  
5 management plan that did some good things but never  
6 completed the study because -- you know, it was  
7 original -- vamp was originally created as an  
8 experiment on the San Joaquin to see if less flows than  
9 the Board had directed, you know, would work.

10           And there were some interesting, you know, the  
11 efforts on improving some outmigrations early on were  
12 apparently successful because of the restriction on  
13 Delta exports when you had outmigrants coming out of  
14 the system. But we never got the full experiment done  
15 because the water agency would never supply the full  
16 amount of water so they could run the complete  
17 experiment. And then it was just kind of -- it went by  
18 the wayside.

19           But you know, adaptive management the concept  
20 is elegant. And I think in a smaller watershed, a  
21 smaller situation, where there's a possibility of a  
22 win-win solution, I think you could probably find some  
23 success stories there. But I've not seen a large  
24 complex controversial system to where it's produced  
25 clear, identifiable, documented improvements in

1 condition.

2 Did I go on too long? I'm --

3 MR. KEELING: Yes.

4 WITNESS JENNINGS: Okay. Well, you're the  
5 boss in this, and you can stop me at any point.

6 MR. KEELING: Speaking of things you've not  
7 seen, isn't it true that you've not reviewed a  
8 completed adaptive management program for the WaterFix  
9 project?

10 WITNESS JENNINGS: No, I know of no approved  
11 plan for it. And what I've seen has raised some  
12 concerns, that appears in the language it's a pretty  
13 closed system. And it doesn't allow for a lot of  
14 public input among NGOs and local agencies and even  
15 legal users of water that might be injured or anything.  
16 So that has been -- that's been problematic in adaptive  
17 management from where I've seen it.

18 MR. KEELING: Well, are you aware, based upon  
19 the comments you have seen, the text you have seen  
20 about adaptive management in connection with WaterFix,  
21 are you aware of the petitioners modeling an adaptive  
22 management program on any peer-reviewed study, adaptive  
23 management study, a report?

24 In other words, are you aware of the existence  
25 of any peer-reviewed adaptive management report that is

1 being used as a model or template for this program?

2 WITNESS JENNINGS: Not that I'm aware of.

3 MR. KEELING: Do you recall that, in your  
4 written testimony and in your testimony this morning,  
5 you talk about the 1995 Water Quality Control Plan for  
6 the Delta, which was adopted in 1995? Do you recall  
7 that you testified about that?

8 WITNESS JENNINGS: Which one, EPA's or the  
9 State Board's?

10 MR. KEELING: It would be State Water  
11 Resources Control Board 30.

12 WITNESS JENNINGS: Okay.

13 MR. KEELING: You do remember that?

14 WITNESS JENNINGS: (Nods head up and down)

15 MR. KEELING: Okay. I'm curious. You  
16 mentioned that there's a federal requirement that the  
17 water quality standards be reconsidered or revised --  
18 and revised every three years?

19 WITNESS JENNINGS: Yes.

20 MR. KEELING: And yet this 1995 plan is still  
21 in effect 22 years later; is that what you said?

22 WITNESS JENNINGS: Yes, and it was -- included  
23 a number of the standards from 1485 in '78. And in  
24 2006, the Board revisited it. We basically kept the  
25 same standards and said, "We're going to develop a new

1 process," and laid forth there. And that's been  
2 delayed.

3 MR. KEELING: Do you have an understanding as  
4 to why it's been delayed?

5 WITNESS JENNINGS: Several-fold, I think. A  
6 lack of resources. I mean, these things are intensely  
7 expensive. And I think the Board has tried to jump  
8 through the hoops, but part of it is this is a -- this  
9 is -- it's almost -- it's a fight.

10 I mean, everybody realizes they have a stake.  
11 They can -- that their ox can get gored, and that's  
12 whatever the standards are. And so I think the Board's  
13 trying to dot the I's and cross the Ts. And no one, I  
14 think, is going along totally with them.

15 MR. KEELING: Have you been following these  
16 proceedings for the WaterFix in Part 1 and 2 generally?  
17 Have you been tracking them?

18 WITNESS JENNINGS: It's become my daytime  
19 habit to watch. I've -- there have been not been many  
20 instances, actually, that I haven't watched. I think  
21 I've probably watched a lot more than most of the  
22 attorneys here.

23 MR. KEELING: I didn't feel sorry for you  
24 until now, Mr. Jennings. Are you aware of the fact  
25 that that petitioners have responded to various

1 protestants' arguments by assuring this Board that the  
2 project will meet D1641 standards?

3 WITNESS JENNINGS: Which gives me no  
4 confidence whatsoever. 1641 simply isn't protective.  
5 I think we can see the results in that. It hasn't been  
6 technically enforced and -- frequently, in recent  
7 years, because the standards have been waived.

8 It's fish doubling -- you know, it's got a  
9 fish doubling criteria in there that has just been  
10 completely ignored, I mean, discarded as a show.

11 The South Delta standards in it might as well  
12 not be in it because they -- I mean, there are  
13 thousands upon thousands upon thousands of days that  
14 we're over at Tracy and Middle River, have been  
15 violated. And there's never been an enforcement  
16 mechanism taken for any violations. I mean, whether in  
17 the South Delta -- other than the cease and desist  
18 order.

19 But you know, even for where they violated the  
20 numbers in the TUCPs, I mean, you know, those standards  
21 were relaxed; some of those standards were violated.  
22 And I'm not sure that anyone takes the Board seriously  
23 as far as being punished for not complying.

24 So, you know, 1641 is -- I think the 2010 flow  
25 hearing demonstrated conclusively that the flows in the

1 present Water Quality Control Plan are accurate  
2 measure. They're going to have to be increased. The  
3 Board members frequently made that statement in various  
4 proceedings. And --

5 MR. KEELING: You have anticipated some of my  
6 questions. It was a yes-or-no question, but you've now  
7 answered my next question, which was --

8 WITNESS JENNINGS: Trying to get out of here.

9 MR. KEELING: Does that assurance about  
10 compliance with 1641 suffice as a reason, in your view,  
11 to approve the proposed project. I infer from your  
12 narrative that your answer is no. Am I correct?

13 WITNESS JENNINGS: Yes.

14 MR. KEELING: "Yes," can --

15 WITNESS JENNINGS: Yes, the answer's no.

16 MR. KEELING: Okay. And Page 34 and 35 of  
17 your testimony, I don't think we need to put it up,  
18 unless you want me to.

19 You reference the State Board's intense and  
20 comprehensive effort to determine necessary flows to  
21 protect public trust resources. Do you recall that?  
22 We were talking about the 2010 flow criteria  
23 proceedings.

24 WITNESS JENNINGS: Yeah, the Board -- tell me  
25 if I go on too long. The Board pointed a who's who



1 among the fishery professionals to act that as their  
2 expert panel through that proceeding. There were 11 of  
3 them. They had referenced something, you know, 200,  
4 300 reference documents.

5           As I recall in that hearing, there was  
6 something 87, 88 experts had been put in almost just  
7 over 500 exhibits. All of this services were there --  
8 I mean, the fish agencies, the State contractors -- I  
9 mean, the federal contractors, the Bureau, DWR. I  
10 mean, everybody was there.

11           And at the conclusion of that -- I mean,  
12 that -- that will was the single most concentrated  
13 elaborate effort to identify what fish need that I have  
14 ever seen since certainly the -- the ill-fated '92  
15 hearing that I think our Hearing Officer remembers  
16 fondly as an engineer with the State Board.

17           But -- and in fact, the 2010 hearing included  
18 a lot of the documents -- I mean, we submitted, Fish  
19 and Wildlife submitted, and DFG submitted a lot of the  
20 documents from the '88 and the '92 proceedings. And so  
21 there's probably -- that record is probably the best  
22 record that the Board's ever assembled on what fish  
23 need from this estuary.

24           MR. KEELING: And that proceeding resulted in  
25 the 2010 Delta Flow Criteria; is that correct?

1 WITNESS JENNINGS: Yes.

2 MR. KEELING: To your knowledge, have the  
3 petitioners in this proceeding represented that the  
4 proposed California WaterFix would be subject to the  
5 2010 Delta Flow Criteria?

6 WITNESS JENNINGS: Well, no. I mean, the  
7 Board, in issuing that criteria or releasing that  
8 report, acknowledged that a balancing would have to  
9 occur. And that was sure enough. But the report was  
10 strictly what fish need.

11 And -- and the recommendations in that report  
12 were not even modeled. I mean, I think they modeled  
13 something that staff recommended to see what a larger  
14 number than what's present would go.

15 But there's some questions there. And I don't  
16 want to necessarily get into there. But you know, it's  
17 -- you can't -- an oversubscribed system, by  
18 definition, you can't meet everybody's needs.

19 MR. KEELING: So what is your understanding,  
20 if you have one, as to what Delta flow criteria will  
21 apply to the proposed twin tunnel project if it's  
22 approved?

23 WITNESS JENNINGS: Well, the Board will --  
24 that's partly what we're here for. The Board said they  
25 will put conditions.

1           You know, the problem is that -- and we all  
2 know the difficulty. I mean, so the Board's going to  
3 set conditions that suddenly they're going to do away  
4 with in two years or three years or, establish  
5 something more stringent that's going to make a  
6 \$17 billion project infeas- -- a stranded asset.

7           I mean, so -- so I think it's important to get  
8 to what -- the standards in place first. And then we  
9 can move to apply permits, all permits.

10           MR. KEELING: Without going into any more  
11 detail than this, in your opinion, should the flow  
12 criteria, whatever they happen to be, include higher  
13 bypass flows than those that have been proposed by the  
14 petitioners?

15           WITNESS JENNINGS: Oh, certainly. I mean,  
16 basically it's D1641 flows. And the bypass flows are  
17 not -- I mean, the record of that 2010 flow hearing,  
18 the recommendation to the U.S. Fish and Wildlife  
19 Service and the Department of Fish and Game for  
20 necessary outflows, necessary Sacramento River flows,  
21 and whatnot were all substantial -- far, far greater  
22 than what's proposed.

23           MR. KEELING: Are you familiar with the  
24 proposed initial operating criteria which are  
25 dubbed H3+?

1           WITNESS JENNINGS: Well I've tried to keep --  
2   been kind of like a shell game. I've tried to keep my  
3   eye on the ball as to exactly what it entails. I --  
4   it's -- that's -- I think I've got an idea, but.

5           MR. KEELING: Well, based on that information  
6   you do have about the initial operating criteria, do  
7   you have an opinion as to whether that initial  
8   operating criteria, that those are sufficiently  
9   protective of fish?

10          WITNESS JENNINGS: Well, they're certainly  
11   not. I mean, they put D1641 plus the Biological  
12   Opinions but don't put the -- the reasonable -- the  
13   measures -- you know, the measures of the Biological  
14   Opinions into the permit. They don't want that. They  
15   want adaptive management.

16          But that's kind of a black box. And so I  
17   can't find out -- you know, "trust that we'll operate  
18   it like we have," seems to me that WaterFix is --  
19   operates like the present project with the new Delta  
20   diversions, and we'll -- we'll see how it operates.  
21   But that the only constraints are going to be the  
22   BiOps, not the measures in the BiOps but the BiOps  
23   generally themselves, with an adaptive management plan  
24   over it and then D1641 under it.

25          And I don't see that that's going to get us

1 there.

2 MR. KEELING: Do you understand that the H3+  
3 is only the -- is only the initial operating criteria  
4 and that the project thereafter would be -- as  
5 proposed, would be subject only to the B1 to B2  
6 Boundary --

7 WITNESS JENNINGS: Which is a range of  
8 something like 2.1 million acre-feet. So I don't know.  
9 I mean, I -- I don't know what the initial operating  
10 regime for WaterFix is.

11 MR. KEELING: Well, regardless of what the  
12 initial regime might be, do you have an opinion about  
13 whether the boundary approach proposed by the  
14 petitioners is sufficiently protective of public trust?

15 WITNESS JENNINGS: Well, I don't think it is.  
16 And that's the question as to how the adaptive  
17 management program -- they put a lot of -- they're  
18 proposing to put a lot of power in the adaptive  
19 management process. And the adaptive management  
20 process will be the fishery agencies, the projects, the  
21 contractors, maybe an invited guest.

22 MR. KEELING: Well, in your opinion, aren't  
23 those first three groups largely the groups that  
24 brought the Delta to its current healthy state?

25 WITNESS JENNINGS: And that's -- that's right.

1 That's my point.

2 MR. KEELING: And based on your experience in  
3 the Delta, is it your opinion that even the boundary  
4 analysis could be later challenged in court or before  
5 this Board?

6 WITNESS JENNINGS: I think so. I mean, you  
7 know, boundary analysis is just kind of -- fucked.

8 Mr. KEELING: Mr. Jennings, to your knowledge,  
9 was a water availability analysis prepared for this  
10 project?

11 WITNESS JENNINGS: You have now gone into a  
12 very sore subject with me. Obviously, it wasn't. But  
13 the Board has never responded to my petition for  
14 adjudication that I submitted to the Board several  
15 years ago. I mean, you know, we've got an  
16 insurmountable problem in this state that we can't  
17 solve until we ultimately bite the bullet and bring the  
18 rights to water into balance with the availability of  
19 water.

20 And no one has been able to do that. Idaho  
21 has done it; Colorado has done it both for surface and  
22 groundwater. All of the conflicts, the wars, the water  
23 wars that have been raged is in great part over the  
24 failure of California to adjudicate its waters.

25 I mean, we've got 153-, almost 154 million

1 acre-feet claimed for 29 million acre-feet is a  
2 long-term average. And that's just not going to work  
3 and that would set off a 10-year process, you know that  
4 would be enormously expensive for maybe 20 years, you  
5 know.

6 But at the end of it, we would have a prospect  
7 of moving forward. I mean -- and I don't see an  
8 alternative. And a water availability analysis would  
9 have at least dealt with the situation with this  
10 project at this point in time without an adjudication.  
11 But you know, there are no wicked people here.

12 CO-HEARING OFFICER DODUC: Are you --

13 WITNESS JENNINGS: There are people that --  
14 that have tried their best.

15 I'm going to say something.

16 MR. JACKSON: I know.

17 WITNESS JENNINGS: The problem with having  
18 failed to deal with problem is that people have  
19 mortgaged their futures and their lives on the promise  
20 of something that cannot happen, consistently.

21 And it's not fair to people in the valley that  
22 have built their -- have mortgaged their futures, built  
23 their futures around the need for water that was  
24 promised but can't be reliably delivered, or for the  
25 ecosystem and the generations of people to come of a

1 national treasure that we're going to sacrifice because  
2 we have not been able to address a fundamental problem  
3 of how to bring water we have into balance with the  
4 water we need.

5 CO-HEARING OFFICER DODUC: Thank you.

6 MR. KEELING: I've sadly underestimated  
7 Mr. Jennings' verbosity, and I'm -- I won't go more  
8 than 10 minutes. It would have been 20 minutes with a  
9 normal witness.

10 CO-HEARING OFFICER DODUC: Mr. Keeling, I  
11 would suggest you move very quickly through, unless  
12 this panel wishes to return tomorrow.

13 WITNESS JENNINGS: Don't asking me anything  
14 that can't be answered with a yes or no.

15 MR. KEELING: Based on your testimony, do I  
16 correctly understand that, in your opinion, there has  
17 been no public trust balancing performed to support  
18 this project?

19 WITNESS JENNINGS: Yes.

20 MR. KEELING: Do you know why the petitioners  
21 did not present a public trust balancing in this  
22 matter?

23 WITNESS JENNINGS: No. I don't even know why  
24 they didn't submit a full comprehensive cost benefit  
25 analysis for this project.



1 CO-HEARING OFFICER DODUC: Speculative. Move  
2 on, Mr. Keeling.

3 MR. KEELING: So let me ask you this in light  
4 of your experience with the projects in the Delta.  
5 You've testified that there was no public trust  
6 balancing. You've testified that there is, as yet, no  
7 proposed flow criteria. You just mentioned that there  
8 has been no --

9 CO-HEARING OFFICER DODUC: What's your  
10 questions, Mr. Keeling?

11 MR. KEELING: Well, the question is that, with  
12 respect to public trust balancing, proposed flow  
13 criteria, a completed adaptive management program,  
14 assured funding, and a benefit cost analysis, have you  
15 ever seen a project of this size that lacked that kind  
16 of information?

17 It's a yes-or-no question.

18 WITNESS JENNINGS: No.

19 MR. KEELING: Given your 30 first years in the  
20 Delta, are you surprised that this project, ambitious  
21 as it is, is being put forward without the analyses and  
22 studies I just referenced?

23 WITNESS JENNINGS: Yes.

24 MR. KEELING: Thank you. That's all I have.

25 CO-HEARING OFFICER DODUC: Ms. Des Jardins,

1 did you have questions for Mr. Jennings?

2 MS. DES JARDINS: Yes, I do.

3 CO-HEARING OFFICER DODUC: Sorry. I thought I  
4 could let you go, but apparently not.

5 MS. DES JARDINS: Well, am I going to finish  
6 today? Yes. I could ask the questions for  
7 Mr. Jennings, and he could be dismissed, but then I  
8 have questions for the other witnesses.

9 CO-HEARING OFFICER DODUC: Mr. Jennings, it is  
10 in your interest to keep your answers short.

11 CROSS-EXAMINATION BY MS. DES JARDINS

12 MS. DES JARDINS: Okay. So I think I will  
13 then -- my name is Deirdre Des Jardins with California  
14 Water Research, and I have some questions for  
15 Mr. Cannon first.

16 CO-HEARING OFFICER DODUC: No, let's ask  
17 Mr. Jennings his questions first.

18 MS. DES JARDINS: But he's very garrulous, and  
19 I'd like to manage my time.

20 CO-HEARING OFFICER DODUC: Mr. Cannon is not  
21 even here. So I suggest you ask Mr. Jennings his  
22 questions.

23 MS. DES JARDINS: Oh. Where is Mr. Cannon?

24 WITNESS SHUTES: He must have stepped out. He  
25 was having trouble with a cough.

1 MS. DES JARDINS: Oh, okay. Never mind.

2 Okay. Mr. Jennings, I'd like to go to  
3 CSPA-233, please. And I'd like to go to Page 2.

4 So Mr. Jennings, looking at this graph, you  
5 discuss this -- this striped bass populations go --  
6 age-0 striped bass populations go down around 1995?

7 WITNESS JENNINGS: Yep.

8 MS. DES JARDINS: And it looks like they never  
9 recover, even in very wet years?

10 WITNESS JENNINGS: It's been a consistent  
11 decline.

12 MS. DES JARDINS: Are you aware that there  
13 were specific protections for striped bass in  
14 Decision 1485?

15 WITNESS JENNINGS: Striped bass was a  
16 commercial species that were the focus of protection  
17 of -- in the Delta for many years. I mean, you know,  
18 the Department of Fish and Game focused on striped  
19 bass. And, yes, there were good solid protections in  
20 there.

21 MS. DES JARDINS: And were those protections  
22 discontinued in the 1995 Water Quality Control Act?

23 WITNESS JENNINGS: They were weakened.

24 MS. DES JARDINS: Thank you. Are you aware  
25 that the pumps for the North Delta diversions are not

1 part of the permit application?

2 CO-HEARING OFFICER DODUC: Ms. Morris.

3 MS. MORRIS: I would just object to the  
4 characterization of "pumps." There's no testimony that  
5 there's pumps. There's diversions.

6 MS. DES JARDINS: I can pull up -- let's go to  
7 Exhibit SWRCB-1, Page 22.

8 Are you aware that the pumps are not part of  
9 the permit application?

10 CO-HEARING OFFICER DODUC: What pumps are you  
11 referring to?

12 MS. DES JARDINS: The North Delta diversion  
13 pumps.

14 CO-HEARING OFFICER DODUC: I'm confused.

15 WITNESS JENNINGS: I'm confused, too. I mean,  
16 there's not part of the -- like, the U.S. Fish and  
17 Wildlife Biological Opinion. That's deferred to the  
18 future. But --

19 MS. DES JARDINS: Please scroll down. It's at  
20 the bottom. Please scroll down a little further. See  
21 the sentence that begins, "While the larger California  
22 WaterFix" --

23 MS. ANSLEY: I'm sorry. Can question find out  
24 what document this is, so I know?

25 MS. DES JARDINS: This is the SWRCB-1, the

1 permit application.

2 CO-HEARING OFFICER DODUC: I believe it was  
3 removed. It's not part of the proposal. It's not  
4 being built. That's why it's not part of the petition.  
5 We went through this.

6 MS. DES JARDINS: No, it is -- this is --  
7 Gwen Buchholz testified in Part 1 that this is the  
8 pumping station -- I mean in Part 2 on cross that this  
9 is the pumping station in the South Delta that is  
10 proposed to be built.

11 CO-HEARING OFFICER DODUC: Now I'm confused.  
12 Can someone --

13 MS. MORRIS: There's no pumps -- I'm not  
14 testifying. But for purposes of clarifying the  
15 question, there are no pumps in the North Delta. There  
16 are pumps in the South Delta from the Clifton Court --  
17 the forebay, not the existing but the newly added. And  
18 all of this is in Mr. Bednarski's testimony.

19 MS. DES JARDINS: The --

20 CO-HEARING OFFICER DODUC: Wait for --

21 MS. DES JARDINS: point of diversions --

22 CO-HEARING OFFICER DODUC: Wait.

23 Mr. Jennings, does that help you better  
24 understand the question?

25 WITNESS JENNINGS: Well, the new State Water

1 Project pumping station, I mean, they're gravity-fed  
2 pumps. But there is a pumping apparatus to get them  
3 into the gravity-fed tunnels. Now, I realize the major  
4 tunnel pumping facilities are going to be in the south.  
5 So I'm trying -- a little unclear here.

6 MS. DES JARDINS: Okay. It just says at the  
7 bottom -- it seems like you don't really understand the  
8 question.

9 WITNESS JENNINGS: Yeah.

10 MS. DES JARDINS: So I'll just move on.

11 So my next question is for Mr. Cannon.

12 CO-HEARING OFFICER DODUC: So are you done  
13 with Mr. Jennings?

14 MS. DES JARDINS: Yes.

15 CO-HEARING OFFICER DODUC: Mr. Jennings, thank  
16 you, but before you leave, I have a question for you.  
17 This morning, in providing your oral testimony, you  
18 used a word "disavow." And you used it in reference to  
19 this Board and the 2010 flow criteria proceeding.

20 I thought maybe I misheard, so I asked to have  
21 a copy of the transcript you gave to the court  
22 reporter. And on Page 10, you actually said, "The  
23 Board's disavowal of the 2010 proceeding."

24 What do you mean by that?

25 WITNESS JENNINGS: Well, let me clarify that.

1 CO-HEARING OFFICER DODUC: Please.

2 WITNESS JENNINGS: I can understand why you  
3 would be upset by that.

4 CO-HEARING OFFICER DODUC: Keep in mind that I  
5 am a Board Member who was part of that 2010 proceeding.

6 WITNESS JENNINGS: Originally, originally, the  
7 2010 flow report, it's one of the -- it's the State  
8 Board exhibits that were going to be originally part of  
9 the record when we were talking about starting the  
10 WaterFix hearing. And then it was that they're not  
11 part of the record, that you -- they're exhibits that  
12 you will have to cite and bring into the record.

13 That includes nothing of the hearing record  
14 there. So I was referring to -- and "disavowal" is  
15 probably -- not probably -- was the wrong word to use.

16 CO-HEARING OFFICER DODUC: Was the wrong word.

17 WITNESS JENNINGS: I will correct that.

18 But you essentially walked away from the  
19 hearing record.

20 CO-HEARING OFFICER DODUC: That is not correct  
21 either.

22 WITNESS JENNINGS: Well --

23 CO-HEARING OFFICER DODUC: Mr. Jennings,  
24 let -- you can tell that, as a Board Member in 2010,  
25 I'm very produced of the work that we did and very

1 produced of the report that was adopted.

2 WITNESS JENNINGS: I am, too.

3 CO-HEARING OFFICER DODUC: And recognizing the  
4 Delta Reform Act requirement for us to consider those  
5 flow criteria in this process, let me assure you we  
6 have not disavowed anything associated with it. And it  
7 is going to be a very important part of our  
8 consideration.

9 Now, I have attorneys all around me who know  
10 better than I what the proper procedure is in terms of  
11 the record and the -- you know, the maintaining the  
12 appropriate record and the process involved in moving  
13 things into exhibits. So I will have to defer to them  
14 on that, and we will find a way to make sure that we  
15 properly do that.

16 But if there is any confusion, let me be very  
17 clear. We have not and will not disavow the 2010 flow  
18 criteria report, the proceedings, and all the expertise  
19 that you have mentioned that that was associated with  
20 it. It will be part of our consideration.

21 WITNESS JENNINGS: I can understand your  
22 concern. I can understand your concern with my  
23 comment. And I'm glad to hear that. I mean, you know,  
24 in the sense that -- but the Board -- the flow hearing  
25 report was only part of a very extensive record.



1 CO-HEARING OFFICER DODUC: Yes.

2 WITNESS JENNINGS: And -- and so are you  
3 suggesting that the record -- will you consider the  
4 record of that hearing, or just the flow report?

5 CO-HEARING OFFICER DODUC: That's probably a  
6 legal thing that I'm not going to touch --

7 WITNESS JENNINGS: I understand.

8 CO-HEARING OFFICER DODUC: -- being a poor  
9 little engineer that I am. But just be assured that we  
10 have not disavowed that report or anything associated  
11 with it.

12 WITNESS JENNINGS: I appreciate that. And as  
13 you know, I tend to -- as long as you've known me, I've  
14 talked, too, much.

15 CO-HEARING OFFICER DODUC: Thank you.

16 WITNESS JENNINGS: And I apologize for that.

17 CO-HEARING OFFICER DODUC: Thank you,  
18 Mr. Jennings.

19 Ms. Morris.

20 MS. MORRIS: I apologize. Before Mr. Jennings  
21 leaves, I didn't get a copy of his summary that was  
22 handed out before --

23 CO-HEARING OFFICER DODUC: That was actually  
24 given to the court reporter.

25 MS. MORRIS: Okay. But that's not an -- it's

1 not being -- it's not marked as exhibit or --

2 CO-HEARING OFFICER DODUC: I think it's  
3 because he read it as part of his oral testimony. It's  
4 in the transcript.

5 MS. MORRIS: Okay.

6 CO-HEARING OFFICER DODUC: And he gave her a  
7 copy so that she will have it correctly.

8 MS. MORRIS: I just wanted to clarify.

9 WITNESS JENNINGS: I have always done that. I  
10 have always done that. I presented -- for the -- I  
11 give a business card and a transcript of what you're  
12 going to say. It's just a courtesy to the  
13 stenographer.

14 CO-HEARING OFFICER DODUC: Thank you,  
15 Mr. Jennings. Safe travels, Mr. Jennings.

16 And now, Ms. Des Jardins.

17 MS. DES JARDINS: Thank you.

18 I'd like to -- and I hope the previous  
19 discussion will inform the Board's consideration of my  
20 efforts to call CWF witnesses from the 2010 hearing.

21 But the Exhibit CSPA -- let's see.  
22 Mr. Cannon, your opinion on the North Delta intakes  
23 refers to Exhibit CSPA-400. And I'd like to pull that  
24 up. Go to Page 2. You discuss the fish screens there.  
25 This is the blog post. Can we go down to Page 2.

1           And at the top, you discuss the importance of  
2 location of fish screens.

3           WITNESS CANNON: Yes.

4           CO-HEARING OFFICER DODUC: Ms. Morris.

5           MS. MORRIS: This -- my objection is this  
6 mischaracterizes the testimony. This was a blog post  
7 that was not written by this witness. It's written by  
8 Mr. Vogel, and the question is unclear.

9           CO-HEARING OFFICER DODUC: All right.

10          MS. DES JARDINS: I would like to be able to  
11 efficiently ask questions of this witness.

12          CO-HEARING OFFICER DODUC: You may ask, go  
13 ahead, Ms. Des Jardins.

14          Hold on.

15          CO-HEARING OFFICER MARCUS: You can't -- there  
16 are legitimate objections to make in a legal  
17 proceeding. And this is the second time you said, "I  
18 want to ask my questions." But you actually don't get  
19 to just ask any question you want. It is okay for  
20 someone to object like she just did for the purpose of  
21 the record.

22          So listen to the objection, but ask the  
23 question the way you would in the legal proceeding.

24          MS. DES JARDINS: Okay. So, I wanted to  
25 review this. The -- down near the bottom, you discuss

1 how a sweeping flow -- let's go up, go up -- oh, no,  
2 it's there.

3 Sweeping flow complications are alleviated,  
4 and you discuss locating them on the outside bends of  
5 the river channel?

6 CO-HEARING OFFICER DODUC: Hold on, please.  
7 Same objection?

8 MS. MORRIS: Yes.

9 CO-HEARING OFFICER DODUC: Ms. Des Jardins,  
10 this was not written by Mr. Shutes, so --

11 MS. DES JARDINS: Mr. Cannon.

12 CO-HEARING OFFICER DODUC: Mr. Cannon or  
13 Mr. Shutes. So please do not phrase your questions in  
14 terms of "you wrote this" because they did not write  
15 it.

16 MS. DES JARDINS: My apology.

17 So this is part of -- part of your -- do you  
18 agree with the assertion here that -- about locating  
19 bends on the outside of a river channel; is that --

20 WITNESS CANNON: The sweeping velocities will  
21 be higher on the outside, yes.

22 MS. DES JARDINS: And it shows an example  
23 here. Let's go to Page 3. And it shows another  
24 picture. And it shows the WaterFix being positioned  
25 on, I believe, what it characterizes as very slight

1 river bends, correct, or --

2 WITNESS CANNON: The start of another bend.

3 MS. DES JARDINS: Yeah. And so it says these  
4 are undesirable locations for fish screens.

5 WITNESS CANNON: That's was the opinion of  
6 Dave Vogel, and I would generally support those.  
7 That's why I put his more knowledgeable background in  
8 my testimony as a reference.

9 MS. DES JARDINS: So in forming your opinion  
10 about the fish screens, you took into account these  
11 opinions, that the -- this information about where the  
12 screens are located; is that -- would that be correct?

13 WITNESS CANNON: Yes. When I took on the  
14 challenge of assessing those kinds of factors in the  
15 screens, I asked Dave Vogel, who is a renowned expert  
16 on this on Sacramento River, to add -- to give me his  
17 own opinions to support whatever I had.

18 MS. DES JARDINS: Okay. So I'd like to also  
19 ask you about CSPA-406 that you refer to in your  
20 opinion on fish migration.

21 And I believe you did write this. It says  
22 "WaterFix NMFS Biological Opinion Conclusions on Salmon  
23 in the Delta."

24 WITNESS CANNON: Yes.

25 MS. DES JARDINS: And lets scroll down to --

1 on Page 1. Scroll down a little further about -- so  
2 it -- you discuss -- you reference a part of the NMFS  
3 Biological Opinion where it would increase migratory  
4 travel time; is that correct?

5 WITNESS CANNON: Yes, that's on Page 62 of  
6 their document.

7 MS. DES JARDINS: And so that would  
8 potentially increase the risk of predation?

9 WITNESS CANNON: Well, it just -- that's one  
10 of the factors that would be detrimental if you reduce  
11 migratory travel time.

12 MS. DES JARDINS: Let's go down a little bit  
13 further. So further down -- go up a little. You talk  
14 about how the NMFS assessment is based on survival of  
15 large late-fall smolts.

16 And then let's scroll down a little further.  
17 But then you say -- you say, "Greatest risks are to  
18 presmolt salmon, winter-run, and steelhead." Is that  
19 because they're smaller?

20 WITNESS CANNON: Yes.

21 MS. DES JARDINS: Is that because they're less  
22 good swimmers?

23 WITNESS CANNON: Yes.

24 MS. DES JARDINS: Could this reduce the  
25 natural production of these salmon the basis if there's

1 a higher impact on these fish?

2 WITNESS CANNON: Yes.

3 MS. DES JARDINS: If there was a reduction,  
4 natural reduction of fall-run, could that have adverse  
5 impacts on commercial fishing?

6 WITNESS CANNON: Yes.

7 MS. DES JARDINS: Would impacts to fall-run be  
8 protected by adaptive management under Endangered  
9 Species Act?

10 WITNESS CANNON: They could be, yes.

11 MS. DES JARDINS: Okay. But not necessarily?

12 WITNESS CANNON: I don't know what they would  
13 do.

14 MS. DES JARDINS: Okay. Let's go down to --  
15 scroll down to where it discusses tidal inflows,  
16 please. Keep going. Let's go to Page 6.

17 I'm not seeing it here.

18 You mentioned that you thought that the first  
19 winter flow pulse would not protect fry, parr, and  
20 smolt of spring and fall-run.

21 WITNESS CANNON: That's right. They occur  
22 later.

23 MS. DES JARDINS: Okay. And you also say  
24 that -- in your testimony that Delta inflow and outflow  
25 rules are insufficient to maintain Bay or Delta

1 productivity or habitat conditions beneficial to the  
2 fish?

3 WITNESS CANNON: Yes.

4 MS. DES JARDINS: So you believe that  
5 productions in flow reduce Delta productivity?

6 WITNESS CANNON: Yes.

7 MS. DES JARDINS: Do the reduction -- does the  
8 reduction in Delta productivity affect the reduction of  
9 zooplankton?

10 WITNESS CANNON: Yes.

11 MS. DES JARDINS: Is zooplankton fed on by  
12 salmon if they're rearing in the Delta?

13 WITNESS CANNON: Yes.

14 MS. DES JARDINS: Are they one of the primary  
15 food sources for juvenile salmon?

16 WITNESS CANNON: One of them.

17 MS. DES JARDINS: What are the other primary  
18 food sources?

19 WITNESS CANNON: Benthic invertebrates and  
20 terrestrial insects.

21 MS. DES JARDINS: Are benthic invertebrates  
22 also affected by flows?

23 WITNESS CANNON: Possibly.

24 MS. DES JARDINS: Okay. On Page 8 of your  
25 testimony, you mention -- let's scroll down. You



1 mention groups such as the -- it's down towards the  
2 bottom. There we go. On monitoring, you mention the  
3 Delta smelt and salmon management groups. You say they  
4 will have limited authority to make needed changes in  
5 operations. Are you referring in part to the Delta  
6 smelt working group?

7 WITNESS CANNON: That's the Delta smelt group,  
8 yes.

9 MS. DES JARDINS: And is that group composed  
10 of biologists?

11 WITNESS CANNON: Yes.

12 MS. DES JARDINS: And the Delta smelt working  
13 group makes recommendations, for example, to reduce  
14 exports?

15 WITNESS CANNON: Yes.

16 MS. DES JARDINS: When they make a  
17 recommendation, is it necessarily followed?

18 WITNESS CANNON: No.

19 MS. DES JARDINS: Who makes the decision on  
20 whether exports are reduced when --

21 WITNESS CANNON: The WOMT. I forget what it  
22 means.

23 MS. DES JARDINS: Water Operations Management  
24 something or other.

25 WITNESS CANNON: Team.

1 MS. DES JARDINS: And it also is in part the  
2 Delta Operations for Salmonids and Sturgeon group that  
3 you're referring to?

4 WITNESS CANNON: Yes.

5 MS. DES JARDINS: The DOSS group? And the  
6 DOSS group also has biologists?

7 WITNESS CANNON: Yes.

8 MS. DES JARDINS: When DOSS group biologists  
9 make a recommendation to reduce exports, is that  
10 necessarily followed?

11 WITNESS CANNON: I don't know. I haven't  
12 reviewed any of their decisions or recommendations that  
13 were made to the WOMET or the WOMET response.

14 MS. DES JARDINS: Okay. You also recommend  
15 that for pelagic fish during spring and fall  
16 migrations, to reduce exports for optimal salmon  
17 passage conditions. And you mention conditions include  
18 things like stream flow and water temperature?

19 WITNESS CANNON: Yes.

20 MS. DES JARDINS: And so both stream flow and  
21 water temperature are important for optimal conditions?

22 WITNESS CANNON: Yes.

23 MS. DES JARDINS: I'd also like to ask you  
24 about CSPA-427. And let's go to Page 2, please.  
25 Scroll down.

1           So here you show a graph of spring chlorophyll  
2 levels in the Delta?

3           WITNESS CANNON: Yes.

4           MS. DES JARDINS: And, so, according to this  
5 graph, it appears that this primary productivity  
6 decreased?

7           WITNESS CANNON: The long-term trend for those  
8 20 years, yes.

9           MS. DES JARDINS: And so where does -- this is  
10 from a paper by Jassby?

11          WITNESS CANNON: Yes.

12          MS. DES JARDINS: He's a biologist?

13          WITNESS CANNON: Yes.

14          MS. DES JARDINS: It's a peer-reviewed paper?

15          WITNESS CANNON: Yes.

16          MS. DES JARDINS: Thank you. So thank you.

17                 And then I have some questions for  
18 Chris Shutes. I'd like to go to CSPA-202 Errata,  
19 Page 18. Your testimony, CSPA-202 Errata. And this is  
20 the infamous equation representing Leahigh's floor  
21 carryover storage.

22                 So Mr. Shutes, you took this equation and  
23 analyzed some alternatives for the 1 million acre-feet  
24 floor; is that correct?

25                 WITNESS SHUTES: I did.

1 MS. DES JARDINS: I'd like to go to Exhibit  
2 CSPA-313. And this is your analysis of the different  
3 alternatives, correct?

4 WITNESS SHUTES: It is.

5 MS. DES JARDINS: So Column F is the storage  
6 with 1 million acre-feet?

7 WITNESS SHUTES: As the floor, correct. And  
8 this is based on historic data. Now, one of the  
9 previous cross-examiners asked whether those numbers  
10 would change if the floor was different, and it's  
11 possible that it would.

12 I honestly don't know what the floor was in  
13 any of those earlier years prior to 2005 when I believe  
14 the existing -- well, the previous floor of  
15 a thousand-thousand [sic] acre-feet or a million  
16 acre-feet was in effect.

17 MS. DES JARDINS: So you obtained this  
18 equation on cross-examination of Mr. Leahigh, correct?

19 WITNESS SHUTES: I did. And then the document  
20 that contained the figure was provided. I believe it  
21 was DWR Exhibit 902.

22 MS. DES JARDINS: Had DWR ever previously  
23 published their rule curves?

24 WITNESS SHUTES: I'm not sure it's a rule  
25 curve, but they've never published any formula that

1 described, to my knowledge, existing operations. I  
2 asked that of Mr. Leahigh, and he had not issued that.  
3 I looked for it everywhere in the EIR and other  
4 supporting documentation, and it was not available.  
5 That's why I asked for it.

6 MS. DES JARDINS: Okay. So you also  
7 calculated for 1 point -- or 1300, 1.3 million-thousand  
8 [sic] acre-feet or 1.3 million acre-feet.

9 WITNESS SHUTES: Right.

10 MS. DES JARDINS: That is slightly higher  
11 target storage; is that correct?

12 WITNESS SHUTES: 300,000 acre-feet as a base  
13 target, higher target storage, correct.

14 MS. DES JARDINS: And then with the minimum of  
15 1600-thousand acre-feet or 1.6 million, it's even  
16 higher?

17 WITNESS SHUTES: That is correct.

18 MS. DES JARDINS: I'd like to ask you about  
19 some conclusions about -- and the September storage in  
20 the Final EIR/EIS.

21 WITNESS SHUTES: All right.

22 MS. DES JARDINS: Please bring up SWRCB-102,  
23 which is the Final EIR/EIS, and Chapter 5, Page 5-142.  
24 And please read the section --

25 WITNESS SHUTES: Can you blow that up, please?

1 Thank you.

2 MS. DES JARDINS: Yeah, this is the analysis  
3 under Alternative 8. Please read the section on  
4 Line 10. This indicates that, with the project,  
5 average annual end-of-September Lake Oroville storage  
6 could decrease by 517,000 acre-feet compared to  
7 existing conditions.

8 Do you know that the modeling for the WaterFix  
9 uses the 1 million acre-foot floor?

10 WITNESS SHUTES: I don't know what this is and  
11 what the context of this is.

12 My understanding was that the 1 million  
13 acre-feet floor was used in modeling based on  
14 cross-examination of Mr. Reyes earlier, I believe, by  
15 you.

16 MS. DES JARDINS: Yes.

17 WITNESS SHUTES: But that's the only knowledge  
18 I have.

19 MS. DES JARDINS: My question is just  
20 generally, with a result like this, is it possible,  
21 given your experience with reservoir impacts, that  
22 there could be a lesser impact only carryover storage  
23 if there were more protective carryover storage rules  
24 like you described?

25 WITNESS SHUTES: Sure there could. And I'm

1 not sure I understand the value of the modeling that  
2 was done here because the modeling was done according  
3 to certain rules. Part of my concern that I've  
4 expressed throughout this process is that, while the  
5 modeling represents certain things based on rules in  
6 the model, we don't have any requirements that would  
7 require actual operations in the future to conform to  
8 the modeling.

9 MS. DES JARDINS: I'd also like to ask you,  
10 CSPA-3, about your qualifications.

11 WITNESS SHUTES: Sure.

12 MS. DES JARDINS: At the top of Page 2.

13 WITNESS SHUTES: I don't have that right in  
14 front of me, so you'll have to --

15 MS. DES JARDINS: Well, yeah. Let's -- okay.  
16 And scroll out.

17 So you mentioned some of the projects you  
18 worked on with reservoir management.

19 WITNESS SHUTES: Yes.

20 MS. DES JARDINS: In Merced, correct?

21 WITNESS SHUTES: Correct. Merced, Don Pedro,  
22 Yuba River development; DeSalba, Upper North Fork  
23 Feather; there's some others. Yuba-Bear  
24 Drum-Spaulding, which is a very complex project.

25 There have been a number of others.

1 MS. DES JARDINS: So did you look at carryover  
2 storage as one of the things that you analyzed in those  
3 projects and reservoir storage in general?

4 WITNESS SHUTES: Yes.

5 MS. DES JARDINS: Let's go down to the bottom  
6 of Page 2. It says you've been a witness in three  
7 water rights hearings before the Board?

8 WITNESS SHUTES: Correct.

9 MS. DES JARDINS: Including the hearing to  
10 revoke the Bureau of Reclamations permits for Auburn  
11 Dam?

12 WITNESS SHUTES: Yes.

13 MS. DES JARDINS: What testimony did you give  
14 in the hearing to revoke -- you provided testimony in  
15 the hearing.

16 WITNESS SHUTES: On Auburn Dam?

17 MS. DES JARDINS: Yes.

18 WITNESS SHUTES: Mostly it went to a reprise  
19 of the history of the application of the failure of the  
20 Bureau of Reclamation to diligently pursue its permits,  
21 either to construct or to complete an environmental  
22 review. So it wasn't specifically technical work in  
23 that case, it was more procedural.

24 MS. DES JARDINS: So did the Board issue a  
25 ruling based in part on -- on the Auburn Dam revocation



1 based in part on your testimony?

2 WITNESS SHUTES: I wouldn't say that the Board  
3 based it on my testimony. I would say that evidently  
4 it certainly didn't hurt, and the Board did issue a  
5 ruling revoking the water rights of Auburn -- Auburn  
6 Dam.

7 MS. DES JARDINS: Okay. Finally, I have a  
8 question that -- let's go back to your testimony  
9 CSPA-202 Errata. There is it is, and on Page 13 at  
10 Line 24.

11 This discusses that flow protections in the  
12 reasonable and prudent alternative are the minimum  
13 flows to avoid jeopardy.

14 WITNESS SHUTES: It does. And the question?

15 MS. DES JARDINS: You further -- let's scroll  
16 down a little further to the next page, where you have  
17 an opinion. But you say the legal standard for  
18 jeopardy is different from the legal standard, or at  
19 least your understanding, to protect public trust  
20 resources?

21 WITNESS SHUTES: That's correct.

22 MS. DES JARDINS: And --

23 WITNESS SHUTES: And that's something that's  
24 pointed out, in fact, in this submittal by NMFSS, in  
25 the 2010 flow criteria hearing which is why I quoted

1 it.

2 I would point out that the example in NMFS is  
3 there was that the Board -- that the NMFS does not  
4 have -- does not feel it has the authority to require  
5 additional flow or reduction of deliveries to, in this  
6 case, Sacramento River Settlement Contractors.

7 While I agree with that analysis, I don't  
8 think that that particular issue is at stake in this  
9 hearing. It might be something that is addressed in  
10 the Water Quality Control Plan. But as I understand  
11 it, that's not a -- an issue that the Board is  
12 contemplating in this particular proceeding.

13 MS. DES JARDINS: Finally, you say the  
14 requirements in the Biological Opinion do not protect  
15 non-listed species like fall-run salmon, fall-run  
16 Chinook in the Sac River downstream of Shasta and  
17 Keswick?

18 WITNESS SHUTES: I believe that's correct.  
19 And I provided an example in which redds were  
20 dewatered, the fall-run Chinook, in a very robust water  
21 year, 2017, with supporting exhibits to show that, when  
22 there were trade-offs made and because, in my opinion,  
23 the species that was harmed by that action was not  
24 listed, there was -- the Bureau or others, including  
25 presumably those adaptive managers from fisheries

1 agencies or real-time operators, depending on how you  
2 frame it, chose to allow the drop in that stage height.

3 That could be addressed -- would have to be  
4 addressed primarily by a different operating regime  
5 earlier in the year in order to avoid running out of  
6 water, in my opinion, so -- at least as a general  
7 issue.

8 That's when you might find more water, in  
9 April or May, to avoid that type of issue.

10 I believe in the particular case of 2017, the  
11 Bureau should simply had the water and should have  
12 released it.

13 MS. DES JARDINS: Another question, since you  
14 mentioned stage height changes, is if there were abrupt  
15 changes in diversions at the North Delta intakes, could  
16 that affect stage height in the Sacramento River?

17 WITNESS SHUTES: I don't really know the  
18 answer to that question.

19 MS. DES JARDINS: Okay. Thank you.

20 Now that concludes my questions.

21 CO-HEARING OFFICER DODUC: Mr. Jackson, I  
22 assume you have no redirect?

23 MR. JACKSON: I have no redirect.

24 CO-HEARING OFFICER DODUC: Bless you,  
25 Mr. Jackson.

1 Thank you, Mr. Shutes, Mr. Cannon.

2 We will reconvene at 9:30 tomorrow to hear  
3 from the remainder of Mr. Jackson's Panel 2.

4 (Whereupon, the proceedings recessed at  
5 5:55 p.m.)

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1 STATE OF CALIFORNIA )  
 ) ss.  
 2 COUNTY OF MARIN )

3 I, DEBORAH FUQUA, a Certified Shorthand  
 4 Reporter of the State of California, do hereby certify  
 5 that the foregoing proceedings were reported by me, a  
 6 disinterested person, and thereafter transcribed under  
 7 my direction into typewriting and which typewriting is  
 8 a true and correct transcription of said proceedings.

9 I further certify that I am not of counsel or  
 10 attorney for either or any of the parties in the  
 11 foregoing proceeding and caption named, nor in any way  
 12 interested in the outcome of the cause named in said  
 13 caption.

14 Dated the 1st day of May, 2018.

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DEBORAH FUQUA  
 CSR NO. 12948