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APPEARANCES

CALIFORNIA WATER RESOURCES BOARD

Division of Water Rights

Board Members Present:

- Tam Doduc, Co-Hearing Officer
- Felicia Marcus, Chair & Co-Hearing Officer
- Dorene D'Adamo, Board Member

Staff Present:

- Andrew Deeringer, Senior Staff Attorney
- Conny Mitterhofer, Supervising Water Resource Control Engineer
- Jean McCue
- Hwaesong Jin
- Thaddeus Hunt

PART 2 REBUTTAL

For Petitioners:

California Department of Water Resources:

- James (Tripp) Mizell
- Thomas Berliner

The U.S. Department of the Interior:

- Amy L. Aufdenberge, Esq.

- 1 APPEARANCES (Continued)
- 2 FOR PROTESTANTS AND INTERESTED PARTIES:
- 3 For Local Agencies of the North Delta, et al.:
- 4 Osha Meserve
- 5 For County of San Joaquin, et al.:
- 6 Thomas H. Keeling
- 7 For California Sportfishing Protection Alliance (CSPA),  
California Water Impact Network (C-WIN), and  
8 AquAlliance:
- 9 Michael Jackson
- 10 For the Sacramento Valley Water Users:
- 11 Meredith Nikkel
- 12 For State Water Contractors:
- 13 Stefanie Morris  
Rebecca Sheehan
- 14 For San Luis & Delta-Mendota Water Authority:
- 15 Daniel J. O'Hanlon
- 16 For County of Sacramento:
- 17 Aaron Ferguson
- 18 For The City of Folsom, The City of Roseville,  
19 Sacramento Suburban Water District and San Juan Water  
District:
- 20 Ryan Bezerra
- 21 For Solano County and Contra Costa County:
- 22 Dan Woelk
- 23 For National Resources Defense Council:
- 24 Doug Obegi
- 25

## I N D E X

1			
2	FOR LOCAL AGENCIES OF THE NORTH DELTA, ET AL., COUNTY		
3	OF SAN JOAQUIN, ET AL., CALIFORNIA SPORTFISHING		
4	PROTECTION ALLIANCE, CALIFORNIA WATER IMPACT NETWORK		
5	AND AQUALLIANCE:		
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1 Wednesday, August 29, 2018 9:30 a.m.

2 PROCEEDINGS

3 ---000---

4 CO-HEARING OFFICER DODUC: All right. Good  
5 morning. Welcome back, everyone, to this Water Right  
6 Change Petition hearing for the California WaterFix  
7 Project.

8 I'm Tam Doduc. To my right is Board Chair and  
9 Co-hearing Officer Felicia Marcus. I believe we will  
10 be joined shortly by Board Member Dee Dee D'Adamo.

11 To my left are Andrew Deeringer and Jean  
12 McCue. We are being -- Well, who will be joining us  
13 shortly. And we're being assisted today by Mr. Hunt.

14 I see only familiar faces so I will skip the  
15 usual announcements. But we'll, of course, focus on  
16 the most important thing, and that is to take a moment  
17 and make sure your noise-making devices are on silent,  
18 vibrate, do not disturb.

19 Before we get to this panel, and before I ask  
20 if there are any other housekeeping matter, I have a  
21 ruling to issue.

22 We have a motion from SJTA to strike portions  
23 of the exhibits in this hearing, comprising the 2010  
24 Delta Flow Criteria Report. That motions is denied.

25 Although we have ruled that the merits of the

1 Vernalis Flow Criteria are not relevant to the  
2 California WaterFix Project, we do not find it  
3 necessary or appropriate to strike corresponding  
4 portions of the 2010 Delta Flow Criteria Report.

5           We do not need to go through the exercise of  
6 striking portions of the report in order to avoid  
7 reliance on those portions of the report that are not  
8 relevant to a decision on the Change Petition.

9           In addition, the Delta Reform Act requires the  
10 State Water Board as a whole to consider the 2010  
11 Report, not just the Hearing Officers, so it would not  
12 be appropriate to strike portions of the report.

13           Although the Board must consider the entire  
14 report, we note that SJTA will not be prejudiced by  
15 this ruling if the Board's final decision in this  
16 hearing does not require increased flows at Vernalis as  
17 a condition of any approval of the Petition.

18           In the unlikely event that the full Board  
19 wishes to consider Delta Flow Criteria that include  
20 increased flows at Vernalis as a condition of the  
21 pending Petition, we will reopen the hearing to allow  
22 SJTA to present rebuttal on the merits of the Vernalis  
23 Flow Criteria.

24           Finally, we disagree with SJTA that, if we do  
25 not grant its Motion to Strike portions of the 2010

1 report, then we must grant the San Joaquin County  
2 Protestant's Motion to Strike portions of DWR's  
3 testimony that rebut the report.

4 DWR's rebuttal testimony concerns other  
5 aspects of the report that, unlike the Vernalis Flow  
6 Criteria, are relevant to the WaterFix Project.

7 All right. Any other housekeeping matters?

8 Miss Nikkel.

9 MS. NIKKEL: Good morning. Meredith Nikkel on  
10 behalf of the Sacramento Valley Water Users, Group  
11 Number 7.

12 I think this qualifies as housekeeping but  
13 you'll tell us.

14 During cross-examination of Walter Bourez and  
15 Dr. Shankar, John Herrick made an oral Motion to Strike  
16 portions of Mr. Bourez's testimony that was related to  
17 the 2010 Flow Criteria Report.

18 It was based on similar grounds as the motion  
19 that was made by the San Joaquin parties against the  
20 DWR witnesses that I understand the Hearing Officers  
21 ruled on earlier this week orally.

22 And John Herrick's Motion to Strike  
23 Mr. Bourez's testimony, I believe, was taken under  
24 submission. And I don't believe it was formally ruled  
25 on, although it -- the grounds were similar to that

1 which was ruled on earlier this week.

2           And so we're simply requesting that the -- for  
3 clarity in the record, that that motion that was made  
4 orally by Mr. Herrick be ruled on.

5           And if you haven't gotten to it, then I  
6 understand. We just thought it would be dealt with in  
7 the same ruling as the ruling on the DWR witnesses.

8           CO-HEARING OFFICER DODUC: Thank you for the  
9 flag of this issue. We will check into it.

10          MS. NIKKEL: Okay. Thank you.

11          CO-HEARING OFFICER DODUC: All right. Any  
12 other housekeeping matter?

13          Miss Meserve.

14          MS. MESERVE: Good morning, yes.

15          I just had a clarification request regarding  
16 the red lines that went out of the Hanson, Hutton and  
17 Acuña --

18          CO-HEARING OFFICER DODUC: Um-hmm.

19          MS. MESERVE: -- testimony.

20          In the oral ruling, it appeared that the Board  
21 was striking all of the -- all of the citations to  
22 Petitioner case in chief testimony as being because  
23 there wasn't -- it was not proper rebuttal to those  
24 citations.

25          However, in the red line that was provided



1 late last night, it appears that only some of those  
2 citations are struck.

3           And so it was just a little different than I  
4 understood the oral ruling to be, which seemed to focus  
5 on the fact that the testimony was responding to the  
6 Flow Report and discounting the citations to the case  
7 in chief testimony that was cited.

8           So I had a question about that.

9           CO-HEARING OFFICER DODUC: I'll turn to the  
10 folks who . . .

11           MR. DEERINGER: So, as I think was indicated  
12 in the oral ruling on Monday, the Hearing Officers  
13 disagreed with some of the extent to which -- I want to  
14 see how I phrase this. Do it a little bit differently.

15           The Hearing Officers --

16           CO-HEARING OFFICER DODUC: I believe it was  
17 the characterization of the testimony to which they  
18 were rebutting.

19           MR. DEERINGER: Correct.

20           That was -- Those were the subject of the  
21 strikes. And the Hearing Officers did not agree  
22 completely with the moving party's description of which  
23 citations were mischaracterized and which were not.

24           And so the stricken portions were those that  
25 the Hearing Officers believed were mischaracterized.

1 And it was an effort to -- It was an efficiency  
2 measure, essentially, since we knew that if those  
3 provisions were -- those sections were not stricken,  
4 then, of course, the parties whose witnesses those were  
5 would want to cross on those and essentially clear up,  
6 you know, do you admit that this was not what they  
7 said. And so it was to save time in that regard.

8           Those -- Those citations that were not  
9 stricken were ones where it was not as clear to the  
10 Hearing Officers that they were mischaracterizing the  
11 testimony.

12           And so, in those instances, it's really --  
13 it's up to the parties whose witnesses those were to,  
14 if they wish, clear that up on cross or straighten the  
15 record there.

16           MS. MESERVE: Okay. Yeah. Just, in preparing  
17 for cross, it's a little bit difficult because, from  
18 the oral ruling, I assumed all these were stricken, and  
19 so I saw last night that they weren't.

20           So, anyway, we'll do the best that we can.  
21 But that -- that was just a little bit unclear.

22           CO-HEARING OFFICER DODUC: Thank you.

23           CO-HEARING OFFICER MARCUS: I was just trying  
24 to not go too far.

25           CO-HEARING OFFICER DODUC: All right. In that

1 case, to which counselor, Mr. -- Is it Mr. Keeling --

2 MR. KEELING: Yes.

3 CO-HEARING OFFICER DODUC: -- who will be  
4 leading us off?

5 MR. KEELING: Yes. Tom Keeling.

6 CO-HEARING OFFICER DODUC: I assume, now that  
7 Miss Morris just stood up, do you have a motion?

8 MS. MORRIS: (Nodding head.)

9 CO-HEARING OFFICER DODUC: Let's hear that.

10 MS. MORRIS: I have three separate motions to  
11 Mr. Stroshane's testimony.

12 The first one is regarding testimony which  
13 I'll list related to transfers, and that is:

14 SJC-337, Page 3, Lines 20 to 25; Page 5,  
15 Lines 12 through Page 7, Line 15; Page 11, Line 22  
16 through Page 15, Line 9; Page 17, Line 19 through  
17 Page 18, Line 7; and the corresponding exhibits which  
18 are SJC -- SJC-340 through -347.

19 This testimony is regarding transfers. It is  
20 testimony that's outside the scope of the Part 2 direct  
21 testimony as nothing was provided by Petitioners  
22 dealing with transfers.

23 The witness has one citation and it's an  
24 attempt to tie this testimony to Mr. Buchholz -- I'm  
25 sorry -- Miss Buchholz's and Mr. Reyes' testimony on

1 the basis of increased water supply, but that testimony  
2 was directly related to contractual exports and it had  
3 nothing to do with transfers.

4           Furthermore, the transfer assumptions in the  
5 model -- and there are transfer assumptions that were  
6 crossed in Part 1 of this hearing -- those did not  
7 change from the Final EIR/EIS to the Supplemental.  
8 Those transfer assumptions remain the same. And this  
9 is not tied to any proposed condition.

10           So the only citation is to the entirety of  
11 Miss Buchholz's testimony and Mr. Reyes' testimony  
12 which had nothing to do with transfers.

13           That's my first motion.

14           CO-HEARING OFFICER DODUC: Let's wait and hear  
15 a response.

16           MS. MESERVE: Could you please clarify that  
17 second one? That started on Page 5 and went to where?

18           MS. MORRIS: Page 5, Line 12 through Page 7,  
19 Line 15.

20                           (Pause in proceedings.)

21           MS. MORRIS: Can I add one more point, too?

22           CO-HEARING OFFICER DODUC: Sure.

23           MS. MORRIS: The exhibits that I moved to  
24 strike, they -- all that evidence is related to  
25 contract negotiation between DWR and the State Water

1 Contractors. The attempt to tie that to increased  
2 transfers or exports from the Delta is incorrect.

3 All of those documents and testimony that are  
4 provided have to do with transfers only between State  
5 Water Contractors, so it doesn't increase the amount of  
6 water exported from North of Delta to South of Delta.

7 So -- In addition, all of that evidence is not  
8 relevant to this hearing.

9 CO-HEARING OFFICER DODUC: Response.

10 MR. KEELING: Tom Keeling for the San Joaquin  
11 County Protestants.

12 Mr. Stroshane's testimony is not related to  
13 the SEIR, so let's make that clear. It's rebuttal.

14 For the delivery and water export testimony of  
15 Miss Buchholz and Mr. Reyes, which omitted a critically  
16 important component of -- of the -- that delivery  
17 capability -- that is, they neglected to inform the  
18 Hearing Officers about the role of water transfers and  
19 the consequences of water transfers under the CWF H3+  
20 in connection with that delivery and export  
21 testimony -- which is serious consequences for, among  
22 other things, public trust resources in the Delta.

23 Basically, it was the sin of omission that  
24 Mr. Stroshane is going to address.

25 With respect to counsel's characterization of

1 the exhibits, that's argument about the effect of the  
2 exhibits. We disagree.

3 And she's certainly entitled to cross-examine  
4 Mr. Stroshane on those issues, but I don't think a  
5 Motion to Strike, at least an oral motion in this  
6 context, is the time to get into an argument about the  
7 effect of a particular exhibit. That's part of his  
8 testimony, and it speaks for itself.

9 CO-HEARING OFFICER DODUC: Response?

10 MS. MORRIS: Yes.

11 In fact, the transfer information was not  
12 omitted. It was in Part 1. It was cross-examined on  
13 extensively. And, again, the assumptions are current  
14 level assumptions which the witness has testified to.  
15 So there is no omission about transfers.

16 And the tie to Mr. Reyes' and Miss Buchholz's  
17 testimony is not proper rebuttal because it didn't deal  
18 with transfers.

19 And I'm not arguing that this testimony was  
20 based on the Supplemental. I'm only stepping through  
21 the possible relevant scopes of rebuttal testimony as  
22 outlined by the Hearing Officers in explaining why, in  
23 my opinion, these do not fit within those scopes.

24 MR. KEELING: If in Part 1 Mr. Stroshane had  
25 rebutted testimony about transfers by talking about the

1 effect on the public trust, his testimony would have  
2 been stricken.

3 CO-HEARING OFFICER DODUC: All right. We'll  
4 take that under consideration.

5 Move to your second motion.

6 MS. MORRIS: The second is also on SJC-337,  
7 Mr. Stroshane's testimony. It's beginning on Line --  
8 Page 15, Line 10.

9 And if you look at that, it has -- it's simply  
10 a public trust analysis. It cites to no evidence of --  
11 that it's rebutting; rather, it's improper legal  
12 argument about what the appropriate public trust is.

13 And it cites to -- to opinions and -- legal  
14 opinions and includes legal argument but really no  
15 testimony related to the evidence in this proceeding.

16 CO-HEARING OFFICER DODUC: Response,  
17 Mr. Keeling.

18 MR. KEELING: Thank you very much.

19 The testimony of Mr. Stroshane regarding  
20 public trust analysis in this case responds to  
21 testimony in DWR's rebuttal case in chief -- Part 2  
22 rebuttal case in chief about the protective nature of  
23 CW -- CWF H3+ on public trust resources.

24 Interestingly, DWR avoids the phrase "public  
25 trust" as if it were toxic. Instead, they talk to --

1 CO-HEARING OFFICER DODUC: I'm sorry,  
2 Mr. Keeling. I need a clarification. It's early and  
3 I've only had one cup of coffee.

4 Perhaps I misheard you. Did you say that this  
5 was in response to DWR's Part 2 rebuttal --

6 MR. KEELING: I'm sorry.

7 CO-HEARING OFFICER DODUC: -- case in chief?

8 MR. KEELING: Part 2 case in chief.

9 CO-HEARING OFFICER DODUC: Not rebuttal.

10 MR. KEELING: No. Part 2 case in chief.

11 CO-HEARING OFFICER DODUC: I thought --

12 MR. KEELING: I'm sorry. I misspoke.

13 CO-HEARING OFFICER DODUC: -- I heard the word  
14 "rebuttal" in there.

15 MR. KEELING: No. I'm the one who's had too  
16 much coffee.

17 But, even though they avoided the phrase  
18 "public trust" -- which is telling in itself -- they  
19 had to testify -- or they had -- did testify that  
20 CWF H3+ is reasonably protective of public trust  
21 resources, fisheries in particular.

22 The -- The objection that some of this is  
23 legal argument is interesting. We've heard this before  
24 in connection with many witnesses on both sides when  
25 people cite, for example, the 1983 National Audubon



1 decision or the Racanel -- Racanelli decision, which  
2 has been cited by parties on both sides throughout.

3 Miss Buchholz, Miss Sergeant, have all had  
4 testimony -- and this has been pointed out before --  
5 that is legal in nature and, in the past, the Hearing  
6 Officers have said, "We understand that --  
7 understanding the interweave of legal principles and  
8 key -- and landmark decisions in Delta water issues and  
9 we will weigh the testimony accordingly and consider  
10 the source."

11 CO-HEARING OFFICER DODUC: Ms. Morris.

12 MS. MORRIS: Briefly.

13 I did not move to strike Mr. Stroshane's  
14 testimony that deals with the public trust and its  
15 comparison to what DWR witnesses used as the basis.  
16 All of that remains.

17 If you look at the testimony in the  
18 beginning -- which I did not move to strike -- it is  
19 strikingly unsimilar to the testimony starting on  
20 Page 15, which is simply legal argument about what the  
21 public trust means or doesn't mean.

22 CO-HEARING OFFICER DODUC: All right.

23 MS. MESERVE: Through which page were you  
24 moving to strike, please? You started at 15, Line 10  
25 and went through . . .

1 MS. MORRIS: 17, Line 16.

2 MS. MESERVE: Thank you.

3 CO-HEARING OFFICER DODUC: We'll take that  
4 under consideration.

5 Your third motion, Miss Morris.

6 MS. MORRIS: My third and final is  
7 Mr. Nakagawa's testimony, SJC-327 --

8 CO-HEARING OFFICER DODUC: You say his name so  
9 much better than I do.

10 MS. MORRIS: I've been practicing.

11 On Page 9 of his testimony, beginning on  
12 Line 3 and a half -- 3 -- between 3 and 4 all the way  
13 through the end.

14 This --

15 CO-HEARING OFFICER DODUC: I'm sorry. To the  
16 end of the page or --

17 MS. MORRIS: To the end of the page, which is  
18 Line 14 and a half.

19 Essentially, this is not rebutting any  
20 testimony. It is -- It's noting a Hearing Officer's  
21 denying LAND's June 20th, 2018, request for extension  
22 of time to review the Supplement.

23 In addition, it's talking about the very short  
24 timeframe and Mr. Nakagawa's other duties and his  
25 inability to prepare appropriately, but that -- maybe

1 let me not say that, not inappropriately -- that he  
2 would have like more time to prepare the testimony. I  
3 don't want to mischaracterize.

4 So, I don't believe that this rebuts any  
5 testimony, and it seems -- it's not really a proper  
6 evidence and it should be stricken from the record.

7 CO-HEARING OFFICER DODUC: Response?

8 MS. MESERVE: Yes.

9 According to the direction for Part 2  
10 rebuttal, Protestants are allowed to prepare testimony  
11 regarding the Admin Draft SEIR, and I think this falls  
12 within that.

13 And Mr. Nakagawa is simply explaining that he  
14 had trouble responding to timeframes that were provided  
15 with respect to the Admin Draft SEIR is.

16 So, it is context and information regarding  
17 the testimony he provides and seems to be responsive to  
18 the Admin Draft SEIR.

19 CO-HEARING OFFICER DODUC: Anything to add,  
20 Miss Morris?

21 MS. MORRIS: It's -- That kind of argument can  
22 be made in legal briefing but this is not appropriate  
23 evidence.

24 What his responsibilities were are not  
25 relevant to this hearing, and it doesn't respond to

1 anything directly in the Supplemental other than "I  
2 didn't have enough time to review it."

3 CO-HEARING OFFICER DODUC: All right. We will  
4 that take -- those under consideration and take a short  
5 break to discuss it.

6 (Recess taken at 9:49 a.m.)

7 (Proceedings resumed at 10:00 a.m.):

8 CO-HEARING OFFICER DODUC: All right. We are  
9 back.

10 Upon considering Miss Morris' three motions:

11 With respect to the first Motion to Strike  
12 testimony from Mr. Stroshane's testimony -- written  
13 testimony, SJC-337, regarding transfer, that motion is  
14 denied.

15 Testimony on transfer rebuts the broader  
16 claims regarding exports and deliveries, and while I  
17 won't refer to it as sins, Mr. Keeling's point about  
18 omission is a good and valid so, therefore, that motion  
19 is denied.

20 With respect to the second Motion to Strike  
21 also from Mr. Stroshane's testimony, SJC-337, from  
22 Page 15, Line 10 to Page 17, Line 16, that motion is  
23 granted.

24 That is closing brief material. It presents  
25 legal arguments that is best captured in closing

1 briefs.

2           The third motion with respect to  
3 Mr. Nakagawa's testimony, Page 9, I believe it was  
4 Line 3 or 4 to the end, that motion is also granted.

5           That language is not responsive to any  
6 particular testimony and is not appropriate rebuttal  
7 material.

8           MR. JACKSON: Yes. May I be heard about  
9 the -- about Item 2?

10           CO-HEARING OFFICER DODUC: I'm sorry. About  
11 Item 2?

12           MR. JACKSON: Yes. About the granted motion,  
13 Page 15, Line 10, Page 17, Line 15.

14           CO-HEARING OFFICER DODUC: I am not accepting  
15 argument.

16           The ruling has been issued. We are now moving  
17 on.

18           Please proceed with presentation of your  
19 direct testimony.

20           And just to note here, Mr. Jackson, I did the  
21 same to Mr. Mizell yesterday, so we're not doing unfair  
22 treatment here.

23           Please present your testimony.

24           MR. KEELING: This morning, we are presenting  
25 the testimony of Brandon Nakagawa and Tim Stroshane.

1 Both witnesses have already been sworn in.

2 And we will begin with Mr. Nakagawa.

3

4 Brandon Nakagawa

5 and

6 Tim Stroshane,

7 called as witnesses by the Local Agencies

8 of the North Delta, et al. County of San

9 Joaquin, et al., and California

10 Sportfishing Protection Alliance,

11 California Water Impact Network, and

12 AquAlliance, having previously been duly

13 sworn, were examined and testified

14 further as follows:

15 DIRECT EXAMINATION BY

16 MR. KEELING: Mr. Nakagawa, is Exhibit SJC-327

17 a true and correct copy of your written testimony?

18 WITNESS NAKAGAWA: It is.

19 MR. KEELING: I believe your qualifications

20 have been previously submitted into evidence as

21 Exhibits SJC-70, -71, in various forms; is that

22 correct?

23 WITNESS NAKAGAWA: That is correct. I have an

24 addition.

25 MR. KEELING: Can you tell us what your change

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1 or addition is.

2           WITNESS NAKAGAWA: In addition to my regular  
3 duties as SGMA and other water-related issues, the  
4 Groundwater -- Sustainable Groundwater Management Act,  
5 Stormwater, I have also been added flood management to  
6 my plate.

7           MR. KEELING: Thank you.

8           Could you please summarize your testimony for  
9 the Hearing Officers.

10          WITNESS NAKAGAWA: Thank you.

11          So good morning, Chair, Board Members,  
12 participants. I just wanted to thank you. I sincerely  
13 appreciate you accommodating my family issues  
14 situation.

15          As established in Part 1 of these proceedings,  
16 I'm currently employed by the San Joaquin County  
17 Department of Public Works as the County Water  
18 Resources Coordinator; graduate of the University of  
19 the Pacific School of Engineering with a Civil  
20 Engineering degree; and a Registered Civil Engineer  
21 with the State of California.

22          My rebuttal testimony today will point out  
23 examples of the lack of specificity in the Draft  
24 Supplemental EIR/EIS so that impacts can be properly  
25 analyzed and disclosed to the public.

1           Before I get started, if the hearing staff,  
2 Mr. Hunt, could queue up Exhibits SJC-73, 329, Page  
3 M3-4, Sheet 1, SJC-330 and SJC-332. Thank you.

4           In Part 1, my staff and I prepared Exhibits  
5 SJC-73, -74 and -75, if you recall, depicting the  
6 approximate location of wells in the vicinity of the  
7 proposed tunnels' alignment.

8           To help orient the Hearing Officers and the  
9 audience, SJC-75, please.

10           We're looking at a map of the tunnels'  
11 alignment as proposed in Part 1 at the time.

12           And the footprint of the Project is generally  
13 located near the Sacramento River --

14           (Exhibit displayed on screen.)

15           WITNESS NAKAGAWA: -- near the towns of  
16 Courtland, Hood and Clarksburg.

17           (Exhibit displayed on screen.)

18           WITNESS NAKAGAWA: That's 73. I think we're  
19 looking for SJC-75.

20           (Exhibit displayed on screen.)

21           WITNESS NAKAGAWA: Oh, there you go.

22           The map is oriented with north pointing  
23 upwards on the picture. Interstate 5 is generally  
24 located to the -- to the east of the red line.

25           The cluster of wells about a third down the



1 page would be the Town of Hood. There's one well  
2 directly under the -- the tunnel alignment there.

3           Petitioners have since presented the Draft  
4 Supplemental EIR/EIS and the new proposed tunnels'  
5 alignment.

6           As I testified in Phase 1, the reasonable  
7 starting place to ascertain if the tunnels would have  
8 an impact on wells is to first locate wells within the  
9 vicinity of the tunnels' alignment, as we've done.

10           In looking through the -- the Draft SEIR/EIS,  
11 you know, Petitioners assert that the tunnels'  
12 alignment would change slightly to avoid impacting  
13 municipal wells serving the Town of Hood. And we do  
14 see that.

15           But, again, from the map, you can see that  
16 there's still additional wells in the vicinity of the  
17 tunnels' alignment.

18           To my knowledge, Petitioners have not  
19 performed or published any search of wells in the  
20 vicinity of the proposed tunnel alignment nor performed  
21 any analysis on the potential impacts to those wells.

22           Staff, please display SJC-329, M3-4, Sheet 1.

23           And the next slide after that will be SJC-330.

24           (Exhibit displayed on screen.)

25           WITNESS NAKAGAWA: Thank you.

1           So, as depicted on the map, this is the newly  
2 proposed tunnels' alignment. It comes near to the  
3 Stone Lakes National Wildlife Refuge.

4           If staff would please bring up SJC-330.

5           (Exhibit displayed on screen.)

6           WITNESS NAKAGAWA: This is a closeup view of  
7 the Stone Lakes area.

8           Sheet 1, I believe . . .

9           MS. MESERVE: This is 329.

10          WITNESS NAKAGAWA: 329.

11          (Exhibit displayed on screen.)

12          WITNESS NAKAGAWA: There you go. 329 --

13 That's 329. I'm sorry, 329, Sheet 1.

14          (Exhibit displayed on screen.)

15          WITNESS NAKAGAWA: There you go.

16          And I -- I -- As depicted, the impacts to the  
17 Refuge have not been analyzed by the Petitioners.

18          The tunnels may interfere with local  
19 groundwater flow, could impede the flow of groundwater  
20 to and from the system of lakes on the Refuge, and also  
21 potentially to the area's groundwater-dependent  
22 ecosystems.

23          Secondly, the tunnels may interfere with the  
24 ability of the Refuge to irrigate the existing wells as  
25 depicted on SJC-330.

1 (Exhibit displayed on screen.)

2 WITNESS NAKAGAWA: That's a graphic obtained  
3 from the Fish and Wildlife Service as part of the  
4 Irrigating Lands Program.

5 Those are wells located that provide  
6 irrigation water to Refuge lands.

7 (Pause in proceedings.)

8 WITNESS NAKAGAWA: The -- The Administrative  
9 Draft Supplemental EIR/EIS also includes changes to the  
10 locations of tunnel muck disposal sites.

11 What is missing is a detailed description of  
12 how the Tunnels' Project will safely contain the muck  
13 away from groundwater wells, irrigation systems,  
14 drainage systems, or water diversions.

15 How will the Petitioners properly manage and  
16 associate the water activities, which if improperly  
17 contained or discharged may threaten Delta water  
18 quality?

19 Petitioners have incompletely described tunnel  
20 muck management activities and it failed to analyze and  
21 present potential impacts in light of the proposed  
22 changes.

23 Petitioners have described the need for  
24 approximately 2 million cubic yards of borrow fill at  
25 each intake site and total in -- a total of

1 approximately 21 million cubic feet of -- yards of  
2 borrow -- cubic yards of borrow fill.

3           It begs the question from where on-site, and  
4 the scene of the Project off-site. If on-site at the  
5 scene of the Project, Petitioners have not provided an  
6 analysis that would lead to the avoidance and/or  
7 mitigation of removing this much material.

8           My last example will require the map on  
9 SJC-332.

10           (Exhibit displayed on screen.)

11           WITNESS NAKAGAWA: There's inadequate  
12 disclosure of impacts as Petitioners will show avoided  
13 impacts and mitigation to the Sacramento River farmers  
14 on both the left and right banks where existing  
15 diversion intakes are not in Exhibits LAND-597.

16           Loss of diversion facilities, farmland, use  
17 and access to and from property, are just some of the  
18 impacts that can occur with construction of intakes and  
19 other mitigation.

20           Mr. Bednarski, at his cross-examination on  
21 March 5th, 2018, stated he was sure that moving the  
22 levee on the westside of the Sacramento River was not  
23 part of the Project.

24           On map Exhibit SJC-332 --

25           (Exhibit displayed on screen.)

1           WITNESS NAKAGAWA:  -- at the top right panel,  
2 there's a shaded area south of Clarksburg slated for  
3 entry by WaterFix personnel on the west bank of the  
4 Sacramento River.

5           Putting oneself in the shoes of a local  
6 farmer, would you be concerned if the Petitioners said  
7 that modifications to the west bank of the Sacramento  
8 River would not occur and then sent you a notice  
9 telling you that they wanted to survey the area,  
10 anyway?

11           Petitioners have not adequately described  
12 their Project, leaving locals to only guess as to the  
13 scope of the Projects and its impacts.

14           This concludes the summarization of my written  
15 rebuttal testimony.

16           It's my understanding that the Petitioners and  
17 not the Protestants bear the burden of providing  
18 sufficient information, a burden which, as I've  
19 presented in my testimony, they have not met.

20           Thank you.

21           MR. KEELING:  Thank you.

22           Mr. Stroshane, is Exhibit SJC-337 a true and  
23 correct copy of your written testimony?

24           WITNESS STROSHANE:  Yes, it is.

25           MR. KEELING:  I believe your qualifications

1 statement had already been submitted in this proceeding  
2 in RTD-1.

3 Have there been any changes or additions to  
4 that?

5 WITNESS STROSHANE: Just one addition. I am  
6 an author of a book entitled "Drought, Water Law and  
7 the Origins of California Central Valley Project." It  
8 was published in 2016.

9 MR. KEELING: Could you please summarize your  
10 testimony for the Hearing Officers.

11 WITNESS STROSHANE: Certainly.

12 And I'll -- I'll do the best I can since  
13 portions of my written testimony have been struck and  
14 I've gone through my remarks -- my prepared remarks in  
15 order to comply -- comport with that.

16 CO-HEARING OFFICER DODUC: Thank you.

17 WITNESS STROSHANE: My greetings to Hearing  
18 Officers Doduc and Marcus and Board Member D'Adamo.

19 I am Tim Stroshane, Policy Analyst with  
20 Restore the Delta.

21 There are two separate bases for my written  
22 rebuttal testimony:

23 First, I briefly rebut the Reasonable  
24 Protection Standard offered in Petitioners' Part 2  
25 written and oral testimony as insufficient to meet the

1 public trust standard of protection. In that part of  
2 my testimony, I compare and contrast the two standards.

3           The second part of my written testimony takes  
4 up an invitation from the Hearing Officers' July 2nd  
5 ruling stating that San Joaquin County, et al., parties  
6 may offer testimony concerning a potential for the  
7 WaterFix Project to cause an increase in diversions  
8 from the Delta during Part 2 rebuttal, provided that  
9 the testimony identifies the Part 2 case in chief  
10 evidence to which it is responsive.

11           For the second part of my testimony, I respond  
12 to the following assertions by DWR Part 2 witnesses  
13 Gwen Buchholz and Erik Reyes:

14           Miss Buchholz stated (reading):

15                   "CWF H3+ will increase average  
16                   annual deliveries of water conveyed  
17                   through the Delta as compared to the  
18                   No-Action Alternative over the long term  
19                   and especially in wetter water years."

20           Mr. Reyes stated (reading):

21                   "Simulated long-term average  
22                   deliveries to CVP and SWP North-of-Delta  
23                   and South-of-Delta water Service  
24                   Contractors were similar or higher than  
25                   NAA under the H -- under CWF H3+

1 scenario."

2 These statements by Petitioners' witnesses are  
3 misleadingly incomplete because they ignore or mask the  
4 role of water transfers in maintaining an increasing  
5 reliance on Delta water exports under CWF H3+.

6 Water transfers are market-based actions to  
7 supplement contractors' Table A SWP contract amounts  
8 during years when Table A allocations by DWR are  
9 reduced. They are intended to facilitate movement of  
10 water from north of Delta willing sellers, who often --  
11 who are often senior water right holders, through the  
12 Delta in exchange for monetary compensation or related  
13 consideration. Transfers represent the State and  
14 Federal water systems' adaptation to overappropriated  
15 water.

16 Petitioners' DWR -- Excuse me.

17 Petitioner DWR's SWP water right are junior to  
18 those of a number of senior water right holders north  
19 of and in the Delta.

20 California Water Impact Network documented  
21 through watershed-wide analysis that there are over  
22 5-acre feet of water rights claims for each acre-foot  
23 of historical average annual flow in the Sacramento  
24 River Basin, without accounting for public trust or  
25 other instream flows.



1           Petition facilities are expected to provide  
2 separate cross-Delta tunnels with a longer transfer  
3 window than currently allowed under present regulatory  
4 constraints.

5           In my written testimony, I provide citations  
6 to the Final EIR/EIS and to my Part 2 testimony for  
7 Restore the Delta rather than restate that information  
8 here.

9           Conclusion: Key sources of water for  
10 Petitioner DWR and its Water Contractors or senior  
11 water rights holders north of the Delta.

12           Their contribution both to public trust  
13 protective flows and to water supply for water transfer  
14 market activities remain unexamined.

15           That concludes my testimony.

16           CO-HEARING OFFICER DODUC: Thank you.

17           Does this conclude direct for this panel,  
18 Mr. Keeling?

19           MR. KEELING: It does indeed.

20           CO-HEARING OFFICER DODUC: All right. Let me  
21 run down the cross-examination requests I have:

22           I have DWR for 45 minutes; Group 4's -- I see  
23 Mr. O'Hanlon here -- for 15; Group 21 had requested 20  
24 minutes but I don't see either Mr. Ruiz or Mr. Herrick  
25 here; and then I have Miss Des Jardins, who I also do

1 not see here, requesting 20 minutes.

2 Is anyone else requesting cross-examination?

3 All right. Not seeing any, I'll ask

4 Mr. Mizell or Miss Morris or both to come up.

5 Mr. O'Hanlon, you're still anticipating  
6 direct -- conducting cross?

7 MR. O'HANLON: Yes, very briefly, although  
8 those questions may be covered by --

9 CO-HEARING OFFICER DODUC: All right.

10 MR. O'HANLON: -- Miss Morris.

11 CO-HEARING OFFICER DODUC: Mr. Ferguson.

12 MR. FERGUSON: Yeah. Aaron Ferguson, County  
13 of Sacramento.

14 Can I reserve 15 minutes, please.

15 CO-HEARING OFFICER DODUC: And you are  
16 Group . . .

17 MR. FERGUSON: I think it's 45.

18 MS. MORRIS: Thank you. Good morning.

19 I think all my questions are for  
20 Mr. Stroshane, and I don't anticipate using the entire  
21 45 minutes, and they're related to his testimony about  
22 transfers.

23 CROSS-EXAMINATION BY

24 MS. MORRIS: Good morning, Mr. Stroshane.

25 WITNESS STROSHANE: Good morning.

1 MS. MORRIS: How are you?

2 WITNESS STROSHANE: Reasonably well.

3 MS. MORRIS: And --

4 CO-HEARING OFFICER DODUC: Hold on.

5 No, no, no, no. Mr. Bourez's answer is much  
6 better.

7 WITNESS STROSHANE: I'm fine, thank you.

8 (Laughter.)

9 WITNESS STROSHANE: Thanks for asking.

10 MS. MORRIS: In your testimony that's marked  
11 SJC-337 related to transfers, is your opinion based on  
12 the fact that there will be more transfers from North  
13 Delta to South of Delta with-California WaterFix?

14 WITNESS STROSHANE: Yes.

15 MS. MORRIS: And is the support for your  
16 opinion that the transfers you describe on Page 6 in  
17 your testimony as well as Exhibits 300 -- I'm sorry --  
18 SJC -- SJC-340 to 347?

19 (Pause in proceedings.)

20 WITNESS STROSHANE: So, if I understand, your  
21 first question asked me if North-of-Delta to  
22 South-of-Delta transfer -- was about North-of-Delta to  
23 South-of-Delta transfers; is that correct?

24 MS. MORRIS: The -- My second question --

25 WITNESS STROSHANE: But I'm -- I'm just trying

1 to remember what your first question was briefly.

2 MS. MORRIS: Yes.

3 WITNESS STROSHANE: Okay.

4 CO-HEARING OFFICER DODUC: And then do you  
5 need the second question repeated?

6 WITNESS STROSHANE: Yes. I think that would  
7 be helpful.

8 MS. MORRIS: I'm trying to do this  
9 efficiently.

10 So when I went through your testimony, I'm  
11 asking: Is the support for your opinion of the  
12 transfers that you describe on Page 6 of your  
13 testimony, as well as SJC Exhibits 340 to 347?

14 WITNESS STROSHANE: My opinion is based on  
15 those, plus several other sources, including the  
16 EIR/EIS passages, of which I have cited to in my  
17 testimony -- in my own testimony as well from Part 2.

18 MS. MORRIS: But the analysis that you did in  
19 Part 2 is already documented.

20 So the new analysis you're basing it on is the  
21 transfers you describe on Page 6 as well as those  
22 exhibits, SJC-340 through 347; correct?

23 WITNESS STROSHANE: It's -- Your question  
24 sounds like you're asking me about specific water  
25 transfers. And I was -- The paragraph at Line 15 on

1 Page 6 begins by saying (reading):

2 "Water transfers are demonstrably  
3 important to expected operational use of  
4 Petition Facilities."

5 So it's not -- I'm not being specific there.

6 MS. MORRIS: Right.

7 Okay. Let's do -- Let's step back and then  
8 let's talk about exhibits.

9 In your testimony on Page 23 (sic) through --  
10 Page 6, Lines 23 through Page 7, Line 2 --

11 (Exhibit displayed on screen.)

12 MS. MORRIS: -- you assert that -- that there  
13 will be more transfers, and that you're basing that on  
14 recent SWP contract amendment negotiations, and then  
15 you list SJC-40 through SJC-347; correct?

16 WITNESS STROSHANE: That passage is not  
17 specific one way or the other, as far as I can tell.

18 (Reading):

19 "Yet, many public statements and  
20 recent SWP contract amendment  
21 negotiations concerning . . . WaterFix  
22 and other water management tools exhibit  
23 widespread understanding by Petitioner  
24 DWR and SWP water service contractors  
25 that water transfers" --

1 CO-HEARING OFFICER DODUC: Mr. Stroshane --

2 WITNESS STROSHANE: -- "and exchanges" --

3 I'm sorry.

4 CO-HEARING OFFICER DODUC: -- if I may, I  
5 think she's only asking you to confirm that the  
6 exhibits listed on Page 7, Line 1 and Line 2, are the  
7 basis for your conclusion that you just tried to read  
8 into the --

9 WITNESS STROSHANE: Yes.

10 CO-HEARING OFFICER DODUC: -- record again.

11 WITNESS STROSHANE: It's intended to document  
12 that there were many public statements and allude to  
13 the recent amendment negotiations, that's correct. I'm  
14 sorry to get long-winded.

15 MS. MORRIS: So, again, going back:

16 The rest of the citations, as we went through  
17 this, are related to your previous analysis that you've  
18 presented in either Part 1 or Part 2; correct?

19 WITNESS STROSHANE: They were primarily in  
20 Part 2, yes.

21 MS. MORRIS: And focusing again on your  
22 statements related to the DWR, State Water Contractor  
23 amendments, as well as Exhibits 340 through 347, those  
24 are simply related to the public statements and  
25 contract amendment negotiations between DWR and the

1 State Water Project Contractors; correct?

2 WITNESS STROSHANE: Yes.

3 MS. MORRIS: Mr. Stroshane, do you understand  
4 that -- what Table A is?

5 WITNESS STROSHANE: I think reasonably well.  
6 It's a table that appears in each of the State Water  
7 Contractors (sic) that expresses the -- the maximum  
8 demand of -- for water that a Contractor would like  
9 each year.

10 MS. MORRIS: Okay. Let's -- I want to begin  
11 on the same page because I think this is an important  
12 concept.

13 So, if you could pull up your exhibit that you  
14 attached as SJ-338.

15 And if we could go to Page 14 of the document,  
16 which is definitely not the .pdf page. Sorry.

17 (Exhibit displayed on screen.)

18 MS. MORRIS: And you're familiar with this  
19 document; correct?

20 WITNESS STROSHANE: I've been through it some,  
21 yes.

22 MS. MORRIS: And if we could stop right there.

23 And if you can take a look at the definition  
24 of Table A water.

25 Isn't it true it's not a demand of water but,

1 rather, it's -- I'm going to use layman's terms -- it's  
2 a pie, and that's the available pie, and then the  
3 amount of water is allocated by Table A percentage so  
4 that the demand is different from year to year?

5 WITNESS STROSHANE: Yes. I -- I agree with  
6 what you've -- what you've laid out.

7 Contractors often refer to Table A demand  
8 in -- I mean, I can't cite to anything specific.

9 But it does represent the maximum amount under  
10 normal Table A allocation processes that DWR goes  
11 through each spring to determine how much or --  
12 relative to Table A Contractors can get.

13 MS. MORRIS: And is that total demand met  
14 every single year?

15 WITNESS STROSHANE: Oh, no.

16 MS. MORRIS: And, therefore, then, is it  
17 proportioned based on the Table A percentages between  
18 the Contractors?

19 WITNESS STROSHANE: That's my understanding,  
20 yes.

21 MS. MORRIS: Isn't it true that Table A  
22 transfers and exchanges between State Water Project  
23 Contractors do not change the amount of water exported  
24 from the Delta?

25 WITNESS STROSHANE: They don't change the



1 amount of Table A water exported from the Delta.

2 MS. MORRIS: And if we could look at SJC-344.

3 (Exhibit displayed on screen.)

4 MS. MORRIS: This is a document you cited.

5 It's a Draft Working Document For Public Discussion  
6 related to the State Water Project contract amendment.

7 And do you see on this page that, under  
8 Objective 1, it says, to (reading):

9 "Supplement and clarify the terms of  
10 the SWP water contract that . . . provide  
11 greater water management regarding  
12 transfers and exchanges of SWP water  
13 within the SWP service area."

14 WITNESS STROSHANE: I do see that, yes.

15 MS. MORRIS: So isn't it fair to characterize  
16 that these exchanges and transfers can only occur  
17 within the SWP Contractor family?

18 WITNESS STROSHANE: Could you say that  
19 question once more.

20 MS. MORRIS: Let me be -- Let me stop using  
21 slang and I won't say "family."

22 Isn't it true that these transfers and  
23 exchanges can only occur within the SWP service area  
24 amongst SWP Contractors?

25 MR. KEELING: Objection: Argumentative; and

1 mischaracterizes the exhibit.

2 CO-HEARING OFFICER DODUC: Overruled.

3 WITNESS STROSHANE: Okay. Thanks, anyway.

4 The . . . I'm sorry. Miss Morris, would you  
5 restate the question once more? I'm sorry.

6 MS. MORRIS: Isn't it true that these  
7 transfers and exchanges can only occur in the SWP  
8 service area amongst SWP Contractors?

9 WITNESS STROSHANE: Given the scope of what's  
10 in the Draft Agreement in Principle, yes.

11 MS. MORRIS: Have you looked at the existing  
12 water supply contracts?

13 WITNESS STROSHANE: Not in great detail, no.

14 MS. MORRIS: I just want to go through really  
15 briefly -- very quickly. If we can start with SJC-340.

16 (Exhibit displayed on screen.)

17 MS. MORRIS: And this is just a notice to the  
18 public that there's going to be a contract amendment  
19 negotiation; correct?

20 WITNESS STROSHANE: Yes.

21 MS. MORRIS: And could you please pull up  
22 SJC-341.

23 (Exhibit displayed on screen.)

24 MS. MORRIS: And is it -- Is this document  
25 simply stating the Department and State Water Project

1 Contractors' objectives for the contract amendment?

2 WITNESS STROSHANE: Yes.

3 MS. MORRIS: And could you pull up SJC-342.

4 (Exhibit displayed on screen.)

5 MS. MORRIS: And is this simply a meeting  
6 summary of the February 13, 2018, contract negotiation  
7 meeting?

8 WITNESS STROSHANE: Yes, it is.

9 As I recall, I included it because it also --

10 CO-HEARING OFFICER DODUC: Thank you,  
11 Mr. Stroshane.

12 WITNESS STROSHANE: Oh, okay.

13 MS. MORRIS: And if you could pull up  
14 SJC-33 -- 343.

15 (Exhibit displayed on screen.)

16 MS. MORRIS: Is this a February 28, 2018,  
17 white paper from the Public Water Agencies that  
18 contract with DWR related to their objectives?

19 WITNESS STROSHANE: Yes, it is.

20 MS. MORRIS: And could you also pull up  
21 SJC-344.

22 (Exhibit displayed on screen.)

23 MS. MORRIS: And is this a -- a Draft  
24 Agreement in Principle for the State Water Project  
25 water supply contract amendment?

1 WITNESS STROSHANE: Yes, it is.

2 MS. MORRIS: And if you could, Mr. Hunt, go to  
3 Page 9 of this document.

4 (Exhibit displayed on screen.)

5 MS. MORRIS: And maybe we should just . . .

6 Maybe we should just go back to Page 7. I  
7 apologize.

8 (Exhibit displayed on screen.)

9 MS. MORRIS: And regarding California  
10 WaterFix, isn't it true that the objective for both the  
11 Department and the Public Water Agencies as described  
12 in this document is to -- simply to achieve water cost  
13 allocation for California WaterFix?

14 WITNESS STROSHANE: Yes.

15 MS. MORRIS: And provide a methodology in the  
16 contract for how it would be billed to its Contractors?

17 WITNESS STROSHANE: Yes.

18 MS. MORRIS: And if we could go to Page 9 now.

19 (Exhibit displayed on screen.)

20 MS. MORRIS: And based on this Draft Agreement  
21 in Principle, isn't it true that the five North Delta  
22 Contractors are exempt from the costs of California  
23 WaterFix?

24 WITNESS STROSHANE: Yes, ma'am.

25 MS. MORRIS: And if we could go to SJC-345.

1 (Exhibit displayed on screen.)

2 MS. MORRIS: And, Mr. Stroshane, is this  
3 simply another meeting summary of the water supply  
4 contract negotiation, dated June 19th?

5 WITNESS STROSHANE: Yes, it is.

6 MS. MORRIS: And then could we go to SJC-346.

7 (Exhibit displayed on screen.)

8 MS. MORRIS: And is this another handout that  
9 was provided in the context of the contract negotiation  
10 to describe the water transfer process amongst the  
11 Public Water Agencies that contract with DWR?

12 WITNESS STROSHANE: Yes, it is.

13 MS. MORRIS: And if we could go to SJC-347.

14 CO-HEARING OFFICER DODUC: I assume you have a  
15 point in going through this.

16 MS. MORRIS: I'm almost done. I have to  
17 establish the evidence, and then I'm going to make a  
18 motion.

19 CO-HEARING OFFICER DODUC: Ah.

20 MS. MORRIS: On SJC-347, is this another  
21 document that was handed out at the contract amendment  
22 process?

23 WITNESS STROSHANE: Yes.

24 MS. MORRIS: And is this -- Does this just  
25 explain the water delivery priorities as the Department

1 delivers water to its Public Water Agencies?

2 WITNESS STROSHANE: Yes.

3 MS. MORRIS: Okay. I'd like to make a Motion  
4 to Strike SJC-340 through -347 from the record.

5 As Mr. Stroshane's testified, the Table A  
6 allocation does not increase exports from the Delta.  
7 It's exchanges and transfers between PWA, so it does  
8 not create more transfers North of Delta to South of  
9 Delta.

10 All of these documents have to deal with that  
11 contract amendment process and, thus, are outside the  
12 scope of this hearing and not -- they don't provide  
13 relevant information in this hearing.

14 CO-HEARING OFFICER DODUC: Response.

15 MR. JACKSON: Yes.

16 These documents are the basis for  
17 Mr. Stroshane's response to the rebuttal testimony of  
18 Gwen Buchholz and Erik Reyes indicating that their  
19 transfers will result in more water being delivered  
20 South of Delta.

21 This is a demonstration of how that water is  
22 being split up in other -- in -- in other meetings that  
23 are going on. It is for supporting purposes of his  
24 position that there has been no examination of the  
25 environmental impacts of increasing diversions,

1 which -- which is in the testimony.

2           And it lays out the fact that this decision  
3 is -- or this testimony is reflective of a process  
4 that's going forward, not complete yet. But this is  
5 the latest information indicating why two very  
6 important witnesses in this case take the position that  
7 there will be more water exports than is -- because of  
8 the transfers than is reflected in the impact analysis.

9           CO-HEARING OFFICER DODUC: Miss Morris.

10          MS. MORRIS: Yes.

11          In fact, these documents, as the witness has  
12 testified, show that there is no increase in exports on  
13 transfers that occur between the State Water  
14 Contractors amongst themselves. In fact, there can't  
15 be, subject to the contracts that are held with DWR.

16          In addition, I believe that these do not  
17 support Mr. Reyes' or Buchholz's -- Mr. Reyes' or  
18 Miss Buchholz's testimony because they didn't talk  
19 about transfers.

20          And, again, these do not increase the North of  
21 Delta/South of Delta, and, therefore -- I understand my  
22 Motion to Strike earlier on transfers was denied, but  
23 these do appear to be the basis for which this witness  
24 is trying to present this testimony, and it actually  
25 does not increase the amount of exports.

1           Rather, it's a pie. And how that pie is  
2 divided after all of the obligations of DWR are met is  
3 not relevant to this proceeding.

4           CO-HEARING OFFICER DODUC: Final response,  
5 Mr. Keeling.

6           MR. KEELING: Yes.

7           I would also point out that the objection, in  
8 order to exclude, mischaracterized the witness'  
9 testimony.

10           The testimony was not that transfers would be  
11 increased. It was only as to Table A water. He was  
12 very clear and emphatic at the end of his response that  
13 he's only talking about Table A water.

14           The followup question, of course, is: What  
15 else were you talking about on transfers?

16           CO-HEARING OFFICER DODUC: All right.

17 Miss Morris --

18           MS. MORRIS: Again --

19           CO-HEARING OFFICER DODUC: I wasn't inviting  
20 further comment.

21           MS. MORRIS: Okay.

22           CO-HEARING OFFICER DODUC: I'm about to issue  
23 a ruling.

24           Your motion is denied. It'll go to weight.

25           MS. MORRIS: Thank you.



1 Thanks. I have no further questions.

2 CO-HEARING OFFICER DODUC: All right.

3 Mr. O'Hanlon.

4 LEFT10: No questions, thank you.

5 CO-HEARING OFFICER DODUC: Mr. Ferguson.

6 MR. FERGUSON: I have no questions.

7 CO-HEARING OFFICER DODUC: Is there any  
8 request for redirect?

9 MR. KEELING: Can you give us a moment? Thank  
10 you.

11 CO-HEARING OFFICER DODUC: And as they are  
12 conferring, Mr. Mizell, it looks like we're going to be  
13 getting to your witnesses very soon.

14 MR. MIZELL: (Nodding head.)

15 (Pause in proceedings.)

16 CO-HEARING OFFICER DODUC: Mr. Keeling.

17 MR. KEELING: Thank you.

18 We have -- We have one question, probably  
19 involving a preliminary, but . . .

20 MS. MORRIS: A lawyer question.

21 MR. KEELING: One redirect question, I think,  
22 of Mr. Stroshane only.

23 CO-HEARING OFFICER DODUC: All right.

24

25

1 REDIRECT EXAMINATION BY

2 MR. KEELING: Mr. Stroshane, Ms. Morris asked  
3 you if transfers under H3+ would change the amount of  
4 water being diverted north to south.

5 Do you recall that question?

6 WITNESS STROSHANE: Yes, I do.

7 CO-HEARING OFFICER DODUC: Actually, she  
8 didn't specifically refer to H3+.

9 MR. KEELING: The WaterFix, then. The  
10 WaterFix -- The WaterFix Project.

11 CO-HEARING OFFICER DODUC: I believe -- I'll  
12 let her speak for herself.

13 MR. KEELING: Well, there was a reference to  
14 Table A.

15 CO-HEARING OFFICER DODUC: Yes, there was.

16 Hold on. Let's let her clarify.

17 MS. MORRIS: I didn't ask any questions about  
18 WaterFix or any modeling assumptions.

19 My question was limited to Table A and whether  
20 or not that was increasing transfers and exchanges from  
21 North of Delta to South of Delta.

22 CO-HEARING OFFICER DODUC: Thank you for the  
23 clarification.

24 Mr. Keeling, if you would like to reframe that  
25 question.

1 MR. KEELING: Do you recall the question  
2 Miss Morris just repeated?

3 WITNESS STROSHANE: Yes, I do.

4 MR. KEELING: Thank you.

5 And I believe you answered with specific  
6 reference to Table A.

7 Do you recall your response?

8 WITNESS STROSHANE: Yeah. I specified that --  
9 that Table A deliveries, within the meaning of the  
10 Agreement in Principle, would not increase because they  
11 all -- they occur all within the -- the State Water  
12 Contractors' service area -- State Water Project  
13 service area.

14 MR. KEELING: Did you mean to suggest that the  
15 amount of water being transferred post-Project would  
16 not -- through the Delta would not change?

17 WITNESS STROSHANE: No.

18 MR. KEELING: What did you mean, then?

19 WITNESS STROSHANE: I meant that there would  
20 be -- and this is material that I cite to in my written  
21 testimony but did not reproduce for -- because it had  
22 already been placed in the record -- that the capacity  
23 of the system to process -- to convey transfers would  
24 increase.

25 And there were passages in my previous

1 testimony for Part 2 that represented documentation by  
2 Petitioners' EIR/EIS to that effect, and that those  
3 would come from North-of-Delta senior water right  
4 holders.

5 MR. KEELING: Thank you.

6 MS. MORRIS: I would just move to strike that,  
7 his last response. I didn't ask about capacity.

8 My questions on cross were very limited to  
9 transfers related -- transfers and exchanges based on  
10 State Water Project only and not about capacity of  
11 anything to do with this Project.

12 CO-HEARING OFFICER DODUC: Mr. Keeling.

13 MR. KEELING: Well, Mr. Stroshane's testimony  
14 is all about the effect of this Project with respect to  
15 transfers. You can't ask the question without getting  
16 into that.

17 And the implication of the answer, given --  
18 given the narrow range of the question was, "Oh, there  
19 would be no difference." And I wanted to make sure  
20 that was clear on the record that was not what he was  
21 saying.

22 CO-HEARING OFFICER DODUC: Be that as it may,  
23 that is outside the scope of her cross, as well as  
24 outside the scope of Mr. Stroshane's testimony, because  
25 he did not discuss capacity.

1           Objection sustained; motion granted.

2           All right. At this time, I believe that  
3 concludes all of your cases.

4           Would you like to move your exhibits into the  
5 record?

6           MR. KEELING: Yes. There is no more --

7           CO-HEARING OFFICER DODUC: I'm sorry. Was  
8 there any recross on the other questions?

9           MS. MORRIS: (Shaking head.)

10          CO-HEARING OFFICER DODUC: Just to make sure.

11          Okay. Seeing none.

12          MR. KEELING: All right. The -- Yes. This  
13 concludes the San Joaquin Protestants' Part 2 rebuttal  
14 testimony. And we have five witnesses, not all of  
15 whose exhibits are under the SJC rubric. Some are  
16 under other rubrics.

17          And at this time, we move into evidence all of  
18 the written testimony and exhibits of Mr. Stroshane,  
19 Mr. Nakagawa, Mr. Stokely, Mr. Shilling, and  
20 Dr. Michael.

21          And my -- We will have a list -- To make it  
22 easy for you, we'll give you a list of all of those by  
23 the end of the day.

24          CO-HEARING OFFICER DODUC: You know what?  
25 Since it is rather complicated with so many parties and

1 witnesses and exhibits, let's do that.

2           If you would submit a list by the end of the  
3 day, the parties will have until then to -- 5 p.m.  
4 tomorrow to voice any objection.

5           MR. KEELING: Thank you.

6           MS. MESERVE: Madam Hearing Officer, just  
7 because we're likely to be here all day, could we  
8 submit that list in the morning and just push out your  
9 deadline a little bit.

10          CO-HEARING OFFICER DODUC: We will do so.

11          MS. MESERVE: Thank you.

12          MS. MORRIS: Would it be appropriate, for the  
13 portions that were stricken, for them to submit  
14 revised, or will the Board staff be preparing those, so  
15 that when the exhibits of testimony get moved in, the  
16 portions that were struck this morning are red lined?

17          CO-HEARING OFFICER DODUC: Any objection to  
18 that?

19           I believe it was mostly directed to  
20 Mr. Stroshane, and there's one paragraph in  
21 Mr. Nakagawa's testimony.

22           Thank you for accommodating that.

23          MR. KEELING: Well, I . . . To make sure I  
24 understand, is that a request that the --

25          CO-HEARING OFFICER DODUC: Yes.

1 MR. KEELING: -- the Board staff do the red  
2 line?

3 CO-HEARING OFFICER DODUC: No, no. It's a  
4 request that you do the red line.

5 MR. KEELING: And, as I understand it --

6 CO-HEARING OFFICER DODUC: And if you need  
7 more time, noon tomorrow is fine. And then everyone  
8 will have until noon Thursday to make any objections.

9 MR. KEELING: Thank you.

10 MS. MORRIS: For the record, this is the close  
11 of the CSPA, C-WIN, AquAlliance rebuttal testimony.

12 I would move that testimony into evidence. I  
13 don't believe that any of it has been altered in any  
14 way, so I would just like to admit it now.

15 CO-HEARING OFFICER DODUC: All right. Any  
16 objections to CSPA's exhibits?

17 (Pause in proceedings.)

18 CO-HEARING OFFICER DODUC: Excuse me. CSPA,  
19 C-WIN and AquAlliance.

20 MR. MIZELL: As to CSPA, C-WIN and  
21 AquAlliance, I'm currently checking with cocounsel.

22 I was expecting that they would need to submit  
23 them with a revised index and we would have an  
24 opportunity to object at that time.

25 I can have an answer for you within the hour.

1 CO-HEARING OFFICER DODUC: All right.

2 Miss Meserve, are you going to join in with  
3 Mr. Keeling in submitting your exhibits by noon  
4 tomorrow?

5 MS. MESERVE: Yes, if that would be good.  
6 Then I could probably do a better job at being  
7 technically correct.

8 Thank you.

9 CO-HEARING OFFICER DODUC: All right. Thank  
10 you, again, Mr. Stroshane and Mr. Nakagawa.

11 Let's go ahead and take our morning break  
12 while DWR witnesses get set up for direct testimony.

13 We will return at 11 o'clock.

14 (Recess taken at 10:46 a.m.)

15 (Proceedings resumed at 10:59 a.m.:)

16 CO-HEARING OFFICER DODUC: All right. Welcome  
17 back. We -- And welcome back to the four doctors.  
18 Thank you for returning today.

19 Before we get to you . . .

20 Mr. Mizell, your estimate time for direct?

21 MR. MIZELL: Yes. We would estimate 35  
22 minutes for this panel for direct.

23 CO-HEARING OFFICER DODUC: All right. And I  
24 don't see Mr. Bezerra, but --

25 MS. NIKKEL: Working on it.



1 CO-HEARING OFFICER DODUC: Working on it. All  
2 right.

3 Then Mr. Bezerra has requested 15 minutes of  
4 cross-examination for Dr. Hutton only.

5 I have been advised that -- I believe it was  
6 per Miss Morris -- that Mr. O'Laughlin has withdrawn  
7 his request for conducting cross-examination of this  
8 panel, which means that, after Mr. Bezerra will be  
9 Group 21, Mr. Herrick or Mr. Ruiz. They requested 45  
10 minutes for cross-examination of this panel.

11 MR. KEELING: Tom Keeling, San Joaquin County  
12 Protestants.

13 Group 24. We would request 15 minutes for  
14 these.

15 And, as you know, we had a motion and it was  
16 ruled upon and now I'm preparing to cross-examine them.  
17 15 minutes.

18 CO-HEARING OFFICER DODUC: All right.  
19 Miss Meserve.

20 MS. MESERVE: Yes. I did just speak with  
21 Mr. Ruiz and they are going to be writing a note to the  
22 hearing.

23 But I think they are -- they can only go  
24 tomorrow due to other obligations, so they would like  
25 to switch with Clifton Court. I know we're trying to

1 see who can go this afternoon.

2 CO-HEARING OFFICER DODUC: All right.

3 There's -- Well, we'll switch them with Clifton Court,  
4 which means, then, we'll get to -- Let me put it this  
5 way: This is the order I'm going in.

6 And, so, after Mr. Bezerra, then, who, again,  
7 actually -- Okay. Mr. Bezerra. Then Mr. Keeling for  
8 15 minutes.

9 Then going in order, I have Group 25 for 20;  
10 Group 27 for 30 minutes; Group 31 for 60 minutes;  
11 Group 35 for 2 hours; Group 37, Miss Des Jardins  
12 requested 90 minutes.

13 Okay. And, then, after that, then, I guess  
14 would be Mr. Ruiz or Mr. Herrick for 45.

15 So he's switching with -- Is Miss Womack or  
16 Mr. -- or Mr. Emrick going to be here to take the spot  
17 of Group 21 today? I mean, what do you mean by  
18 "switch"?

19 (Pause in proceedings.)

20 CO-HEARING OFFICER DODUC: All right. Forget  
21 it.

22 Let's make things easier for all of us,  
23 because this is cross. We won't switch. We will just  
24 move Central Delta and -- Group 21 to cross-examination  
25 tomorrow.

1           So, then, after Miss Des Jardins is Clifton  
2 Court for 10 minutes and Miss Meserve representing  
3 Group 47 for 20 minutes.

4           That is all the cross I have for this panel.  
5 Is there more?

6           MS. MESERVE: I'm sorry. I may not have write  
7 down what you said fast enough.

8           But I know Mr. Obegi is in -- is . . .

9           CO-HEARING OFFICER DODUC: Two hours, yes.

10          MS. MESERVE: Two hours.

11          And do you think he would be going today?

12 Because, if so, I need to let him know to get --

13          CO-HEARING OFFICER DODUC: I don't believe  
14 we'll bet to him today.

15          MS. MESERVE: So you think he might be  
16 tomorrow.

17          Thank you very much.

18          MR. WALL: Dan Wall for Solano and Contra  
19 Costa. I don't know whether you called our --

20          CO-HEARING OFFICER DODUC: Yes, I have you. I  
21 have you for -- Group 25; are you not?

22          MR. WALL: Yes.

23          CO-HEARING OFFICER DODUC: 20 minutes.

24          MR. WALL: Okay. Perfect. Thank you.

25          CO-HEARING OFFICER DODUC: You will be after

1 Mr. Keeling.

2 MR. WALL: Okay.

3 CO-HEARING OFFICER DODUC: All right. So  
4 going till 11:35 or so, Mr. Bezerra will get us to  
5 about 11:50, :55.

6 Well, let's do this: Let's once again put  
7 Mr. Bezerra between us and the Farmers Market and hope  
8 it works out better this time around.

9 (Laughter.)

10 CO-HEARING OFFICER DODUC: We'll take our  
11 lunch break after Mr. Bezerra. And then, when we  
12 return, we will get to Mr. Keeling.

13 All right. Please begin.

14 MR. MIZELL: Yes. I believe we have three  
15 witnesses who need to be sworn in.

16 CO-HEARING OFFICER DODUC: Ah.

17 MR. MIZELL: That's Dr. Hanson, Dr. Hutton and  
18 Dr. Acuña.

19 CO-HEARING OFFICER DODUC: Please stand and  
20 raise your right hand.

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Shawn Acuña,  
Corey Phillis,  
Charles Hanson  
and  
Paul Hutton,

called as witnesses by the Petitioners,  
having been duly sworn, were examined and  
testified as follows:

CO-HEARING OFFICER DODUC: Thank you.

DIRECT EXAMINATION BY

MR. MIZELL: Dr. Acuña, is DWR-1200 a true and  
correct copy of your Statement of Qualifications?

WITNESS ACUÑA: Yes.

MR. MIZELL: And is DWR-1211-Revised a true  
and correct copy of your Part 2 rebuttal testimony?

WITNESS ACUÑA: Yes.

MR. MIZELL: Dr. Hanson, is DWR 1205 a true  
and correct copy of your Statement of Qualifications?

WITNESS HANSON: Yes, it is.

MR. MIZELL: And is DWR-1223-Revised a true  
and correct copy of your Part 2 rebuttal testimony?

WITNESS HANSON: Yes, it is.

MR. MIZELL: And Dr. Hutton, is DWR-1206 a  
true and correct copy of your Statement of

1 Qualifications?

2 WITNESS HUTTON: Yes.

3 MR. MIZELL: And is DWR-1224-Revised a true  
4 and correct copy of your Part 2 rebuttal testimony?

5 WITNESS HUTTON: Yes.

6 MR. MIZELL: Dr. Phillis also has presented  
7 testimony but he's sworn already in a previous panel.

8 With that, I will turn it over to Dr. Hutton.

9 And from that, the witnesses will exchange amongst  
10 themselves to go through their five-minute direct.

11 WITNESS HUTTON: Good morning, Officers Doduc,  
12 Marcus and D'Adamo.

13 My name is Paul Hutton. I'm providing  
14 rebuttal testimony on behalf of DWR, and this oral  
15 testimony summarizes Exhibit DWR-1224-Revised.

16 Mr. Hunt, please bring up Page 4 of my written  
17 testimony, DWR-1224-Revised.

18 And I'll now provide a brief summary of the  
19 opinions I stated in my written testimony.

20 (Exhibit displayed on screen.)

21 WITNESS HUTTON: My first four opinions  
22 address how and why changes in Delta outflow and  
23 salinity have taken place. These opinions are based on  
24 the most recent nine-decade-full period of record  
25 roughly spanning Water Years 1922 to 2015.

1           Regarding my opinion on annual outflow trends,  
2 the Phase 2 report suggests that modifications to  
3 annual flow have impacted ecosystem function.

4           Now, granted, water use has increased since  
5 the 1920s. However, long-term hydrologic variability  
6 has overwhelmed this effect resulting in no  
7 statistically significant downward trend in annual  
8 outflow.

9           Regarding my opinion on seasonal outflow  
10 trends, the Phase 2 report makes broad claims about  
11 seasonal trends. And contrary to these broad  
12 statements, I believe these trends are much more  
13 nuanced and are best evaluated on a month-by-month  
14 basis.

15           For example, contrary to the Phase 2 report,  
16 there's actually a nominally increasing outflow trend  
17 in the spring, particularly in the months of May and  
18 June, in the latter half of the record.

19           Regarding my opinion on Fall X2 trends, it's  
20 my opinion that:

21           One, a long term upstream shift in Fall X2 has  
22 not occurred;

23           And, two, fall salinity conditions do not  
24 resemble dry years regardless of hydrology.

25           In fact, as shown in my testimony, the

1 long-term September X2 trend is downstream and,  
2 therefore -- and there's no trend upstream or  
3 downstream in the month of October.

4           If there has been a loss of Fall X2  
5 interannual variability, it's not because all fall  
6 months now resemble dry-year conditions. Rather, as  
7 shown in my testimony, Project operations have  
8 bolstered dry-year outflows such that Fall X2 now  
9 resembles average- to wetter-year conditions.

10           A rigorous peer-reviewed analytical approach,  
11 described shown in my testimony, show that Project  
12 operations compensate for non-Project effects that  
13 would increase Fall X2 absent the projects in the  
14 months of September and October.

15           My second four opinions address issues related  
16 to pre-development or natural conditions.

17           It is my opinion that Delta conditions in the  
18 late 19th and early 20th Century do not represent  
19 pre-development or natural Delta outflow and salinity  
20 conditions.

21           This late 19th and early 20th Century was  
22 likely fresher than contemporary conditions. However,  
23 I don't believe these conditions should be considered  
24 natural.

25           It's my opinion that, during this period, it



1 was particularly fresh for two reasons:

2           First, there were landscape alterations that  
3 resulted in lower systemwide evapotranspiration, such  
4 as removal of riparian vegetation, reclamation of  
5 wetlands, and the construction of levees.

6           The second reason I believe that this period  
7 was particularly fresh was that, as shown in my  
8 testimony, the climatic conditions were wetter during  
9 that period.

10           It is my opinion that unimpaired flow is not  
11 an appropriate measure of natural flow on the valley  
12 floor or in the Delta.

13           The Phase 2 report acknowledges that  
14 unimpaired flow is not the same as natural flow, but it  
15 states that it is reflective of the magnitude of  
16 natural flow.

17           I disagree with that statement. As shown in  
18 my testimony, annual average unimpaired flow is  
19 43 percent higher than natural outflow.

20           I will now close with some concluding  
21 thoughts:

22           One, the focus on ecological restoration  
23 frames the challenges of managing today's Delta  
24 squarely in terms of comparisons to historical  
25 conditions;

1           Two, biological inferences based on a  
2 truncated dataset or a subset of the historical record  
3 are not representative of trends associated with the  
4 full hydrologic record;

5           Three, even the full hydrologic record is not  
6 indicative of natural or pre-development conditions as  
7 well documented alterations had already occurred by the  
8 early 20th Century.

9           And, last, new and relevant scientific  
10 baseline information is available and should be  
11 considered as part of this proceeding.

12           This concludes my testimony.

13           WITNESS HANSON: Mr. Hunt, could I have you  
14 bring up DWR-1386, which is my PowerPoint summarizing  
15 my testimony, which is DWR-1223-Revised.

16           (Exhibit displayed on screen.)

17           WITNESS HANSON: On existing conditions  
18 affecting Juvenile Chinook Salmon survival in the Delta  
19 and Sacramento River.

20           Next slide, please.

21           (Exhibit displayed on screen.)

22           WITNESS HANSON: My name's Charles Hanson.  
23 I'm a Senior Fishery Biologist with Hanson  
24 Environmental, located in Walnut Creek.

25           And the objectives of my summary this morning

1 are to respond to the request for background  
2 information on current conditions affecting Salmonid  
3 migration and survival within the Delta and the lower  
4 Sacramento River, flow survival relationships related  
5 to Juvenile Salmonids, the State Board 2010 Flow  
6 Report, and the Phase 2 Technical Basis Report, noting  
7 that, since about 2008, we've had expanding involvement  
8 in testing survival and migration of Juvenile Salmon in  
9 the Delta using acoustic tanks.

10           So there's a whole body of information that's  
11 now available that wasn't necessarily available for use  
12 when the 2010 Report was originally constructed. And I  
13 think there's benefit in including that as part of the  
14 decision-making process.

15           The other is that there's been an emerging  
16 science in the Delta that shifting away from the  
17 paradigm of the use of flow alone to restore Salmonid  
18 survival, and a recognition that there are a wide  
19 variety of other factors that interact with hydrology  
20 in different ways within and among years that affect  
21 Salmonid survival as they pass through the river and  
22 Delta.

23           And these factors contribute to the  
24 variability and the uncertainty inherent in many of the  
25 relationships -- I'll show some examples of that -- but

1 they do provide an important context for developing  
2 management alternatives.

3 Next slide, please.

4 (Exhibit displayed on screen.)

5 WITNESS HANSON: This is a timeline that was  
6 put together by the San Francisco Estuary Institute  
7 just showing some of the major changes that have  
8 occurred in the Delta over the past 250 years.

9 These changes affect the quality and  
10 availability of habitat for Juvenile Salmonids as  
11 they're migrating downstream from the natal rivers to  
12 the Pacific Ocean.

13 Some of those changes include wetland  
14 reclamation, channelization and levee construction,  
15 agricultural and urban development, the development of  
16 upsteam -- upstream storage reservoirs and their  
17 operations, water diversions within the system, and  
18 colonization by non-native species.

19 Next slide, please.

20 (Exhibit displayed on screen.)

21 WITNESS HANSON: These are examples of some of  
22 the factors affecting Salmon abundance in addition to  
23 river flows.

24 They include things like: Ocean conditions;  
25 water project operations, which primarily focus on

1 upstream storage and impoundments; water diversions --  
2 it's estimated that there are over 3,000 water  
3 diversions in the Bay-Delta Estuary and the rivers --  
4 habitat loss largely from channelization; contaminant  
5 loading; loss of historic floodplains and tidal marsh;  
6 the access based on changes in hydrologic conditions;  
7 the colonization of much of the system by invasive  
8 species, including predation by species like Striped  
9 Bass and Largemouth Bass; climate change; and reduced  
10 food production.

11           These are just examples of some of the many  
12 factors that influence abundance and survival.

13           Next slide, please.

14           (Exhibit displayed on screen.)

15           WITNESS HANSON: As part of the testimony, I  
16 wanted to explore some of the various elements of how  
17 State and Federal Water Project operations may affect  
18 Salmonids as they're migrating through the system.

19           And to do that, what I selected was a database  
20 that had been developed from studies by the U.S. Fish  
21 and Wildlife Service.

22           They included over 100 survival studies where  
23 Juvenile Salmon were marked with coded wire tags and  
24 released into the Upper Sacramento primarily above  
25 Red Bluff. And then they were recaptured in trawls at

1 Chipps Island or at the SWP and CVP salvage facilities.

2           They represent over 14 million Juvenile Salmon  
3 in this 20-year period of study.

4           What I've plotted here first is the percentage  
5 of each of those release groups that was subsequently  
6 recaptured in the SWP and CVP salvage facilities,  
7 plotted against the average exports for 30 days prior  
8 to the last recapture.

9           And the conceptual model would say that we  
10 should have very low salvage when exports are low, and  
11 a substantial increase in salvage as exports increase.

12           And what you can see from the plot is, we have  
13 a very slight pos -- slight positive trend. It's  
14 characterized by high variability. And, importantly,  
15 the highest salvage in this whole dataset was  
16 0.5 percent, so, very low proportion of these fish are  
17 slowing up in the salvage.

18           And that's consistent with the results from  
19 the National Marine Fisheries Service winter-run  
20 studies that show that, typically, direct losses are  
21 less than 1 percent.

22           Next slide, please.

23           (Exhibit displayed on screen.)

24           WITNESS HANSON: This is a similar plot. This  
25 is survival to Chipps Island plotted against the 30-day

1 average flow.

2           And the conceptual model would say we should  
3 have very high survival when the exports are low, and a  
4 substantial decline in survival as the exports  
5 increase.

6           We do see a slight negative trend, but, again,  
7 it's characterized by extremely high variability as  
8 reflected by the low R-square of only 0.01.

9           Next slide, please.

10           (Exhibit displayed on screen.)

11           WITNESS HANSON: Based on these kinds of  
12 examples, in addition to the literature, I concluded  
13 that SWP and CVP exports contributed only a small  
14 incremental amount to explaining the total Juvenile  
15 Salmon survival as they're migrating through the  
16 Sacramento River and Delta.

17           Next slide, please.

18           (Exhibit displayed on screen.)

19           WITNESS HANSON: This is a similar plot. In  
20 this case, it's survival to Chipps Island.

21           These were Juvenile Salmon that were released  
22 at Sacramento. I used a 14-day period for Sacramento  
23 River flow at Freeport.

24           And the conceptual model would say we should  
25 have an increasing trend in survival as flows go up.

1           And we do see a positive trend. But the slope  
2 is relatively flat and the variance as reflected by the  
3 low R-squares extremely high.

4           Next slide.

5           (Exhibit displayed on screen.)

6           WITNESS HANSON: So based on these kinds of  
7 analyses, I concluded that the relationship between  
8 Sacramento River flow rates and Juvenile Salmonid  
9 survival is positive but weak with high uncertainty.

10           Multiple authors have concluded that flow  
11 alone can't be used to restore Salmonid survival within  
12 the Delta.

13           Next slide, please.

14           (Exhibit displayed on screen.)

15           WITNESS HANSON: There is high statistical  
16 uncertainty and variability in population-level  
17 response to Salmonids to changes in factors, such as  
18 SWP and CVP exports.

19           And life cycle models are now being developed  
20 to use this body of information, along with advanced  
21 methods for analysis, that are starting to be able to  
22 really use the information from the acoustic tank  
23 studies to address the uncertainties in these complex  
24 relationships and, importantly, to start examining the  
25 underlying mechanisms that are influencing these



1 relationships.

2 And with that, I'll turn it over to Shawn.

3 WITNESS ACUÑA: Good morning, and thank you  
4 for having me.

5 My name is Dr. Shawn Acuña, and I'm here to  
6 offer testimony for the Department of Water Resources.

7 If -- Mr. Hunt, if you can bring up a few  
8 exhibits besides DWR-1211. I have a couple others that  
9 I'd like to add as well.

10 So, along with my testimony 1211, can you  
11 please bring up DWR Exhibit 1358, 1273 and 1240.

12 Thank you.

13 I'll be referring to those exhibits during my  
14 testimony.

15 I studied a variety of research topics, and my  
16 area of influence is on ecotoxicology. I got my degree  
17 at U.C. Davis, and I've had over 15 years of work in  
18 the Delta as well as aquatic research throughout the  
19 state.

20 (Exhibit displayed on screen.)

21 WITNESS ACUÑA: I'm here to offer testimony in  
22 subjects such as effects of the Water Projects, and a  
23 variety of new research that has come up from -- since  
24 the 2010 Flow Criteria Report, as well as the 2008  
25 Biological Opinion.

1           First, I need to make a correction to at least  
2 one of the statements. It doesn't really change my  
3 testimony. It just needs to be clarified as there's an  
4 error in some of the wording.

5           If we can please go to Exhibit DWR-1211,  
6 Page 11.

7           (Exhibit displayed on screen.)

8           WITNESS ACUÑA: At the bottom, Line 24 through  
9 26.

10          (Exhibit displayed on screen.)

11          WITNESS ACUÑA: So, it starts with "For  
12 CSAMP/CAMT" on that line.

13          So, how it should be read, because it's  
14 missing two words -- Unfortunately I didn't catch that  
15 initially.

16          (Reading):

17                 "For CSAMP and CAMT, Dr. Latour  
18 conducted a study on catchability and  
19 determined that the Fall Midwater Trawl  
20 catch data was affected by the time of  
21 day and depth, and the Spring Kodiak  
22 Trawl . . . catch data was affected by  
23 tide."

24          So those -- Those needed to be added into  
25 the -- The word "and" and the word "tide" need to be

1 added in, so . . .

2 Okay. I'll proceed to go through my opinions.

3 If you can please go back to Page 3.

4 (Exhibit displayed on screen.)

5 WITNESS ACUÑA: And scroll down a bit.

6 (Scrolling through document.)

7 WITNESS ACUÑA: Thank you.

8 I'll be offering a summary of six opinions.

9 These are them on the screen right now, and I'll go  
10 over them one at -- one at a time.

11 So (reading):

12 "Opinion 1: The effects of the  
13 current" water project "operations on  
14 Delta Smelt are uncertain, and should be  
15 managed accordingly."

16 We've learned a lot since the 2008 Biological  
17 Opinion, as well as the Flow Criteria Report and the  
18 Phase 2 Technical Basis Report.

19 A lot of information has updated and evolved  
20 our understanding of Delta Smelts as well as the  
21 conceptual model, the life history of Delta Smelt, it's  
22 ecology, biology and behavior.

23 This information is very important to consider  
24 and to understand and incorporate within your  
25 decision-making process as this information gives us a

1 great deal more understanding of how Delta Smelt reacts  
2 to its environment and may react to a management  
3 decision.

4 I'd like to go to Opinion 2:

5 "Current Delta Smelt proportional  
6 entrainment in the State Water  
7 Project/Central Valley Project South  
8 Delta pumping facilities is low."

9 If you can please bring up Exhibit DWR-1358,  
10 Page 55.

11 (Exhibit displayed on screen.)

12 WITNESS ACUÑA: Thank you.

13 Here, we have preliminary results of a  
14 proportional entrainment study conducted by CAMT --  
15 conducted for CAMT.

16 In this, they evaluated and calculated the  
17 proportional entrainment. So, in this case, it would  
18 be the amount of salvage at the Water Projects in  
19 comparison to the abundance of that time period.

20 So, here, we have -- In the center of the  
21 slide is the years 2002 down to 2016. And  
22 corresponding on the right are the proportional  
23 entrainment values. We put those in percentages.

24 For example, 2002 would equate to 26.8 percent  
25 of the population and, in 2016, it would equate to

1 1.6 percent of the population.

2           As you can see, the proportional entrainment  
3 has been quite low, especially recently, as you go from  
4 2002 to 2016, especially around the time of the  
5 Biological Opinion.

6           On top of that, not only has the entrainment  
7 been low in recent history, but life cycle models and  
8 sacre coupe models used to evaluate the effects of  
9 entrainment and salvage on the population have found no  
10 support for entrainment -- or salvage in this case --  
11 having a significant effect on population.

12           This basically means that salvage has not been  
13 found to be an impediment to the success of the  
14 population.

15           In addition, knowing this information, we have  
16 new information on preemptive actions, and that can  
17 be -- has been developed based on our greater  
18 understanding of how Delta Smelt behaves and responds  
19 to the environment. And these preemptive actions  
20 further lower -- lower the probability of entrainment,  
21 as well as models that are being used to help inform  
22 that information.

23           So, proportional entrainment has been low in  
24 recent -- recent years. It has been shown to have a  
25 significant population effect. And preemptive actions

1 and further tools are being used to even more reduce  
2 that proportional entrainment.

3 Can you please go back to Exhibit 1211,  
4 Page 3, back to the list of opinions.

5 (Exhibit displayed on screen.)

6 WITNESS ACUÑA: Thank you.

7 (Reading):

8 "Opinion 3: The extent that Delta  
9 Smelt abundance is influenced by flow is  
10 uncertain."

11 There's been a lot of analyses on seasonal  
12 flow effects and abundance. This relationship has been  
13 characterized for winter/spring, summer and fall.

14 I'd like to note that, currently, the  
15 winter/spring flow abundance, it doesn't seem to be a  
16 significant relationship between Delta Smelt and  
17 winter/spring flow.

18 When it comes to the summer and fall flows,  
19 the analysis designed for those relationships have  
20 methodology issues. So further analysis has found that  
21 it might be -- the results from that might be uncertain  
22 and risky as that information needs to be better  
23 characterized and the methods need to be corrected for.

24 For example, Feyrer, et al. (2007) -- which  
25 was the paper for the basis of the Fall X2 RPA -- it

1 was found that the methods that were used there  
2 resulted in a model that produced biologically  
3 impossible results. Such a thing means that that  
4 relationship should not be relied on unless corrected  
5 for.

6 Be that as it may, a -- an analysis conducted  
7 by my colleague to my left, Dr. Phillis, using the  
8 Feyrer, et al., model as a basis for that analysis, was  
9 able to use that to determine how well it predicted  
10 survival and found that it was also unreliable as it  
11 both predicted increases and decreases in survival.

12 So, the -- So, basically, the amount to which  
13 that flow has a relationship with Delta Smelt is  
14 uncertain.

15 Please go to Opinion -- Sorry. I'm going to  
16 go straight to Opinion 4.

17 For (reading):

18 "Opinion 4: Multiple factors affect  
19 Delta Smelt distribution."

20 I'm going to go over two main points here.

21 Basically there's the life history. We've  
22 learned a lot more about the life history of Delta  
23 Smelt, as well as on the second point, how that -- the  
24 species responds to its environment.

25 So, on the first point. The migratory life

1 history was described in the Biological Opinion 2008,  
2 and it suggested that Delta Smelt reared in the  
3 freshwater zone moved to the brackish water as  
4 juveniles matured and then returned to the freshwater  
5 to spawn and then die.

6           New information has found that that's not  
7 entirely correct. As resident populations have been  
8 detected -- and they are a significant portion of that  
9 population -- where resident fish that spend their  
10 entire life history in either the brackish water or the  
11 freshwater live and die there, they -- they are a  
12 different -- an alternative life history and are a  
13 significant portion.

14           On top of that, when it comes to spawning,  
15 Delta Smelt don't necessarily die as both spawners are  
16 routinely caught in the Spring Kodiak Trawl and they  
17 are also maturing.

18           So this is actually some really exciting  
19 information about Delta Smelt. They are a lot more  
20 complex and potentially more resilient than we give  
21 them credit for, with a variety of life histories, as  
22 well as a protracted spawning period that allows for  
23 repeat spawning, if possible.

24           On the second note, dealing with how Delta  
25 Smelt responds to its environment.



1           Advanced particle tracking models using  
2 behavior was used to assess some of the proposed  
3 behaviors that Delta Smelt have, such as in the  
4 Biological Opinion. And they suggested that Delta  
5 Smelt are trying to get away from high salinities, are  
6 seeking high turbidity to hide from predators and maybe  
7 feed better, and they're using their -- the tide to  
8 help them move.

9           With the evaluation from the particle tracking  
10 model, we found that these individual behaviors did not  
11 result in biologically possible results. The  
12 distribution did not match any of those relationships  
13 with those kind of behaviors.

14           What -- What they were able to find, that if  
15 you were to combine those three as well as  
16 characterizing them a little differently and adding  
17 more complex behaviors to the model, it better matched  
18 the distribution.

19           So, all in all, with the variety of life  
20 histories and the complex nature of its behavior and  
21 response to different physical factors, Delta Smelt is  
22 a lot more complex and has a greater number of factors  
23 that may affect its distribution.

24           And that should be really considered in making  
25 management decisions and -- and any other type of

1 regulation as these fish have a variety of ways of  
2 responding.

3 I'm going to go to Opinion 5 (reading):

4 "The extent that Delta Smelt feeding  
5 success is influenced by flow is  
6 uncertain."

7 Now, there has been a lot since the 2008  
8 Biological Opinion and the 2010 Flow Criteria Report on  
9 fish as well as their food. Food's very important for  
10 fish. They will not be able to survive, grow or thrive  
11 without food.

12 So actions have been developed in order to  
13 provide -- promote that as well. And some of the  
14 actions that have been proposed are designed to help  
15 with that.

16 But our understanding is becoming more nuanced  
17 and more complex in those relationships. Feeding and  
18 prey densities have a lot more information, a lot more  
19 complex relationships than we had previously realized.  
20 And we have a lot of really exciting work coming out of  
21 Tiburon as well as U.C. Davis in this regard.

22 For example, if you can bring up -- Please  
23 bring up Exhibit DWR-1273, Page 11.

24 (Exhibit displayed on screen.)

25 WITNESS ACUÑA: Thank you.

1           That's good right there.

2           That graph on the upper left-hand corner is  
3 what I want to focus on, graph Figure 6B.

4           Now, I'm talking about flow here so I'll just  
5 concentrate on that figure right now.

6           One of the mechanisms that has been attributed  
7 to flow has been increased productivity of food for  
8 Delta Smelt.

9           This was evaluated by Kimmerer and his  
10 coauthors in 2018. Here, he looked at flow effects on  
11 that productivity.

12           So, if you were to look at this -- If you look  
13 at this figure, Figure 6, Figure 6B --

14           (Scrolling through document.)

15           WITNESS ACUÑA: Oops. Sorry. It's up.

16           Yeah, sorry. The figure -- The description's  
17 actually under the figure, so . . .

18           So, in this case, what we have here on the  
19 horizontal axis, you have increasing flows, and then  
20 on the vertical axis, you have increasing productivity.  
21 So, the more productivity, the more prey you have for  
22 fish.

23           And if the mechanism were that flow, as it  
24 increases, you would increase the amount of  
25 productivity.

1 Food, you see a positive relationship. But as  
2 you see here, no relationship like that exists. From  
3 their -- From their study, they found that that  
4 relationship didn't hold up.

5 So there's a lot more we need to know about  
6 Delta Smelt, a lot more we need to know about -- about  
7 their food. And that information is actually coming  
8 out and has been coming out since the 2010 Flow  
9 Criteria Report.

10 We have a lot of new information, a lot of  
11 exciting things, such as the box model that's coming  
12 out from -- that came out from the group out at  
13 Tiburon, as well as other evaluations on fish and food.

14 One thing I'd like to note is that increasing  
15 flows to increase food also has other factors to keep  
16 in mind: Contaminants are an issue. Competitors are  
17 an issue.

18 When it comes to contaminants, for example, we  
19 know that under high-flow conditions, such as a storm  
20 water event, you actually have increased loading  
21 contaminants.

22 Why is that an issue? Well, contaminants have  
23 been shown in studies actually in the Delta that you  
24 have decreased survival of potential food items as well  
25 as other effects potentially on feeding success as

1 well.

2           So it's important to note that it's not as  
3 simple as you're just getting water. You have a lot of  
4 other things that's part of that.

5           Can you please go back to Exhibit 1211.

6           (Exhibit displayed on screen.)

7           WITNESS ACUÑA: Thank you.

8           (Reading):

9                       "Survey bias should be considered  
10 when making management decisions."

11           Survey bias is a practicality of surveys.

12 It's a known quantity -- I mean, it's a known issue.

13 How to quantify that has been developed in studies for  
14 years.

15           What's important to know about surveys is that  
16 you need to incorporate that understanding of bias into  
17 your information.

18           I think it was better said by Mahardja, et al.  
19 (2017).

20           Can you please bring up Exhibit -- Mr. Hunt,  
21 can you please bring up Exhibit DWR-1240, Page 2.

22           (Exhibit displayed on screen.)

23           WITNESS ACUÑA: And if you can focus on the  
24 third paragraph.

25           (Exhibit displayed on screen.)

1 WITNESS ACUÑA: Yes, that one. Yeah.

2 So, right there on the left, yeah.

3 So, in this paragraph, what they're saying is  
4 that, by not incorporating survey bias, you may have  
5 spurious conclusions.

6 What they're trying to say is that by not  
7 understanding that bias may affect your understanding  
8 of what the data is saying, you may come to the wrong  
9 conclusions.

10 It's like doing a survey of a nocturnal  
11 species -- like, let's say, a wildcat, leopard or  
12 something like that -- and you're doing your survey  
13 during the day. You understand that your bias is that  
14 you're trying to study a nocturnal animal during the  
15 day.

16 If you can incorporate that into your  
17 understanding of the data you receive in a proper way,  
18 that can help you still make informed decisions.

19 And that is what I'm just pointing out here,  
20 is that understanding and quantifying survey bias can  
21 help you make informed decisions. And this is already  
22 being done by Mahardja, et al., here in this paper, and  
23 more analysis that has been done, as well as from  
24 Latour and a few other studies.

25 I'd like to summarize by saying that we've

1 learned quite a bit about Delta Smelt: Biology, its  
2 ecology and behavior.

3 This information is important and critical to  
4 understanding the species and how to respond to bad  
5 decisions and other regulations that may be imposed.

6 This information can help better understand  
7 and give you greater certainty of whether certain  
8 actions would have the desired result.

9 Thank you.

10 MR. MIZELL: That concludes our summary of the  
11 direct, and these witnesses are now available for  
12 cross-examination.

13 CO-HEARING OFFICER DODUC: Thank you.

14 And I see Mr. Bezerra has found his way here.

15 You are the first to conduct cross of this  
16 panel, Mr. Bezerra, so please come on up.

17 And let's see if we can plan out the rest of  
18 today.

19 I have Mr. Keeling, who's here. Then . . .  
20 Group 25.

21 And do we know if Mr. Emrick will be here for  
22 Group 27?

23 MS. MESERVE: Yes. Mr. Emrick will not be  
24 doing cross-exam of this panel.

25 CO-HEARING OFFICER DODUC: Oh, not. All

1 right.

2 MS. MESERVE: He's -- He's not available, so  
3 he's not going to be able to be here.

4 CO-HEARING OFFICER DODUC: All right. And  
5 then Mr. Jackson is here.

6 Miss Des Jardins, you are here. Might you be  
7 able to conduct your cross-examination today?

8 MS. DES JARDINS: Yes.

9 CO-HEARING OFFICER DODUC: Perfect.

10 MS. DES JARDINS: NRDC will be coming.

11 MS. MESERVE: Yeah, they're coming. They're  
12 tomorrow.

13 MS. DES JARDINS: Oh, they're tomorrow?

14 CO-HEARING OFFICER DODUC: If you are able to  
15 do it today, we'll move you today, and NRDC can give  
16 theirs tomorrow.

17 MS. DES JARDINS: I would prefer to do my  
18 cross-examination in order.

19 CO-HEARING OFFICER DODUC: And, in that case,  
20 NRDC will have to come today.

21 I have three to four hours this afternoon with  
22 no takers. That is a problem. I'm willing to  
23 accommodate parties who are not available today but not  
24 to the extent where we have three hours of wasted time.

25 Over lunch, I suggest you guys figure it out.



1           With that, Mr. Bezerra, I'm giving you a  
2 second chance. You are once again between us and the  
3 Farmers Market.

4                                 (Laughter.)

5           CO-HEARING OFFICER DODUC: Last time, it did  
6 not go so well can.

7           MR. BEZERRA: Yes.

8           CO-HEARING OFFICER DODUC: This time, I wish  
9 you much luck.

10          MR. BEZERRA: I -- With that, I will charge  
11 forward.

12          Thank you very much.

13          So, my name's Ryan Bezerra. I'm the attorney  
14 for Cities of Folsom and Roseville, Sacramento Suburban  
15 Water District and San Juan Water District.

16          My questions are strictly for Dr. Hutton.

17          If we could please pull up Dr. Hutton's  
18 revised testimony, DWR-12 -- 1224-Revised, I believe.

19                                 (Exhibit displayed on screen.)

20          MR. BEZERRA: And Page 27, Lines 22 through  
21 26.

22                                 (Exhibit displayed on screen.)

23                                 CROSS-EXAMINATION BY

24          MR. BEZERRA: And, Dr. Hutton, on these lines,  
25 you're discussing the comparison between natural Delta

1 flows and unimpaired flows; correct?

2 WITNESS HUTTON: Yes.

3 MR. BEZERRA: Yes. And then, preliminarily,  
4 in this Section 4 of your testimony, you're relying in  
5 some part on peer-reviewed papers you've published in  
6 scientific journals; correct?

7 WITNESS HUTTON: I'm just going to take a  
8 second to read 22 through 26.

9 MR. BEZERRA: Sure. Absolutely.

10 (Pause in proceedings.)

11 WITNESS HUTTON: The statement in 22 through  
12 26 is based on the DWR -- Exhibit DWR-1384.

13 MR. BEZERRA: Okay. And how do you calculate  
14 natural flows into and through the Delta, given all the  
15 physical changes to our watershed?

16 WITNESS HUTTON: The DWR work, which is --  
17 which is referred to here, is based on several  
18 elements:

19 The land use or the vegetation that was  
20 thought to exist under natural conditions. That is  
21 based on the work of Fox, et al., which is included as  
22 an exhibit in my testimony. That is Exhibit DWR-1290.

23 The modeling also relies on estimations of  
24 evapotranspiration of that vegetation, and that is  
25 based on another exhibit in my testimony. That is the

1 Howes, et al., which is Exhibit DWR-1291.

2           And -- Yeah. And then DWR took that  
3 information and used it in -- in a -- in a modeling  
4 exercise using the C2VSim model to -- and running it  
5 through a hydrology, a 1922 to, I believe, 2015  
6 hydrology.

7           So, assuming the vegetation that was thought  
8 to take -- have been in place under natural conditions  
9 and natural levee conditions, and -- and that was run  
10 on a -- run through a -- the full time series to come  
11 up with an estimate of natural flow conditions.

12           MR. BEZERRA: Thank you.

13           I think you answered about my next five  
14 questions, so thank you.

15           There on Page 27 on Line 26 -- or, actually,  
16 it begins on Line 24. But you make the statement  
17 (reading):

18           ". . . That Under average conditions, the  
19 annual unimpaired flow is 43 percent  
20 higher than the natural flow . . ."

21           What is that an average of?

22                           (Pause in proceedings.)

23           WITNESS HUTTON: Bear with me while I find --

24           MR. BEZERRA: Sure.

25           WITNESS HUTTON: -- the chart in my testimony.

1           That is on Page -- It's Figure 19, which is  
2 Page 33 of my testimony.

3           MR. BEZERRA: Could we please go to that page.

4           (Exhibit displayed on screen.)

5           MR. BEZERRA: Thank you very much.

6           Dr. Hutton, is this the figure you're  
7 referencing?

8           WITNESS HUTTON: Yes, it is.

9           MR. BEZERRA: Okay. And, so, the average  
10 numbers here -- Just -- Just for comparison and to  
11 clarify what we're doing, the -- the average number of  
12 28.1 unimpaired flow, that's millions of acre-feet, on  
13 average, Delta outflow under unimpaired conditions;  
14 correct?

15          WITNESS HUTTON: Correct.

16          MR. BEZERRA: And the natural conditions which  
17 you just described, that average outflow is  
18 19.7 million acre-feet; correct?

19          WITNESS HUTTON: Correct.

20          MR. BEZERRA: So the difference, on average,  
21 between unimpaired and natural outflow is roughly eight  
22 and a half million acre-feet. Is that accurate?

23          WITNESS HUTTON: Yes.

24          MR. BEZERRA: Okay. And, then, that -- that  
25 average is averaged of all of the years of your period

1 of record calculated in total Delta outflows; is that  
2 correct?

3 WITNESS HUTTON: Yes, from Water Years '22  
4 through 2014.

5 MR. BEZERRA: Okay. And so the 43 percent  
6 difference you're describing is for the average bars.  
7 That's the difference between a blue bar and a black  
8 bar. That's the 43 percent?

9 WITNESS HUTTON: Yes.

10 MR. BEZERRA: Okay. Now, moving to the  
11 critical year bars in this chart, Figure 19, these  
12 results indicate that unimpaired outflows would be  
13 about 13.1 million acre-feet on average in critical  
14 years; correct?

15 WITNESS HUTTON: Yes.

16 MR. BEZERRA: Okay. And then the critical  
17 year natural flow, as calculated by DWR, would be  
18 7.4 million acre-feet; correct?

19 WITNESS HUTTON: Yes.

20 MR. BEZERRA: Okay. And so that's a  
21 difference of, roughly, 5.7 million acre-feet on  
22 average in critical years; correct?

23 WITNESS HUTTON: Yes.

24 MR. BEZERRA: And by my calculation, that's  
25 about a 77 percent increase of unimpaired outflows in

1 critical years versus natural outflows.

2 Does that seem about right to you?

3 WITNESS HUTTON: I don't have my calculator in  
4 front of me.

5 MR. BEZERRA: Okay. Understood.

6 Now -- But looking at each of these  
7 year-types, so setting aside the average.

8 For each of these year-types, these results  
9 are the average of the results for each water year in  
10 that year-type in the modeling period; correct?

11 WITNESS HUTTON: Within the modeling period,  
12 it is -- these numbers are the average of all the years  
13 associated with each of those year-types.

14 MR. BEZERRA: Okay. So, in some critical  
15 years in your period of record, the difference between  
16 natural and unimpaired flows exceeds 5.7 million  
17 acre-feet; correct?

18 Because you have to average -- You're  
19 averaging all of the critical years; correct?

20 WITNESS HUTTON: I'm sorry. Could you --

21 MR. BEZERRA: Sure.

22 Let -- Let's say there's 10 critical years  
23 within your period of record.

24 WITNESS HUTTON: (Nodding head.)

25 MR. BEZERRA: The numbers in Figure 19 are an

1 average of the results of those 10 critical years;  
2 correct?

3 WITNESS HUTTON: Yes.

4 MR. BEZERRA: And so some of those critical  
5 years, the difference between unimpaired and natural is  
6 even greater than what's displayed in the bars here;  
7 correct?

8 WITNESS HUTTON: Yes. This is an average.

9 MR. BEZERRA: Do you know what the range of  
10 results is for the critical years in your analysis?

11 WITNESS HUTTON: Not off the top of my head,  
12 no --

13 MR. BEZERRA: Okay.

14 WITNESS HUTTON: -- I do not.

15 MR. BEZERRA: Okay. Thank you.

16 So, if we could go down to Page 34 in  
17 Exhibit 1224-Revised --

18 (Exhibit displayed on screen.)

19 MR. BEZERRA: -- and Lines 7 through 12.

20 Now, Dr. Hutton, do you see these lines? You  
21 describe here how, under natural conditions, high flow  
22 would spill out onto the landscape and those sorts of  
23 things; correct?

24 (Pause in proceedings.)

25 WITNESS HUTTON: Yes. I see Lines 7 through

1 12.

2 MR. BEZERRA: Now, would these sorts of  
3 natural conditions result potentially in a change in  
4 the seasonality of flow relative to unimpaired  
5 conditions?

6 (Pause in proceedings.)

7 WITNESS HUTTON: The seasonality of flows are  
8 represented in the -- in the modeling based on factors  
9 such as the spilling onto the landscape.

10 MR. BEZERRA: And, so, unimpaired flows might  
11 result in a pattern of higher flows at some times than  
12 natural conditions might; correct?

13 WITNESS HUTTON: Yes, and which is shown in --  
14 in my Figure 19 where the unimpaired flows on average  
15 are -- on average are always higher.

16 MR. BEZERRA: Okay. Could we please go to  
17 Exhibit DWR-1384.

18 (Exhibit displayed on screen.)

19 MR. BEZERRA: And, Dr. Hutton, this is the DWR  
20 analysis you were referencing earlier; correct?

21 WITNESS HUTTON: Yes.

22 MR. BEZERRA: Okay. Could we please go to  
23 .pdf Page 82 --

24 (Exhibit displayed on screen.)

25 MR. BEZERRA: -- which is document Page 5-4.



1           Okay.  There we go.

2           And I'd like -- Dr. Hutton, I have a few  
3 questions for you regarding Table 5-2 and 5-3 on this  
4 page.

5           So let's start with 5-2.  This is a comparison  
6 under DWR's analysis of natural and unimpaired Delta  
7 inflows by month; correct?

8                         (Pause in proceedings.)

9           WITNESS HUTTON:  Yes, a comparison of  
10 averages.

11          MR. BEZERRA:  Right.

12          So within each month, the results are an  
13 average of results for that month within the period of  
14 record; correct?

15          WITNESS HUTTON:  Yes.

16          MR. BEZERRA:  Okay.  So, looking at the  
17 results for May here, the total difference at the  
18 bottom there, what -- what does that indicate for May?

19          WITNESS HUTTON:  That -- For the month of May,  
20 this is -- this table is showing that the natural  
21 flows -- the total natural inflows to the Delta are  
22 about 2.8 million acre-feet compared to the unimpaired  
23 flow of 4.2 million acre-feet, meaning -- and showing  
24 that, according to this modeling, the natural flow was  
25 lower by 1.3, 1.4 million acre-feet.

1 MR. BEZERRA: And that's 1.4, roughly, million  
2 acre-feet lower under natural conditions in May just in  
3 that one month; correct?

4 (Pause in proceedings.)

5 WITNESS HUTTON: On average, yes.

6 MR. BEZERRA: On average.

7 And so -- So, similar results in April that  
8 natural flows would be on average 900,000 acre-feet  
9 lower in that one month of May relative to unimpaired  
10 flows; correct?

11 WITNESS HUTTON: Yes.

12 MR. BEZERRA: Okay. And then, if we can go  
13 down to November on that line.

14 The total difference there indicates that  
15 natural flows for the month of November were about  
16 188,000 acre-feet lower on average than unimpaired  
17 flows; correct?

18 WITNESS HUTTON: Yes.

19 MR. BEZERRA: So you have quite a range in  
20 differences by monthly results between natural flows  
21 and unimpaired flows; correct?

22 WITNESS HUTTON: Yes, as shown in this table.

23 MR. BEZERRA: Yeah. There -- And just to  
24 confirm my understanding:

25 The range is between 188,000 acre-feet

1 difference in November versus 1.374 million acre-feet  
2 difference in May; correct?

3 WITNESS HUTTON: That is correct.

4 MR. BEZERRA: Okay. Now, if we could please  
5 go back to Exhibit DWR-1224-Revised.

6 (Exhibit displayed on screen.)

7 MR. BEZERRA: And, actually, I apologize. We  
8 didn't need to do that. If we could stay on 1384.

9 (Exhibit displayed on screen.)

10 MR. BEZERRA: I'm trying, Chair Doduc, to get  
11 us out by lunch.

12 And then if we could scroll down lower on this  
13 page to Table 5-3.

14 (Scrolling through document.)

15 MR. BEZERRA: This table, Dr. Hutton, is a  
16 similar table to 5-2 but it's depicting differences in  
17 Delta outflows rather than inflows; correct?

18 (Pause in proceedings.)

19 WITNESS HUTTON: Yes.

20 MR. BEZERRA: And so, for -- In this case, in  
21 May, Delta outflows -- unimpaired Delta outflows is  
22 roughly 900,000 acre-feet -- I'm sorry -- roughly  
23 1.6 million acre-feet higher on average in May than  
24 natural outflows; correct?

25 WITNESS HUTTON: Yes.

1 MR. BEZERRA: Okay. And similar -- We have a  
2 similar kind of range with November being the smallest  
3 difference and May being the largest difference;  
4 correct?

5 WITNESS HUTTON: Yes.

6 MR. BEZERRA: So the -- In both -- In relation  
7 to both inflow and outflow, the comparison of natural  
8 flows to unimpaired flows has a seasonality pattern to  
9 it; correct?

10 WITNESS HUTTON: Yes, as shown in the tables.

11 MR. BEZERRA: Okay.

12 (Timer rings.)

13 MR. BEZERRA: Could we please go down to, on  
14 this same exhibit, Page 5-8, which I believe is .pdf  
15 Page 86.

16 (Exhibit displayed on screen.)

17 MR. BEZERRA: There we go.

18 And, Dr. Hutton, this figure is showing in  
19 this analysis the difference by month in critical water  
20 years between unimpaired flows and natural flows;  
21 correct?

22 WITNESS HUTTON: Yes.

23 MR. BEZERRA: Okay. And so this is Delta  
24 outflows; correct?

25 WITNESS HUTTON: Yes.

1 MR. BEZERRA: So in -- in March -- Or let's --  
2 let's focus on May.

3 So, on May, on average in critical water  
4 years, unimpaired flows would be 100 percent higher  
5 than natural flows; correct?

6 WITNESS HUTTON: Yes.

7 MR. BEZERRA: Okay. And then -- And -- So,  
8 then, if you look at -- The difference between them,  
9 again, has a seasonality, as depicted for critical  
10 water years here; correct?

11 WITNESS HUTTON: Yes.

12 MR. BEZERRA: Now, I -- I couldn't find  
13 anywhere in your materials where there was an analysis  
14 of the difference of unimpaired flows versus natural  
15 flows in a -- let's say a drought, multiple critical  
16 years in a row.

17 Have you done that -- any sort of analysis  
18 like that?

19 WITNESS HUTTON: Could you repeat the  
20 question?

21 MR. BEZERRA: Sure.

22 So, what we're looking at on 5-6 is an average  
23 of critical years throughout the period of record;  
24 correct?

25 WITNESS HUTTON: Yes.

1 MR. BEZERRA: And so those years are at least  
2 potentially non-sequential; correct?

3 WITNESS HUTTON: Yes.

4 MR. BEZERRA: But in -- in a drought, you  
5 could have critical years back to back; correct?

6 WITNESS HUTTON: Yes.

7 MR. BEZERRA: So have you presented any sort  
8 of analysis to show how the difference between  
9 unimpaired and natural flows might occur during  
10 sequential dry years in a drought?

11 CO-HEARING OFFICER DODUC: Mr. Berliner.

12 MR. BERLINER: Object to the use of the word  
13 "how."

14 It's unclear to me within the context of the  
15 question what you're asking with regard to the use of  
16 that word.

17 MR. BEZERRA: Perhaps I asked a bad question.  
18 I'm just trying to identify whether there's any  
19 analysis here to show the differences in a -- in a  
20 drought as opposed to averaging of critical years  
21 through the whole period of record.

22 CO-HEARING OFFICER DODUC: And if the answer  
23 is no, then it's obviously outside the scope of his  
24 rebuttal testimony.

25 Dr. Hutton.

1           WITNESS HUTTON: The -- The analysis by DWR  
2 has a year-by-year and a month-by-month analysis. It's  
3 not -- To my knowledge, it's not part of this report  
4 and I have not evaluated that.

5           MR. BEZERRA: Okay. But -- So I guess it's  
6 just a pretty simple point.

7           The results here in Figure 5-6, which is in  
8 critical years, if you had back-to-back critical years,  
9 these results potentially would occur sequentially in a  
10 dry period; correct?

11          CO-HEARING OFFICER DODUC: Outside the scope.

12          MR. BEZERRA: Okay. That's fine.

13          Thank you very much. That completes my  
14 cross-examination.

15          CO-HEARING OFFICER DODUC: Well done,  
16 Mr. Bezerra. Even though you did go a little bit over  
17 your 15 minutes, you got us out by noon.

18          MR. BEZERRA: I try.

19          CO-HEARING OFFICER DODUC: With that, we --  
20 Oh, before we take our lunch break, I need to ask if  
21 the parties have reached any understanding, because any  
22 accommodation I made for Group 21 and NRDC is premised  
23 on the notion that other parties will step up and we  
24 will not be wasting time this afternoon.

25          Miss Meserve.

1 MS. MESERVE: I have confirmed with Mr. Obegi  
2 that he can be here this afternoon in order to go in  
3 his regular order.

4 CO-HEARING OFFICER DODUC: Excellent.

5 MS. MESERVE: And I think that he -- that  
6 should conclude the rest of the day, probably, given  
7 the estimates.

8 CO-HEARING OFFICER DODUC: That is correct.

9 MS. MESERVE: Thank you.

10 CO-HEARING OFFICER DODUC: Thank you.

11 With that, we will take our lunch break and  
12 we'll return at 1 o'clock.

13 (Lunch recess at 11:59 a.m.)

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1                                   AFTERNOON SESSION

2                                   ---000---

3                                   (Proceedings resumed at 1:00 p.m.)

4                                   CO-HEARING OFFICER DODUC: All right. It's  
5 1:00 p.m. We are back in session.

6                                   Is there a housekeeping matter, Ms. Meserve?

7                                   MS. MESERVE: Yes, there is. Thank you. I  
8 believe two days ago you orally ruled that, on Friday  
9 morning at 9:30, the parties should be prepared to  
10 present information regarding the topics for which they  
11 would request surrebuttal. And I was wondering if, as  
12 a courtesy to the entire hearing list, some kind of  
13 notice could go out stating that ruling so that  
14 everyone is aware that you had set that for hearing.

15                                  CO-HEARING OFFICER DODUC: Doesn't everyone  
16 linger on my every word that I utter here, Ms. Meserve?

17                                  MS. MESERVE: I certainly do, and I was here  
18 to hear it in person. But I have spoken to a few  
19 different people who were not aware of that ruling, and  
20 it was kind of brief, you know. So I just think that  
21 would be a good thing to do so that everyone was on  
22 notice that you set that time.

23                                  CO-HEARING OFFICER DODUC: All right. We'll  
24 get an e-mail out. Thank you.

25                                  Ms. Des Jardins.



1 MS. DES JARDINS: Just following up on that.  
2 If there was a date and time in which you made the oral  
3 ruling on California Water Research's motion for  
4 reconsideration of the ruling -- of DWR's motion to  
5 quash the subpoena of Tim Wehling, I don't -- I'm going  
6 to have to go back and try and watch the hearing video,  
7 and I don't have time to watch all of it.

8 CO-HEARING OFFICER DODUC: I don't have time  
9 to go and watch all of it either.

10 Would you like us to issue that ruling again?

11 MS. DES JARDINS: That would be fine. I  
12 just -- I --

13 CO-HEARING OFFICER DODUC: Okay.

14 Ms. Des Jardins, your motion for reconsideration is  
15 hereby denied. It's been issued again. You may note  
16 the time and date.

17 MS. DES JARDINS: Okay. So there was no --  
18 there were no details on the ruling. That was what I  
19 was trying to find out.

20 CO-HEARING OFFICER DODUC: That's it. It's  
21 denied. We have advised parties before that we do not  
22 encourage the submittal of motions for reconsideration  
23 and we may take it up or we may dismiss it, and it is  
24 what it is.

25 Any other -- ah, Mr. Bezerra. You left things

1 on such a good note.

2 MR. BEZERRA: I think this is very short. I  
3 heard a rumor that you are asking parties to come  
4 Friday morning at 9:30 to discuss surrebuttal. I  
5 wanted to make sure that was true.

6 CO-HEARING OFFICER DODUC: That is true, and  
7 Ms. Meserve just brought it up. We will send out an  
8 e-mail confirming that. But, yes, just -- so for all  
9 of those who did not hear the first time and need to  
10 hear it again, 9:30 on this Friday, we will hear oral  
11 requests from parties with respect to surrebuttal.

12 I expect to hear from -- including in such a  
13 request, I'm sorry, the specific issues of topic areas  
14 you are requesting to cover in surrebuttal as well as  
15 specific testimony during rebuttal to which you are  
16 proposing to respond.

17 MR. BEZERRA: Thank you.

18 CO-HEARING OFFICER DODUC: And I will also add  
19 that we will not be accepting written or e-mail  
20 requests. So please do come Friday prepared to discuss  
21 that. If you're not able to come, then please  
22 coordinate with some of the other parties.

23 Mr. Mizell.

24 MR. MIZELL: Yes, earlier in the day, you  
25 asked if DWR had any objections to the entry into

1 evidence of the CSPA, et al., group, and DWR does not.

2 CO-HEARING OFFICER DODUC: And in that case,  
3 then, Mr. Jackson, your exhibits are in the record.

4 (Exhibits CSPA-500, CSPA-501 CSPA-502-R,  
5 CSPA-503, CSPA-504, CSPA-505 admitted  
6 into evidence)

7 CO-HEARING OFFICER DODUC: All right. My  
8 understanding is we have Mr. Keeling, Mr. Woelk, and  
9 then Mr. Obegi. I'm sorry -- Mr. Jackson, and  
10 Mr. Obegi. And that will be the four parties  
11 conducting cross-examination today.

12 Tomorrow, just in case we get busy later on  
13 and don't recap, we'll begin with Group 21; South  
14 Delta, Central Delta. Then, if I have my list  
15 correctly, we will then go to Ms. Des Jardins, Clifton  
16 Court, and Ms. Meserve.

17 All right. Mr. Keeling.

18 MR. KEELING: Good afternoon. Tom Keeling on  
19 behalf of the San Joaquin County protestants. All of  
20 my questions, and there are, I hope, very few of them,  
21 are for Dr. Hanson, and they go to the question of  
22 clarifying which opinions are meant to be addressed and  
23 rebut which parts of the testimony that have -- the  
24 reference to which have not been stricken from  
25 DWR-1223-Revised.

1 CO-HEARING OFFICER DODUC: I'm not sure I  
2 understand, but why don't you proceed, and we'll work  
3 out any issues as you go along.

4 MR. KEELING: Thank you.

5 CROSS-EXAMINATION BY MR. KEELING

6 MR. KEELING: Good afternoon, Dr. Hanson.

7 WITNESS HANSON: Good afternoon.

8 MR. KEELING: Just a few questions. If you  
9 could take a look at your testimony.

10 And perhaps Mr. Hunt could put it up.

11 It's DWR-1223-Revised at Pages -- it would be  
12 Page 3.

13 WITNESS HANSON: Yes.

14 MR. KEELING: Beginning with "Summary of  
15 Testimony."

16 Do you have that in front of you, Dr. Hanson?

17 WITNESS HANSON: I do.

18 MR. KEELING: Okay. Do I correctly understand  
19 that these bullet points are basically your  
20 identification of the opinions you render in the  
21 interest of this testimony?

22 WITNESS HANSON: These are not all of the  
23 opinions, but these were based on the remainder of the  
24 testimony, yes.

25 MR. KEELING: Well, I'm not asking if these

1 reflects all of your opinion. That's why you have the  
2 next X-number of pages.

3 I'm asking if these are the points, the bullet  
4 points that you meant to use to summarize what opinions  
5 you render?

6 WITNESS HANSON: These are.

7 MR. KEELING: And if you could turn your  
8 attention -- you may want to -- do you have a  
9 written -- do you have a writing on this? Do you have  
10 this in front of you?

11 WITNESS HANSON: I do.

12 MR. KEELING: Good. So if you could turn your  
13 attention to Page 2 of your testimony, Lines 23 through  
14 the end of the page, you see where it reads that your  
15 testimony is responding to issues raised regarding  
16 impacts to existing conditions, specifically -- and  
17 then you list various pieces of protestants' evidence  
18 that you cite to, correct?

19 WITNESS HANSON: Correct.

20 MR. KEELING: And this was evidence that you  
21 intend your opinions to rebut; is that correct?

22 WITNESS HANSON: These were exhibits and  
23 testimony that had specific statements that I was  
24 responding to, yes.

25 MR. KEELING: Well, I'm going to try to

1 expedite this. But if Dr. Hanson -- and I would  
2 understand it if you want to work item by item; we can  
3 do that. I'm going to try to do it in larger groups to  
4 expedite this.

5           We'll start with this one. At the bottom of  
6 Page 3 of your testimony, you state that multiple  
7 authors have concluded that flow alone cannot be used  
8 to restore the Delta. And then a few -- towards the  
9 end of that sentence, you go on to say that Buchanan  
10 also concluded that increased flow alone will not be  
11 sufficient to resolve the low salmonid survival in the  
12 Delta. Do you see that?

13           WITNESS HANSON: I do.

14           MR. KEELING: Referring back to Page 2, those  
15 references of testimony, can you tell me which, if any,  
16 of those portions of testimony include a statement by  
17 any witness or anyone that flow alone is sufficient to  
18 restore the Delta?

19           MR. BERLINER: I object to the question.

20           CO-HEARING OFFICER DODUC: I'm still trying to  
21 understand the question.

22           But go ahead and state your objection,  
23 Mr. Berliner.

24           MR. BERLINER: Thank you. We had a motion to  
25 which the Board ruled and issued a redlined version of



1 the testimony that the Board felt comports with the  
2 scope of its ruling and the relationship between the  
3 testimony -- the rebuttal testimony offered here and  
4 the testimony that was offered to which this is  
5 rebuttal. And Mr. Keeling was among those parties  
6 making the motion.

7 This testimony now responds to the Board's  
8 order. So it seems to me that the relevance of  
9 Mr. Keeling's question would go to whether or not this  
10 rebuttal testimony appropriately rebuts testimony that  
11 was offered previously to which the Board has already  
12 issued a ruling.

13 If this is now an opportunity for  
14 reconsideration, I believe it's late. That time should  
15 have been made before the witness started testifying.  
16 He's already started testifying. And I see no basis  
17 for pursuing this line in light of the Board's granting  
18 of the motion and then issuing the redlined testimony.

19 CO-HEARING OFFICER DODUC: Yes. If I  
20 understand your question correctly, Mr. Keeling, you  
21 hopefully are trying to ascertain whether or not  
22 additional testimony needs to be struck to comply with  
23 the Board's ruling.

24 MR. KEELING: No.

25 CO-HEARING OFFICER DODUC: No? Okay.

1           MR. KEELING: I'm not moving for  
2 reconsideration of the motion -- of the ruling.

3           The Hearing Officers have decided to strike  
4 certain references in response to that motion and to  
5 leave certain references in. I cannot divine and I  
6 need clarification -- I take it now it can only come  
7 from the witness -- about what it is in the testimony  
8 that the protestants have offered that is rebutted by  
9 his opinions.

10           And the only way that I can see to do that,  
11 since there was no written ruling, is to walk him  
12 through it.

13           CO-HEARING OFFICER DODUC: Mr. Keeling,  
14 Mr. Keeling, let's --

15           MR. KEELING: I don't know how to brief it  
16 otherwise when I make the closing argument.

17           CO-HEARING OFFICER DODUC: Let's take a pause  
18 here, Mr. Keeling.

19           The ruling was that, while certainly there  
20 might be mischaracterization in these witnesses'  
21 testimony regarding the specific testimony to which  
22 they are rebutting and which I think staff was trying  
23 to address through their strike-out, it still remains  
24 that, even without that specific reference to  
25 testimony, the 2010 Flow Criteria Report is evidence

1 introduced during Part 2, and therefore, evidence  
2 introduced during Part 2 case in chief is subject to  
3 rebuttal testimony.

4 MR. KEELING: I understand that. None of my  
5 questions have anything to do with the 2010 report;  
6 none of them -- because when we looked to see what the  
7 five opinions are he gives in this testimony which he  
8 summarized on Page 3, they are -- somebody -- somebody  
9 says that flows alone are not sufficient. Well, okay.  
10 But nobody in the testimony that was left in, that  
11 wasn't struck, said otherwise.

12 He says that the current state of the Delta is  
13 a result of multiple physical and hydrologic factors  
14 operating over multiple time scales. I want to walk  
15 him through and see if we can find any testimony that  
16 said anything contrary to that that he's rebutting  
17 because this is supposed to be rebuttal testimony.  
18 You've made that point very clear.

19 He says multiple historical, physical and  
20 hydrologic changes have shaped the current Delta.

21 I'm very curious, as we walk through this  
22 testimony that he says he's rebutting, to find a single  
23 sentence from anybody who says that's not true. So I'm  
24 trying to figure out what --

25 CO-HEARING OFFICER DODUC: Mr. Keeling, you're

1 not listening.

2 MR. KEELING: Okay. Why is this testimony  
3 still in is what I'm trying to figure out. Why is  
4 it -- why are these cites still in there? Doesn't have  
5 anything to do with the 2010 flow report.

6 CO-HEARING OFFICER DODUC: Are you suggesting  
7 that this -- these sentences pertaining to flow that's  
8 in Mr. -- actually, Dr. Hanson's testimony is not  
9 reflected in the 2010 Flow Criteria Report?

10 MR. KEELING: I'm not asking any questions  
11 about the 2010 flow report. I'm asking questions about  
12 the specific testimony that he says he's rebutting,  
13 which is not about the 2010 flow report.

14 CO-HEARING OFFICER DODUC: I'm going to let  
15 the attorney handle this.

16 MR. DEERINGER: So, Mr. Keeling, if I  
17 understand the line of questioning correctly, it's that  
18 the Hearing Officer's ruling on Monday, the oral  
19 ruling -- or actually, more accurately, the strike-outs  
20 left certain references to your client's testimony  
21 unredacted --

22 MR. KEELING: Right.

23 MR. DEERINGER: -- and that, after the ruling,  
24 it's ambiguous where the witnesses are responding to  
25 that testimony versus where they are responding to the

1 2010 Flow Criteria Report and that that's what you're  
2 trying to sort out on cross.

3 MR. KEELING: That's exactly right. I have no  
4 interest in the 2010 report. None of my questions are  
5 about that.

6 MR. DEERINGER: Okay.

7 CO-HEARING OFFICER DODUC: Ms. Morris.

8 MS. MORRIS: So just to be clear, though, this  
9 testimony does respond to 2010 flow report as it was  
10 referenced, and by many witnesses it was also  
11 referenced, and it was also a lot of references to  
12 existing conditions. So the testimony in the opinions  
13 may not be about rebutting the -- an exact quote in the  
14 2010 flow but rather the principles.

15 And so I guess I would join Mr. Berliner's  
16 objection to the question as being irrelevant and an  
17 inefficient use of time to try to sort out a specific  
18 cite to a specific opinion.

19 CO-HEARING OFFICER DODUC: I understand.  
20 Let's hear from the rest.

21 MS. DES JARDINS: Yes, this is  
22 Deirdre Des Jardins.

23 I'd like to raise a standing objection. Under  
24 People versus Ramirez, the right to freedom from  
25 arbitrary adjudicative procedures, Supreme Court case

1 People versus Ramirez, 1979 25 Cal.3d 260, 268 to 269.  
2 And the reason is the Hearing Officer's ruled in the  
3 written ruling on July 27th, 2018 that the 2010 Delta  
4 Flow Criteria Report was not admitted into evidence  
5 during Part 2 of the hearing, and therefore, it is not  
6 the proper subject of Part 2 rebuttal.

7 And while CSPA did submit it in Part 2, the  
8 Hearing Officers had previously ruled that duplicate  
9 exhibits would not be accepted.

10 And there's further parts of the July 27th  
11 hearing ruling which indicate that specific references  
12 from witnesses' testimony were required. And  
13 furthermore, I would like to request that hearing  
14 rulings on scope be consistent in this hearing. Thank  
15 you.

16 MR. DEERINGER: For the record, the Hearing  
17 Officers clarified a subsequent ruling, subsequent to  
18 the July 27th ruling, that their observation that the  
19 2010 Flow Criteria Report was not a Part 2 exhibit was  
20 in error and that, in fact, it was accepted into  
21 evidence during Part 2.

22 That was in response to the San Joaquin  
23 Tributaries Authority -- I guess -- I don't think they  
24 styled it as a motion for reconsideration. We treated  
25 it as that.

1           And I'm sorry, I'm not recalling the exact  
2 date. But there was a follow-up ruling after July 27th  
3 in which the Board acknowledged that, yes, the 2010  
4 Flow Criteria Report is a Part 2 case-in-chief exhibit  
5 and, therefore, testimony that is responsive to that is  
6 valid rebuttal.

7           CO-HEARING OFFICER DODUC: Mr. Jackson.

8           MR. JACKSON: Yes, I'd like to point out for  
9 the record that I did not join the motion to -- CSPA  
10 did not join the motion that was filed by Mr. Keeling  
11 and Ms. Meserve. And part of the reason was that we  
12 are very interested in going through the testimony that  
13 was in front of us because we think it supports a  
14 number of our positions.

15           And consequently, since we're still in here, I  
16 want to make sure that I'm going to be allowed to ask  
17 questions about the testimony that's in here that  
18 relates to us.

19           CO-HEARING OFFICER DODUC: I'm sorry. Have  
20 you received any indication otherwise?

21           MR. JACKSON: I have not, but I wanted to make  
22 the argument before you ruled on Mr. Keeling's  
23 situation because I don't want to get into the "there  
24 was a prior ruling" kind of argument.

25           CO-HEARING OFFICER DODUC: Thank you.

1 Ms. Meserve.

2 MS. MESERVE: Just briefly to add, I mean, I  
3 think in addition, another basis for the ability to ask  
4 these questions of the unstricken testimony, it simply  
5 goes to the weight and the credibility of the witness's  
6 testimony in terms of what he meant when he said, for  
7 instance, what we see at the bottom of Page 3 and what  
8 he was referring to.

9 And it seems like, irrespective of the motions  
10 to strike and all that procedural stuff, that that's  
11 within the scope of his testimony, and we ought to be  
12 able to ask questions about it. Thanks.

13 CO-HEARING OFFICER DODUC: So getting back to  
14 Mr. Keeling, before all this started, I asked you a  
15 question. I think you misunderstood my question, and I  
16 probably did not phrase it clearly enough.

17 I was trying to ascertain -- because we issued  
18 a ruling saying that some of the testimony from these  
19 witnesses mischaracterized the case-in-chief testimony  
20 of protestants to which they are rebutting, that staff  
21 was going to make some redline strike-outs.

22 We acknowledged this morning, and I think -- I  
23 think this is where you're going, is you're trying to  
24 determine whether language that remains are also  
25 reflecting that mischaracterization of your witnesses'



1 testimony, or mischaracterizing rebutting your  
2 witnesses' testimony.

3 MR. KEELING: That may be ultimately correct.  
4 That's not the immediate object of the exercise.

5 Let's put the 2010 flow report aside.

6 CO-HEARING OFFICER DODUC: I am. Yes, I am.

7 MR. KEELING: Okay. I understand, whether I  
8 agree or not, but I understand that the ruling is that  
9 the rebuttal testimony may address the 2010 flow  
10 report. I get that.

11 CO-HEARING OFFICER DODUC: Yes.

12 MR. KEELING: I get that some testimony that  
13 was mischaracterized by the witness as testimony to  
14 which he was responding, rebutting, has been stricken.  
15 I get that.

16 I also understand, quite to my surprise, that  
17 in the Revised 1223, the references to protestants'  
18 testimony at the bottom of Page 2 were not stricken.  
19 Why I am surprised at that --

20 CO-HEARING OFFICER DODUC: So what are your  
21 intentions with respect to that language?

22 MR. KEELING: I need to find out what part of  
23 that testimony he thinks he is rebutting.

24 CO-HEARING OFFICER DODUC: Okay. Because  
25 it's -- if it's mischaracterized, then I assume you

1 would move to strike.

2 MR. KEELING: I would renew the motion as to  
3 those entries.

4 CO-HEARING OFFICER DODUC: Exactly. That's  
5 what I thought you were doing, Mr. Keeling.

6 MR. KEELING: That's what I'm doing.

7 CO-HEARING OFFICER DODUC: Okay. I should  
8 have had more coffee during lunch.

9 MR. KEELING: And I was trying to expedite it  
10 by not walking through each one, but I'm happy to do  
11 that.

12 CO-HEARING OFFICER DODUC: No, no. No, no. I  
13 think we are -- we now understand your purpose in this  
14 line of questioning.

15 And with that, Mr. Berliner, your motion,  
16 objection, is overruled.

17 MR. KEELING: And, Dr. Hanson, I'm trying to  
18 walk through this, but I don't want to prejudice you.  
19 If you want time to review either -- any of the  
20 testimony that you referred to at the bottom of Page 2,  
21 you just let me know, and we'll wait for you and give  
22 you a chance to do that.

23 I'm sure that Mr. Hunt will help by putting it  
24 up for you.

25 Taking a look at that collection of testimony

1 that you've referred to at the bottom of Page 2, and  
2 looking at your fifth bullet point on Page 3, can you  
3 tell me which testimony in the protestants' testimony  
4 reference that fifth bullet point rebuts?

5 WITNESS HANSON: Let me preface this by saying  
6 that I don't have a recollection of each of these  
7 specific references. I went through and reviewed them  
8 all in response to this issue. But in general, there  
9 were two references that came out that I'm rebutting in  
10 this fifth bullet.

11 One is the 2010 flow report that basically  
12 said, "We're going to consider flow alone as the basis  
13 for this set of discussions."

14 CO-HEARING OFFICER DODUC: I'm sorry.

15 WITNESS HANSON: For the discussions in the  
16 subsequent report, the 2010 flow report.

17 CO-HEARING OFFICER DODUC: Okay.

18 WITNESS HANSON: It was pretty specific. And  
19 we provided testimony during that process.

20 CO-HEARING OFFICER DODUC: Yes, because we  
21 were directed to only consider public trust resources.  
22 Yes.

23 WITNESS HANSON: And all I was responding to  
24 was the "flow alone" component of that.

25 The second is there were references -- and I

1 believe they were either Tom Cannon's or  
2 Chris Shutes' -- that in essence said, "If we were to  
3 increase flow, survival and abundance would increase."

4 And these references basically say, "We don't  
5 have any assurances. There's high uncertainty that  
6 that relationship would in fact result in greater  
7 survival and greater abundance."

8 MR. KEELING: So could you direct me to the  
9 part of -- you said Mr. Shutes' testimony or  
10 Mr. Cannon's?

11 WITNESS HANSON: Those were two that I looked  
12 at specifically with regard to these issues. And  
13 unfortunately, I have them all highlighted. I just  
14 didn't bring them in this afternoon.

15 MR. BERLINER: I think it would be appropriate  
16 to pull up -- since Mr. Keeling has asked about the  
17 citations at the bottom of Page 2, that we pull up, for  
18 instance, the first one, CSPA-202, at Pages 7, et seq.,  
19 which are all cited here.

20 MR. KEELING: Actually -- and I think it's a  
21 good idea, Mr. Berliner. But let's first pull up his  
22 first one, which is Exhibit CSPA-204 at -- first let's  
23 go to Page 7. And I'm getting these page references  
24 from the bottom of Page 2 of his testimony.

25 MS. MORRIS: Just for the record, I mean, this

1 list of citations is for all the opinions. It's not  
2 as -- so you may look at one, and it may not be there.  
3 But it's a block citation to everything he's responding  
4 to, so. . .

5 MR. KEELING: That's a very good point, and  
6 I'm going to walk the witness through each of those  
7 bullet point opinions.

8 So, Dr. Hanson, I had asked you about the  
9 fifth bullet point in which you say the flow alone  
10 cannot be used to restore the Delta.

11 And my question is what on Page 7 of  
12 CSPA-204-Errata --

13 Mr. Hunt, I believe this is 204-Errata,  
14 Mr. Hunt. Or am I -- yes, I think he's -- well, no.  
15 It's 204 according this. All right. 204. Sorry.

16 Do you see that, Dr. Hanson?

17 WITNESS HANSON: I do see this.

18 Mr. Hunt, could you scroll down just a little  
19 bit, please.

20 MR. KEELING: Do you want me to repeat the  
21 question?

22 WITNESS HANSON: No. I'm just -- okay.

23 I believe that the best linkage is probably  
24 between the first bullet, "These criteria and the  
25 relaxation in drought periods are the primary cause of

1 drastic declines in Bay-Delta fish populations over the  
2 past five decades," and my fourth bullet, which  
3 basically says the relationship between Sacramento  
4 River flow rates and juvenile salmonid survival is weak  
5 and has high uncertainty.

6           So I -- I don't believe that statement can be  
7 as strong as it's portrayed.

8           MR. KEELING: So you've -- the bullet point,  
9 your opinion that you anchored to this testimony from  
10 Dr. Can- -- from Mr. Cannon is your fourth bullet  
11 point?

12           WITNESS HANSON: When I looked at the various  
13 reference materials, I didn't try and do a one-to-one  
14 rebuttal for each one. I was looking at kind of what  
15 they were saying, what they intended to say, and  
16 whether I thought the data that we had available  
17 supported those positions.

18           MR. KEELING: Would it be fair to characterize  
19 that as a holistic approach?

20           WITNESS HANSON: It's not holistic in the  
21 sense that there are a whole variety of other factors I  
22 didn't take into account. But it's a logical  
23 progression of looking at a statement and saying does  
24 that statement comport with the available information  
25 and do I believe that it's supported as strongly as

1 it's been presented.

2 And in a number of instances that I provide my  
3 comments, it's not that I completely disagree with an  
4 earlier statement, but I disagree with the strength and  
5 the characterization.

6 And that's one of the reasons that, in my oral  
7 testimony and in this written testimony, I wanted to be  
8 explicitly clear that I wasn't looking just at a trend,  
9 but I was looking at the variance around that trend and  
10 the confidence that could be placed in that  
11 relationship.

12 MR. KEELING: Well, to be clear, what we're  
13 talking about, would you agree that --

14 CO-HEARING OFFICER DODUC: Hold on, please,  
15 Mr. Keeling.

16 No? You're just -- all right.

17 MR. KEELING: Would you agree -- setting aside  
18 your fourth bullet point, could we get clear that none  
19 of the other bullet point summaries of your opinion are  
20 anchored in Page 7 of Dr. Cannon?

21 MR. BERLINER: Objection, misstates the  
22 witness's testimony.

23 CO-HEARING OFFICER DODUC: Okay. Now, let's  
24 everyone hold on. This is perhaps becoming more  
25 complicated than it need be.

1           Mr. Keeling, if I might.

2           Dr. Hanson, putting aside the 2010 flow  
3 criteria report which we have already ruled is in the  
4 record and to which you may provide rebuttal testimony.

5           The only question that remains is whether you  
6 are asserting that any of these summary points in your  
7 testimony are specifically directed at rebutting Part 2  
8 case-in-chief testimony.

9           And since you know that this was the subject  
10 of an extensive motion earlier in this hearing and you  
11 had stated earlier that you had a chance to take a look  
12 through your testimony, I am expecting you right now  
13 and here to be able to clearly articulate for the  
14 record and for Mr. Keeling and the other parties if you  
15 are rebutting specific case-in-chief testimony in this  
16 Part 2 and, if so, which witness and which testimony  
17 you are rebutting with these specific points.

18           MS. MORRIS: May I --

19           CO-HEARING OFFICER DODUC: No. Let's wait to  
20 hear from Dr. Hanson.

21           WITNESS HANSON: For example, one of the  
22 elements that I was rebutting in this particular piece  
23 were statements that, with no discussion of variance --

24           CO-HEARING OFFICER DODUC: You have to be very  
25 specific.



1 WITNESS HANSON: Oh, I will.

2 -- with no discussion of variance or  
3 uncertainty simply said that, if we were able to  
4 increase flows, survival would go up.

5 CO-HEARING OFFICER DODUC: And it --

6 WITNESS HANSON: This statement basically says  
7 there was a relaxation of some of these flow standards  
8 and that's what caused the populations to go down.

9 CO-HEARING OFFICER DODUC: Which statement are  
10 you referring to?

11 WITNESS HANSON: The statement that we were  
12 just looking at from CSPA-204, Page 7 that basically  
13 said the drastic decline in the Bay-Delta fishes  
14 populations are the result of State Board relaxations  
15 during droughts. And I don't think that linkage is  
16 nearly as strong as the statement.

17 CO-HEARING OFFICER DODUC: And are there any  
18 other specific Part 2 case-in-chief testimony to which  
19 you are rebutting?

20 WITNESS HANSON: There were statements that  
21 were made in some of the testimony about the impact  
22 that the State and Federal water projects have had on  
23 habitat within the Delta.

24 And all I wanted to point out is there are a  
25 lot of factors that influence habitat quality and

1 availability that are well beyond just the State and  
2 Federal water projects.

3 CO-HEARING OFFICER DODUC: So where  
4 specifically in your rebuttal testimony do you indicate  
5 not only your rationale, but the specific rebuttal  
6 testimony to which you -- I'm sorry -- the specific  
7 case-in-chief testimony to which you are rebutting?

8 That was an order from us in terms of  
9 providing rebuttal testimony, that you identify  
10 specifically the case-in-chief testimony to which you  
11 are rebutting.

12 WITNESS HANSON: If I could request, I had  
13 prepared a summary when I went through the testimony  
14 that linked the three areas that I was addressing to  
15 specific citations, and I just need to get a copy of  
16 that.

17 CO-HEARING OFFICER DODUC: But it's not in  
18 this --

19 WITNESS HANSON: It's not in this document.

20 CO-HEARING OFFICER DODUC: And it's not what  
21 you submitted previously per the deadline we  
22 established?

23 MS. MORRIS: Can I -- I have an objection.

24 CO-HEARING OFFICER DODUC: Hold on. Let me  
25 finish. I will get to you.

1           Is that correct, Dr. Hanson?

2           WITNESS HANSON: I provided that summary to  
3 Mr. Mizell and other attorneys.

4           CO-HEARING OFFICER DODUC: But not to the  
5 service list?

6           WITNESS HANSON: I did not provide it to the  
7 service list or to the State Board.

8           CO-HEARING OFFICER DODUC: All right.

9           Now, Mr. -- I'm sorry -- Ms. Morris.

10          MS. MORRIS: That's okay.

11          I just -- again, I am joining in the  
12 objection. And if we can pull up CSPA-202-Errata.  
13 And, you know, part of the problem is that, because of  
14 the characterization, it did state generally, then it  
15 was stricken.

16          But if you look at CSPA-202-Errata, Page 7,  
17 which is cited in Mr. Hanson's testimony as he's  
18 responding it to, it talks about the recommendations in  
19 the 2010 flow criteria related to fisheries. And that  
20 is what he is responding to. And that should -- it  
21 more than covers everything adequately in his testimony  
22 that he's rebutting.

23          And he's mentioned that twice now -- and it's  
24 being ignored -- that he's responding to the claims  
25 from the 2010 -- that are in the 2010 flow criteria

1 report, and the changes and omissions -- not omissions  
2 but the changes in the science since then that haven't  
3 been discussed.

4 CO-HEARING OFFICER DODUC: So are you  
5 asserting then that he is not responding to any  
6 particular rebuttal testimony but he is responding to  
7 the 2010 Flow Criteria Report?

8 MS. MORRIS: No. I -- it's both because, one,  
9 it's the omission which has been ruled as permissible  
10 because there has been new science since the 2010 flow  
11 report; and secondly, in this section, CSPA-202-Errata,  
12 it generally talks about the recommendations of the  
13 2010 Flow Criteria Report. So he lists this, and he's  
14 rebutting these opinions and the testimony that's  
15 provided in the rest, the remainder of this document  
16 which largely deals with the 2010 Flow Criteria Report.

17 CO-HEARING OFFICER DODUC: Mr. Keeling.

18 MR. KEELING: I appreciate the fact that many  
19 documents submitted by both sides refer to flow. A  
20 closer, less subjective and less attenuated  
21 relationship between rebuttal testimony and direct --  
22 and case-in-chief testimony has always been required by  
23 the Hearing Officers.

24 CO-HEARING OFFICER DODUC: Yes, it has been.

25 MR. KEELING: On top of that, to follow up on

1 Ms. Morris's example, she gave an example of Page 7,  
2 Mr. Shutes' testimony, but nowhere on Page -- and in  
3 those pages or anywhere between Pages 7 and 12,  
4 Mr. Shutes cited by Dr. Hanson, did Mr. Shutes ever  
5 claim that flow alone could restore the Delta, not in  
6 those words or any other words. Nor did he ever assert  
7 the point that the Delta could be restored to  
8 pre-human-alteration conditions, which is another point  
9 that we're being told is an opinion in rebuttal. So I  
10 like the examples she gave.

11 CO-HEARING OFFICER DODUC: All right. Let's  
12 hear from counsels, Mr. Mizell and Mr. Berliner.

13 MR. MIZELL: Yes. Well, I think Mr. Keeling  
14 has just gone -- moved from the point that Dr. Hanson  
15 spoke to to a separate topic within his testimony. If  
16 we care to recall what Dr. Hanson just said, he was  
17 focusing on the fourth bullet point and gave you a  
18 citation of CSPA-204, Page 7, and pointed you at a  
19 specific bullet point. I don't remember if it was  
20 bullet point 2 or 3, but we can go back there.

21 So he has drawn a linkage between a specific  
22 bullet point and another --

23 CO-HEARING OFFICER DODUC: Yes.

24 MR. MIZELL: -- part of testimony.

25 CO-HEARING OFFICER DODUC: Except --

1           MR. MIZELL: Mr. Keeling now would like to  
2 move on to a new topic, and the witness has not been  
3 given a chance to provide a citation for that next  
4 topic. So to make a conclusion about it now is  
5 premature.

6           CO-HEARING OFFICER DODUC: Mr. Mizell, correct  
7 me if I'm wrong, but the citation Dr. Hanson provided  
8 is not in his written testimony, or is it?

9           MR. MIZELL: It is in his written testimony.  
10 It is in a citation that is not struck at the bottom of  
11 Page 2.

12           MS. MORRIS: May I, for the record? Because I  
13 think there was a miscommunication between you and  
14 the -- and Dr. Hanson.

15           He was saying that he has -- the blog post is  
16 cited that Mr. Cannon relies on that he's responding  
17 to. He was saying he didn't have the summary of his  
18 responses to the blog post. So it's not that the cite  
19 wasn't there. If you recall, there was extensive  
20 cross-examination of Mr. Cannon in his testimony that  
21 relied on his own blog posts. So I think that got lost  
22 in translation.

23           CO-HEARING OFFICER DODUC: All right.

24           Ms. Des Jardins.

25           MS. DES JARDINS: Yes, I would like to move to

1 strike the last two remarks by Ms. Morris as crossing  
2 over the line into testimony. There's a difference  
3 between argument and providing testimony for the  
4 witness.

5 CO-HEARING OFFICER DODUC: All right. Let's  
6 go ahead and take a break. We will return shortly.

7 (Recess taken)

8 CO-HEARING OFFICER DODUC: All right. We are  
9 back in session. The objections to Mr. Keeling's line  
10 of questioning are overruled.

11 But, Mr. Keeling, perhaps we might help each  
12 other do this in an efficient way.

13 Is there a particular section -- I'm looking  
14 in particular at Page 2. If we could go to Page 2, at  
15 the bottom of Page 2. Stop there, please.

16 Let's see if we could do this, Mr. Keeling,  
17 because I want to set the record as well as the  
18 testimony and make sure it's correct for our  
19 consideration as much as you do.

20 MR. KEELING: Thank you.

21 CO-HEARING OFFICER DODUC: So I'm looking at,  
22 on Page 2, starting on Line 23 and ending on  
23 Line 27, 28.

24 Dr. Hanson, this is a very long list of  
25 citations to which you are allegedly responding to in

1 your rebuttal testimony.

2 Am I correct, Mr. Keeling, that you are  
3 interested in identifying specifically where in his  
4 testimony Dr. Hanson is responding to this line -- this  
5 list of citations and, in particular, what, given the  
6 broad nature of his testimony, issues raised regarding  
7 impacts to existing conditions -- you would be  
8 interested in knowing specifically which issues  
9 regarding impacts he's responding to in these citations  
10 that he made?

11 MR. KEELING: With reference to the five  
12 bullet-pointed opinions in the next page.

13 CO-HEARING OFFICER DODUC: Correct.

14 MR. KEELING: Not with reference to the 2010  
15 Flow Criteria Report.

16 CO-HEARING OFFICER DODUC: Understood.

17 MR. KEELING: I understood that could be  
18 rooted anywhere.

19 CO-HEARING OFFICER DODUC: Exactly.

20 So we're interested -- and I'll get to you,  
21 Mr. Jackson -- so that Dr. Hanson and that everyone is  
22 clear, given the general statement that you have in  
23 your testimony, Dr. Hanson, in terms of the -- the  
24 case-in-chief testimony to which you are rebutting and  
25 then a long list of citations, we're interested in



1 getting as much clarity as possible to where in your  
2 testimony you are responding to these citations and, in  
3 particular, what issues/impacts you are responding  
4 that's based on these cited testimony. Understood?

5 WITNESS HANSON: Understood.

6 CO-HEARING OFFICER DODUC: Mr. Jackson.

7 MR. JACKSON: Yes, I just wanted to indicate  
8 that this is probably going to somewhat shorten mine  
9 because these are my citations. And I want to --

10 CO-HEARING OFFICER DODUC: Do you want to join  
11 Mr. Keeling?

12 MR. JACKSON: I wanted to go through them --

13 CO-HEARING OFFICER DODUC: Okay.

14 MR. JACKSON: -- when I testify.

15 CO-HEARING OFFICER DODUC: All right. When  
16 you conduct cross.

17 MR. JACKSON: When I cross. I'm just joking.  
18 So we're not wasting time.

19 CO-HEARING OFFICER DODUC: I don't consider it  
20 a waste of time. I think it's an important  
21 clarification that we need to have.

22 Which means, Mr. Keeling, that you will need  
23 more than three minutes to do it.

24 MR. KEELING: I'm afraid you're right. I was  
25 hoping, since you have a clear bead on this, that you

1 would to do it for me.

2 CO-HEARING OFFICER DODUC: Would that be like  
3 practicing law without a license?

4 MR. KEELING: Well, that's what I've been  
5 doing for 33 years. I don't know.

6 CO-HEARING OFFICER DODUC: All right.

7 Dr. Hanson, not that I am taking over cross  
8 from Mr. Keeling because I am not. But to help me and  
9 all of us better understand your testimony, looking at  
10 this particular section that I just pointed out on  
11 Page 2, Line 23 through Line 28 or so, first of all,  
12 where in your written testimony are you responding to  
13 these issues?

14 WITNESS HANSON: I was responding to these  
15 issues in a variety of locations throughout my  
16 testimony, some dealing with survival versus flow or  
17 exports, some dealing with habitat change.

18 CO-HEARING OFFICER DODUC: All right. So then  
19 let's look at -- where are you responding to CSPA-204,  
20 Page 7 and 31 through 32?

21 WITNESS HANSON: Could we bring that CSPA-204  
22 up?

23 CO-HEARING OFFICER DODUC: Where in your  
24 testimony --

25 WITNESS HANSON: Oh.

1 CO-HEARING OFFICER DODUC: -- are you  
2 responding to CSPA-204, Page 7 and 31 through 32?

3 WITNESS HANSON: And all I was going to ask is  
4 I'd like to see what those pages contained in the CSPA  
5 volume.

6 CO-HEARING OFFICER DODUC: Okay. I was hoping  
7 you would be familiar enough with your own testimony by  
8 now, but let's pull it up.

9 So we're pulling up CSPA-204.

10 WITNESS HANSON: But you have -- excuse me,  
11 but you had some specific page?

12 CO-HEARING OFFICER DODUC: I'm looking at your  
13 testimony.

14 WITNESS HANSON: Okay.

15 CO-HEARING OFFICER DODUC: And you're citing  
16 Page 7.

17 WITNESS HANSON: And 31 through 32.

18 CO-HEARING OFFICER DODUC: Yes.

19 WITNESS HANSON: We've already talked about  
20 Page 7, which was the relaxation in drought conditions  
21 that led to the drastic fish declines.

22 CO-HEARING OFFICER DODUC: That is the  
23 testimony to which you are rebutting.

24 WITNESS HANSON: Correct.

25 CO-HEARING OFFICER DODUC: Where in your

1 testimony is your rebuttal?

2 WITNESS HANSON: My rebuttal is related to my  
3 fourth bullet in my summary, where I'm saying that  
4 there isn't that strong a relationship, that there is  
5 significant uncertainty in how a change in flow --

6 CO-HEARING OFFICER DODUC: I understand. But  
7 that fourth bullet is a summary of your testimony.

8 WITNESS HANSON: Right.

9 CO-HEARING OFFICER DODUC: Where in your  
10 testimony might we find the rebuttal itself?

11 WITNESS HANSON: The rebuttal to the flow  
12 issues is in Section 3, Salmonid Flow Survival  
13 Relationships.

14 CO-HEARING OFFICER DODUC: Page number,  
15 please?

16 WITNESS HANSON: Starts on Page 19. And so,  
17 for example, I included Figure 7 on Page 24 in which I  
18 tried to characterize the degree of variability and  
19 uncertainty in how a change in flow might result in a  
20 corresponding change in survival.

21 CO-HEARING OFFICER DODUC: And let me turn  
22 back to Mr. Keeling -- or Mr. Jackson, for that matter,  
23 since it's your testimony to which he is -- your  
24 witness's testimony to which he's referring.

25 Do you have any questions based on that?

1 MR. JACKSON: Yes, I do.

2 CO-HEARING OFFICER DODUC: Then please ask  
3 them. And the reason we're doing this is because of  
4 the lack of direct citation and linkage, Dr. Hanson.

5 WITNESS HANSON: And I have learned my lesson,  
6 believe me.

7 CO-HEARING OFFICER DODUC: So Mr. Jackson, if  
8 you would want to take a seat next to Mr. Keeling.

9 This is somewhat unorthodox, but it's all in  
10 the interest of trying to get as much clarity as  
11 possible and to better understand your testimony,  
12 Dr. Hanson.

13 WITNESS HANSON: Understood.

14 CO-HEARING OFFICER DODUC: Mr. Mizell.

15 MR. MIZELL: Yes, and if -- Dr. Hanson can  
16 confirm, but I believe his Section 3 goes from 19 to 26  
17 in his testimony, just so that we have that end page  
18 number.

19 CO-HEARING OFFICER DODUC: Very good.

20 So, Mr. Jackson, if we could just focus on  
21 that particular portion of Dr. Hanson's testimony for  
22 now.

23 I appreciate everyone's adaptability on this.

24 MR. JACKSON: So, Dr. Hanson, you agree that  
25 there is a -- a relationship between flows in the

1 Sacramento River in the Delta that shows juvenile  
2 salmonids have a general but, you say, weak trend of  
3 increased survival when flows are higher?

4 WITNESS HANSON: For example --

5 CO-HEARING OFFICER DODUC: Hold on, please.

6 MR. BEZERRA: Objection, vague and ambiguous.  
7 What flows are we talking about? When? What water  
8 year types? I mean, just putting a graph on the screen  
9 and saying "flows" doesn't give you any definition as  
10 to what the actual question is.

11 MR. JACKSON: I'm sorry. I just read directly  
12 from the testimony on Page 19.

13 CO-HEARING OFFICER: Yes, I saw that.

14 Overruled.

15 Dr. Hanson, please answer.

16 WITNESS HANSON: I did several things. In  
17 looking at this Figure 7, which is from Page 24 of my  
18 testimony, I did find the trend with increasing  
19 survival in general as flows increased. That trend is  
20 consistent with other authors, but --

21 CO-HEARING OFFICER DODUC: I believe that was  
22 not the question, Mr. Hanson.

23 MR. JACKSON: Well, he's answered the  
24 question.

25 CO-HEARING OFFICER DODUC: Yes.

1 MR. JACKSON: And I now have another one.

2 Did you testify in the 2010 flow hearings?

3 WITNESS HANSON: Yes, I did.

4 MR. JACKSON: Did you recognize the same trend  
5 in 2010?

6 WITNESS HANSON: I don't remember. The  
7 testimony I presented in 2010 focused mostly on the  
8 interrelated effects where, if you increase flows, then  
9 you have to worry about cold water storage.

10 MR. JACKSON: So basically, in 2010, you did  
11 testify. For whom?

12 WITNESS HANSON: For the State Water  
13 Contractors.

14 MR. JACKSON: And you're testifying here for  
15 the State Water Contractors?

16 WITNESS HANSON: No, I'm testifying here for  
17 DWR.

18 MR. JACKSON: So is your testimony here  
19 consistent with the testimony that you gave in 2010?

20 MR. MIZELL: Objection, asked and answered.

21 CO-HEARING OFFICER DODUC: Actually, it's not  
22 been asked, I don't believe.

23 Dr. Hanson?

24 WITNESS HANSON: My recollection of the  
25 testimony I presented in 2010 really went to a couple

1 of issues. One is it went to the predictability. This  
2 is consistent with that because many of the flow  
3 paradigms that were being discussed aren't functionally  
4 operating when you have a trapezoidal channel. So  
5 you're not getting that overtopping; you're not getting  
6 that floodplain inundation. You don't have the same  
7 kind of physical access in today's Delta as you would  
8 have in a different kind of a channel configuration.

9 I talked about that --

10 CO-HEARING OFFICER DODUC: Hold on, please.

11 Hold on. Everyone hold on, please.

12 I perhaps could have been clearer in my  
13 request of you, Mr. Jackson. You will have your time  
14 to cross-examine Dr. Hanson, obviously.

15 MR. JACKSON: Thank you.

16 CO-HEARING OFFICER DODUC: What I'm trying to  
17 do right now is actually complete Mr. Keeling's  
18 cross-examination. He's trying to establish a  
19 connection between Dr. Hanson's testimony and the  
20 case-in-chief testimony to which he's rebutting.

21 So when I asked whether you had any questions,  
22 it was whether or not you wanted to question Dr. Hanson  
23 about that connection between his testimony and your  
24 witness's testimony to which he allegedly is rebutting.

25 MR. JACKSON: Thank you. I will keep it to



1 that.

2 Your conclusion on Page 27, Dr. Hanson, is  
3 sort of a repetition of your summary of testimony on  
4 Page 3; is that correct?

5 WITNESS HANSON: That is correct.

6 MR. JACKSON: So in -- so in regard to the  
7 bullet point that multiple historical, physical, and  
8 hydrologic changes have shaped the current Delta, are  
9 there -- is that statement disputed in any fashion in  
10 CSPA's testimony 204, 202 at any point that you've --  
11 that you've cited here on Page 2 of your testimony?

12 CO-HEARING OFFICER DODUC: I'm not sure I  
13 understand the question.

14 MR. JACKSON: I'm going to go through these  
15 five bullet points to figure out which ones he's  
16 referring to so that I can eliminate the ones that he's  
17 not.

18 CO-HEARING OFFICER DODUC: Say that again.

19 MR. JACKSON: Yes, I was planning on asking  
20 him whether or not these issues raised regarding  
21 impacts to existing conditions, specifically, and then  
22 the CSPA citations, have anything to do with Bullet  
23 Point No. 1.

24 CO-HEARING OFFICER DODUC: All right. Let  
25 me -- again, my fault for doing this on the fly,

1 Mr. Jackson.

2 What I was hoping to address is, Doctor,  
3 looking at Page 2, Line 24, the first CSPA testimony  
4 which Dr. Hanson is rebutting is CSPA-204, Page 7, and  
5 31-32. Dr. Hanson said that -- remind me again which  
6 page in your testimony is responsive to that CSPA-204  
7 citation?

8 MR. JACKSON: The 202 citation, Page 2?

9 CO-HEARING OFFICER DODUC: 204.

10 MR. JACKSON: 204.

11 WITNESS HANSON: The 204 citation had to do  
12 with the flow survival relationships.

13 CO-HEARING OFFICER DODUC: And your response  
14 to that, your testimony responding to that is on  
15 page?

16 WITNESS HANSON: Pages 19 through 26.

17 CO-HEARING OFFICER DODUC: 19 through 26.

18 Now, for the purposes of tying Dr. Hanson's  
19 testimony to specific Part 2 case-in-chief testimony,  
20 do you have any questions relating to just that aspect?

21 I'm afraid, Mr. Keeling, I'm not helping you  
22 out too much here.

23 But I thought the purpose of Mr. Keeling's  
24 line of questioning is to make that linkage. And so  
25 I'm only interested -- at least I hope Mr. Keeling is

1 only interested right now in ensuring that Dr. Hanson's  
2 testimony indeed is responsive to the case-in-chief  
3 testimony in which he cited.

4 MR. KEELING: That's exactly right because I  
5 said before, in reference to the bullet points on  
6 Page 3, not the 2010 Flow Criteria Report.

7 CO-HEARING OFFICER DODUC: Exactly, exactly.  
8 And so I'm just -- looking for that sort of correlation  
9 right now, Mr. Jackson, I definitely will commit that  
10 you will have your time to conduct cross-examination in  
11 detail, of Dr. Hanson. Right now, I'm just trying to  
12 get through Mr. Keeling's cross-examination.

13 MR. JACKSON: Then how do you wish me to help  
14 Mr. Keeling?

15 CO-HEARING OFFICER DODUC: I assume you know  
16 better than Mr. Keeling what was in your witness's  
17 testimony and whether or not Dr. Hanson's direction to  
18 us to where his response is would be satisfactory to  
19 you.

20 I don't want you to have to go back and  
21 question again where he responded to your witnesses'  
22 testimony. Does that make sense?

23 MR. JACKSON: Yes, but you -- I began to do  
24 that.

25 CO-HEARING OFFICER DODUC: Okay.

1           MR. JACKSON: And you told me not to do that  
2 until it's my turn up because I'm trying to figure out,  
3 since there is no correspond- -- I can tell you that  
4 there is no correspondence between the exact words that  
5 we used and the points we were trying to make with  
6 those words to the way they've been used by Dr. Hanson.

7           CO-HEARING OFFICER DODUC: Understood. Is  
8 there a way anyone can think of to help us facilitate  
9 this?

10          MR. BERLINER: Well, I'm going to venture in  
11 here because I think Mr. Jackson just made the point  
12 that I believe that Dr. Hanson made earlier, which is,  
13 in my words, we're not looking for exact words. That's  
14 never been a test for rebuttal testimony.

15                 In other words, if the rebutting witness fails  
16 to use the identical words that somebody testified to  
17 on direct, that doesn't mean that the rebuttal  
18 testimony is not on point.

19                 So, for example, there was a ruling earlier  
20 that -- I shouldn't call it a ruling. There was  
21 direction earlier to not address the 2010 flow report  
22 in this back and forth; we are looking at specific  
23 instances of testimony.

24                 The 2010 flow report is mentioned by a witness  
25 on a certain page. In this case, it was the first

1 citation on Line 24 on Page 2, where, if you read that  
2 page, you will see direct reference to the 2010 flow  
3 report.

4 That does not invalidate the reference to that  
5 witness who, in turn, mentions the 2010 flow report.  
6 It's to that witness's testimony.

7 Now, a rebuttal witness is not required to  
8 quote the exact words in order to refute an argument.  
9 If the argument is made that flows are -- my words; I  
10 don't want to use Dr. Hanson's words, but my words --  
11 and is -- if you're trying to rebut testimony that flow  
12 is sufficient or flow is the primary factor to  
13 restoring fisheries, it doesn't strike me as being  
14 inappropriate rebuttal to give a complete answer to  
15 that.

16 In other words, to say, "Well, your physical  
17 situation is different today than it was when that  
18 fishery was at the height of its abundance," that would  
19 seem, to me, to be an appropriate part of your  
20 response. I don't think you have to keep your response  
21 solely to saying only flow, flow, flow. You can say,  
22 well --

23 CO-HEARING OFFICER DODUC: Mr. Berliner, I  
24 think you just muddied even more, at least for me,  
25 anyway.

1           MR. BERLINER: Well, let me see if can I say  
2 it more directly.

3           CO-HEARING OFFICER DODUC: I'm not looking for  
4 exact language.

5           MR. BERLINER: I understand.

6           CO-HEARING OFFICER DODUC: I'm looking for  
7 that connection so that we understand where in his  
8 testimony Dr. Hanson is responding to specific Part 2  
9 case-in-chief testimony from CSPA, from the other  
10 parties. That's what I'm looking for. And I think  
11 that's what Mr. Keeling is looking for as well.

12           MR. BERLINER: And to which I'm apparently  
13 inartfully trying to respond that, as Dr. Hanson did  
14 say at the beginning of his testimony, he cited a  
15 number of locations in order to support his testimony  
16 in addition to the 2010 flow report.

17           That doesn't mean, at least to me, that you  
18 can point to each and every one and say, "Okay.  
19 Precisely that citation supports which bullet in your  
20 summary?" The bullets are a culmination of at least  
21 two CSPA exhibits. You have to look at the exhibits  
22 and say, okay, what are these people saying?

23           I think it's unfair to a witness to say, "Give  
24 me the page and line number that you're responding to,"  
25 when somebody submits 10 or 20 pages of testimony

1 that's trying to make a point.

2 MR. KEELING: If I may, that is exactly the  
3 request that was made upon me -- to us. And I agree  
4 with Mr. Berliner that the test is not identical  
5 language.

6 But, on the other hand, as the Hearing  
7 Officers have ruled many times, the relationship  
8 between the case in chief being rebutted and the  
9 rebuttal testimony cannot be so attenuated or so  
10 coincide -- so incidental and offhanded.

11 For example, your reference to salinity in  
12 somebody's case in chief can't support a five-page  
13 dissertation on salinity analysis in the rebuttal.

14 So my question is is there a relationship  
15 that's not too attenuated or --

16 CO-HEARING OFFICER DODUC: Understood. Hold  
17 on. Hold on.

18 Mr. Deeringer, did you have a question?

19 MR. DEERINGER: I think I'd like to hold off  
20 for now and hear from Ms. Sheehan, if it's all right  
21 with you.

22 CO-HEARING OFFICER DODUC: Ms. Sheehan.

23 MS. SHEEHAN: No, I -- I was just trying to  
24 maybe move this along and hopefully be helpful in the  
25 process.

1 CO-HEARING OFFICER DODUC: Please.

2 MS. SHEEHAN: We had started with Dr. Hanson  
3 going to his blog site and saying, "Here's the  
4 statement made by CSPA that I'm responding to on this  
5 blog and here are the pages."

6 And then he was -- we got off track from that.  
7 So if the desire is to know where are those pages or  
8 statement that he's responding to, well, then, I think  
9 he should be given an opportunity do that.

10 Obviously there's been a lot of discussion  
11 that he hasn't done it, but he hasn't been given an  
12 opportunity to do that yet.

13 This is also something that I would suppose we  
14 could do in briefing, which might be more efficient,  
15 where he could put in writing exactly what the  
16 statement was and what page and why he thinks it's --  
17 you know, why his testimony is responsive.

18 But I mean -- or we can do it here verbally,  
19 which is I thought what we were going to do. But we  
20 seem to have gotten side tracked.

21 CO-HEARING OFFICER DODUC: Well, there's a  
22 proposal. Response?

23 MR. KEELING: I'm not sure what's being  
24 proposed. I don't know if she's proposing that we come  
25 back some other day for this. I'm not sure what's



1 being proposed.

2 I would suggest though, that, although  
3 Dr. Hanson's testimony is not surprise testimony -- we  
4 have all of the testimony.

5 But if there is to be a linkage that we don't  
6 know about that's going to be thrown at us, no; that's  
7 certainly a surprise component of his testimony that we  
8 haven't had. And, in fact, we're having this  
9 cross-examination precisely because we don't have it.

10 MS. SHEEHAN: Becky Sheehan. There's been no  
11 allegation of surprise testimony. He has the blog  
12 site. If he can be given an opportunity to speak to  
13 his blog site and to what it is responding to --

14 CO-HEARING OFFICER DODUC: Yes, but it's not  
15 currently in the record.

16 MS. SHEEHAN: It is. The blog site's in the  
17 record. It's in his testimony. It was not stricken.

18 MR. DEERINGER: I think the linkage that  
19 Hearing Officer Doduc was describing is what we're  
20 struggling with right now, if I may.

21 There's kind of a Rebuttal 2-step that we're  
22 going through here. One is to identify where in the  
23 rebuttal testimony the witness Dr. Hanson is purporting  
24 to respond to the string cite there.

25 I agree in part with Mr. Berliner that we

1 haven't had a test that, you know, there has to be this  
2 precise one-to-one linkage. However, if the response  
3 is, "Well, my testimony is holistically responsive to  
4 these points," then the step two is, "Okay. Well, now  
5 we need to find out how is it responsive." We need to  
6 kind of draw that out.

7           And I think my understanding of the Hearing  
8 Officers' ruling and attempt to kind of draw this out  
9 now is that that's the linkage that we're struggling  
10 with. That's the linkage we're missing.

11           If it's holistically responsive to that string  
12 cite, how is it responsive? Because otherwise it is,  
13 while useful in its own right, it's kind of stand-alone  
14 testimony.

15           And there is kind of a -- there's a procedural  
16 fairness technicality aspect to this linking of the  
17 rebuttal to case-in-chief testimony. But there's also  
18 a more substantive reason why we're doing this. It's  
19 that there's this whole host of different issues in  
20 this hearing -- if you'll allow me --buckets of issues.  
21 And when the evidentiary record closes, part of our  
22 task is going to be to sort testimony and other  
23 evidence into those buckets.

24           So if we're looking at the Part 2  
25 case-in-chief testimony from Mr. Keeling's clients

1 belongs in one bucket, does your testimony belong in  
2 that same bucket, or does it belong somewhere else?

3           That's part of the issue. So there is an  
4 actual subjective reason why making that connection  
5 adds important context to your testimony and allows the  
6 Hearing Officers to understand better. So just with  
7 that, I guess I'll turn it back over to the  
8 Hearing Officer.

9           CO-HEARING OFFICER DODUC: Actually, thank  
10 you. You articulated that very well.

11           MR. BERLINER: So are we going to entertain a  
12 motion for reconsideration of the Board's ruling? I  
13 mean, where does this lead?

14           I'm really confused because we got a ruling from  
15 the Board in response to a motion that was stated that,  
16 "We reviewed every single cite, and we could not find  
17 the relationship." And the Board's ruled on that.

18           CO-HEARING OFFICER DODUC: No. I'll let the  
19 lawyer talk. No.

20           MR. DEERINGER: So -- and this may be our  
21 fault for not artfully crafting a ruling.

22           What happened with the strike-outs was those  
23 were the instances where the Hearing Officers and the  
24 hearing team thought, "This clearly -- we don't find  
25 this relationship."

1           The citations where there wasn't a strike-out,  
2 it was the subject of the motion but the Hearing  
3 Officers decided not to strike it out, that was --  
4 those were sometimes instances where we just weren't  
5 sure. The linkage may be there, may not be there. And  
6 we thought it was more important for the parties' own  
7 advocates to test that on cross-examination than for us  
8 to make that decision.

9           So the fact that it wasn't struck out is not  
10 an affirmative statement by the Hearing Officers that  
11 that linkage definitely exists.

12           CO-HEARING OFFICER DODUC: Correct.

13           Mr. Bezerra.

14           MR. BEZERRA: I hesitate to wade into these  
15 waters, but I have a suggestion I think might be  
16 useful.

17           The string cite that Dr. Hanson provided in  
18 his testimony is to a variety of CSPA exhibits that  
19 cite a number of pages. And then, if you look at those  
20 CSPA exhibits, they cite all sorts of documents. It  
21 might be useful to go to the CSPA exhibit and ask  
22 Dr. Hanson to explain how he's responding to the  
23 various statements made in there because what you've  
24 got is this weird thing --

25           CO-HEARING OFFICER DODUC: That's sort of what

1 we were doing, Mr. Bezerra.

2 MR. BEZERRA: Okay. That's why I hesitated to  
3 wade in.

4 CO-HEARING OFFICER DODUC: I think what I'm  
5 going to do is, Mr. Keeling, since you started this,  
6 I'm just going to hand it back to you. I think we  
7 understand what you're trying to accomplish and  
8 certainly support that. I don't know of a better way,  
9 more efficient way to do it. And so I'm just going to  
10 let you go at it, Mr. Keeling.

11 MR. KEELING: Thank you, I think.

12 CO-HEARING OFFICER DODUC: Thank you,  
13 Mr. Jackson.

14 MR. KEELING: For the record, I have not made  
15 any motion for reconsideration. If, at the end of this  
16 exercise, I believe that the relationship between  
17 Dr. Hanson's testimony and the testimony that he claims  
18 to be rebutting is too attenuated or nonexistent, then  
19 I may renew the motion as to that particular citation.

20 CO-HEARING OFFICER DODUC: And that would be  
21 fair.

22 MR. KEELING: Dr. Hanson, going back to the  
23 question Chair -- Hearing Officer Doduc asked you  
24 about, the first citation on Page 2 of your testimony,  
25 which was to CSPA-204, Pages 7 and 31 through 32, I

1 believe you gave some answers, although I don't believe  
2 you pointed out that there is no Page 32 at all in  
3 CSPA-204. Is there a Page 32 there?

4 WITNESS HANSON: I don't believe that there  
5 is.

6 MR. KEELING: All right. So are you -- have  
7 you completed your answer with respect to how your  
8 testimony rebuts testimony at Pages 7 and 31 of  
9 CSPA-204?

10 WITNESS HANSON: We didn't talk about Page 31,  
11 but it might be helpful if I gave an illustration of  
12 how this was put together.

13 CO-HEARING OFFICER DODUC: I'm not touching  
14 this.

15 MR. KEELING: I'm not sure what you mean by  
16 "an illustration." I do -- I do see that your list of  
17 protestant citations that you claim to be rebutting is  
18 pretty much the same as Dr. Hutton's list.

19 So are you talking about methodology  
20 internally as to how you came up with that list?

21 WITNESS HANSON: No. I just -- I wanted to  
22 provide an example that would help better illustrate  
23 the linkage between, in this example, CSPA-204,  
24 Page 12, and -- one, two -- my third bullet.

25 MR. KEELING: To Page 12?

1 CO-HEARING OFFICER DODUC: Page 12?

2 MR. KEELING: That's not cited. Now this is  
3 surprise testimony.

4 WITNESS HANSON: I was just looking up my list  
5 in here.

6 MR. KEELING: I'm not prepared to go there. I  
7 have --

8 WITNESS HANSON: Okay.

9 CO-HEARING OFFICER DODUC: We're looking at  
10 Page 2.

11 WITNESS HANSON: On Page 2.

12 CO-HEARING OFFICER DODUC: Line 24, correct,  
13 Mr. Keeling?

14 MR. KEELING: Correct.

15 WITNESS HANSON: Okay. No. On mine, I have a  
16 CSPA-204, Page 12 is one of the linkages, but it isn't  
17 on Page 2.

18 MR. KEELING: I'm reading, as is Hearing  
19 Officer Doduc, I'm reading CSPA-204, Pages 7 and 31  
20 through 32.

21 WITNESS HANSON: Correct.

22 MR. KEELING: I'm not reading any other page.  
23 There's no Page 12 or anything else in there.

24 WITNESS HANSON: No. I have a different list  
25 is all.

1           MR. KEELING: Okay. I'm asking you about  
2 those specific pages and where in your testimony you  
3 rebut the testimony on those pages of CSPA-204.

4           WITNESS HANSON: We've already talked about  
5 Page 7. May I see Page 31?

6           Again, this has to do with the first bullet  
7 that's referring to a flow survival and flow abundance  
8 relationship. And if you look at my graph on flow  
9 survival, the line in this, "Recognizing that wet years  
10 typically produce ten times the fish as dry years,"  
11 that's a pretty specific prediction. And the data that  
12 I've looked at from my studies as well as other studies  
13 doesn't support that level of predictability.

14          CO-HEARING OFFICER DODUC: And where in your  
15 testimony might we find that?

16          WITNESS HANSON: There's a discussion of the  
17 variability and the lack of predictive power in many of  
18 these relationships that starts on Page 20 and goes  
19 through Page 23.

20          CO-HEARING OFFICER DODUC: I turn it back to  
21 you, Mr. Keeling.

22          MR. KEELING: Yes. And I appreciate,  
23 Dr. Hanson, I did review those pages.

24          Do you have any further testimony about the  
25 linkage you want to make between your testimony and



1 CSPA-202 [sic], Pages 7 and 31?

2 WITNESS HANSON: No, I think I'm complete.

3 CO-HEARING OFFICER DODUC: And we're in  
4 agreement that there is no Page 32, and that should be  
5 deleted from your testimony?

6 WITNESS HANSON: That should be.

7 MR. KEELING: I can do this at the end, or I  
8 can do it piece by piece.

9 CO-HEARING OFFICER DODUC: Let's do it at the  
10 end, Mr. Keeling.

11 MR. KEELING: Okay. Let's move on to the  
12 second source you cited, Line 24 of your testimony,  
13 Dr. Hanson, that's CSPA-202-Errata. The first cite is  
14 Pages 7 through 8, but then you'll see it continues on  
15 the next line to Page 9, to Page 10 and 11, and to  
16 11 and 12.

17 So let's look at CSPA-202-Errata, Pages 7  
18 through 12 as a block. Can you -- can we do that? Is  
19 that okay with you?

20 WITNESS HANSON: Yes.

21 MR. KEELING: My question to you is the same  
22 as Hearing Officer's Doduc's testimony [sic] with  
23 respect to CSPA-204. And that is where in your  
24 testimony do you rebut the testimony given in  
25 CSPA-202-Errata, Pages 7 through 12?

1 WITNESS HANSON: Mr. Hunt, could we see  
2 Page 11?

3 CO-HEARING OFFICER DODUC: And is this Page 11  
4 of CSPA-202, or of your testimony?

5 WITNESS HANSON: No, of CSPA-202-Errata.

6 MR. KEELING: And I would note for the record  
7 that that portion of Mr. Shutes' testimony in  
8 CSPA-202-Errata is labeled as the heading "Analysis and  
9 Recommendations by the Fisheries Agencies in the 2010  
10 Delta Flow Criteria Informational Proceeding."

11 WITNESS HANSON: And this was a section of  
12 Mr. Shutes's testimony that discusses that flow  
13 survival relationship.

14 MR. KEELING: Anything more particular about  
15 the relationship between this part of Mr. Shutes'  
16 testimony and your testimony as distinguished from the  
17 relationship between the 2010 report and your  
18 testimony?

19 MR. BERLINER: You know -- this -- Mr. Shutes  
20 made a point in his testimony towards the beginning. I  
21 don't have the testimony right in front of me.

22 CO-HEARING OFFICER DODUC: Mr. Berliner, is  
23 there an objection?

24 MR. BERLINER: Yes.

25 CO-HEARING OFFICER DODUC: You're not

1     testifying or answering for Dr. Hanson.

2                 MR. BERLINER:  Yes.  I think that -- you know  
3     what?  Strike it.  I won't make the objection.

4                 CO-HEARING OFFICER DODUC:  Mr. Berliner,  
5     Mr. Mizell, your witness included the citation to which  
6     he claims to be rebutting.  Mr. Keeling is within his  
7     rights to go through them because of the lack of  
8     specific linkage in Dr. Hanson's testimony.

9                 This will take time.  I apologize to  
10    Mr. Obegi.  I don't think we will get to you today.  
11    But, again, in fairness to all the parties and in  
12    interest of ensuring clarity and better understanding  
13    of Dr. Hanson's testimony, we are going to do this.  
14    All right.

15                MR. JACKSON:  If I could, I -- I am presently  
16    scheduled to be in town tomorrow.  I could start  
17    tomorrow morning to let Mr. Obegi, who is here, kind of  
18    step in front of me, if that's all right.

19                CO-HEARING OFFICER DODUC:  That's fine.  I  
20    just don't know how long this is going to take  
21    Mr. Keeling.

22                MR. KEELING:  Wow, it looks like Mr. Hunt put  
23    52 minutes up there.

24                CO-HEARING OFFICER DODUC:  When you started  
25    again, I told him to give you the one hour that we

1 afford to all cross-examiners. So that's where you  
2 are. But proceed, Mr. Keeling.

3 MR. KEELING: Okay. As I recall, my question  
4 was where in your testimony do you rebut the testimony  
5 in CSPA-202-Errata, Pages 7 through 12?

6 WITNESS HANSON: Mr. Hunt, could you scroll  
7 down just a little bit?

8 This bottom paragraph on Page 11 that starts,  
9 "CDFW summarizes its recommendation in a flow table on  
10 Pages 105-107 of its November 10, 2010 Quantifiable  
11 Biological Objectives and Flow Criteria Document," and  
12 it continues, again, that is a document that's a  
13 recommendation that was flow alone.

14 And my rebuttal is that we're finding more and  
15 more that flow alone doesn't accomplish our objective.

16 MR. KEELING: Two questions.

17 Following up, if I may. One, did Mr. Shutes,  
18 in CSPA-202-Errata, testify that flow alone would be  
19 sufficient to restore the Delta?

20 WITNESS HANSON: Mr. Shutes did not testify to  
21 that specifically. But he did include the citation of  
22 this table and the recommendation of 20- to 30,000 cfs  
23 at Rio Vista in April and May, which is basically a  
24 flow alone.

25 MR. KEELING: And do I understand correctly

1 that you are rebutting the 2010 flow report in that  
2 respect?

3 WITNESS HANSON: I was rebutting --

4 MR. BERLINER: Objection, that question is  
5 vague and ambiguous.

6 MR. MIZELL: And misstates the witness's  
7 answer.

8 MR. KEELING: Do I correctly understand that  
9 you are responding to these -- your understanding of  
10 what the 2010 flow report says?

11 MR. BERLINER: Objection, he already stated  
12 he's citing the testimony that's in front of us on the  
13 screen.

14 CO-HEARING OFFICER DODUC: Help me understand  
15 a distinction, Mr. Keeling.

16 MR. KEELING: Mr. Shutes merely pointed out  
17 what the 2010 flow report says.

18 CO-HEARING OFFICER DODUC: Yes.

19 MR. KEELING: He didn't testify about it. He  
20 didn't make any statements based thereon. And the  
21 testimony from Dr. Hanson simply refutes the 2010 flow  
22 report, which is fine. I've already said that's fine.  
23 But I want to see what testimony of Mr. Shutes he's  
24 testi- -- he's rebutting.

25 CO-HEARING OFFICER DODUC: Overruled.

1 Dr. Hanson, please answer.

2 WITNESS HANSON: I was not, in this particular  
3 instance, rebutting the 2010 flow report from the State  
4 Board. This is a California Department of Fish and  
5 Wildlife document.

6 CO-HEARING OFFICER DODUC: Are you now  
7 rebutting the California Department of Fish and  
8 Wildlife?

9 WITNESS HANSON: No, I'm rebutting that  
10 Mr. Shutes included this in his testimony with no  
11 additional discussion that, above and beyond this set  
12 of specific flow recommendations, other actions would  
13 also very likely be necessary to accomplish a survival  
14 objective.

15 CO-HEARING OFFICER DODUC: You have an answer,  
16 Mr. Keeling. Please move on.

17 MR. KEELING: I have an answer.

18 Let's move on to -- by the way, so that I  
19 don't catch anybody unawares up there where, in my  
20 view, the relationship between the protestants'  
21 testimony being cited and Dr. Hanson's testimony is too  
22 attenuated, I will make a motion to renew as to that  
23 cite.

24 CO-HEARING OFFICER DODUC: I understand.

25 MR. KEELING: Okay. You understand.

1 CO-HEARING OFFICER DODUC: I understand. At  
2 the end, please, otherwise we'll be here even longer.

3 MR. KEELING: Let's move on, Dr. Hanson, to  
4 the next citation on Page 2 of your testimony, which is  
5 to NRDC-58-Errata at Pages 4 through 24.

6 Do you see that?

7 WITNESS HANSON: I do.

8 MR. KEELING: My question of you is which --  
9 where in your testimony do you rebut NRDC -- that  
10 NRDC-58-Errata at those pages?

11 WITNESS HANSON: Mr. Hunt, could we bring up  
12 NRDC-58 document at Page 19.

13 CO-HEARING OFFICER DODUC: Dr. Hanson, is  
14 there a particular reason you asked for Page 19? Your  
15 citation is Pages 4 through 24.

16 WITNESS HANSON: Because I have specific  
17 reference in my notes to one of my bullets.

18 CO-HEARING OFFICER DODUC: Okay.

19 WITNESS HANSON: What I was trying to do was  
20 link these closer to the bullets.

21 In my fourth bullet in my summary on Page 3, I  
22 point out that the relationship between flow and  
23 survival is uncertain, that there's high variability  
24 but a general trend.

25 On Page 19 of NRDC Errata [sic], there's a

1 section specifically talks about the impacts flow  
2 reduction will have on salmon survival as if it were a  
3 pretty certain kind of a relationship.

4 MR. KEELING: Is it your contention that, at  
5 NRDC-58-Errata, Page 19, the author, a Dr. Rosenfeld,  
6 asserted certainty in that relationship?

7 WITNESS HANSON: I don't believe there's any  
8 discussion of uncertainty.

9 MR. KEELING: Where else in NRDC-58-Errata,  
10 Pages 4 through 24 does your testimony respond besides  
11 Page 19, at least as you've characterized it?

12 WITNESS HANSON: Mr. Hunt, could we just kind  
13 of scroll through those pages?

14 There was a whole section from Page 4 through  
15 24; there were a number of statements that were made in  
16 that section that talked about the adverse impacts that  
17 a reduction in flow would have on survival.

18 MR. KEELING: Any further?

19 WITNESS HANSON: Again, there was no  
20 discussion of the level of uncertainty or how, in many  
21 cases, the predictions that have been made that a  
22 particular change in flow will result in a particular  
23 response of a salmon population.

24 And I provide some examples in my testimony  
25 where we had high flows that you would predict would be



1 good for salmon, and the subsequent abundance in the  
2 ocean was low and, correspondingly, low periods of flow  
3 when abundance in the ocean was high.

4 MR. KEELING: Thank you. Does that conclude  
5 your response with respect to NRDC-58-Errata at Pages 4  
6 through 24?

7 WITNESS HANSON: It does.

8 MR. KEELING: Mr. Hunt, could we have the next  
9 citation, which is to the April 11, 2018 transcript  
10 Volume 28 pages -- I'll start with Page 24.

11 Dr. Hanson, do you see there on the bottom of  
12 Page 2 of your testimony that your next citation of  
13 testimony that you are rebutting is to the April 11,  
14 2018 transcript at Page 24 and then Pages 111 through  
15 112.

16 WITNESS HANSON: I do see that.

17 MR. KEELING: Can you tell me where in your  
18 testimony, you rebut statements made by witness  
19 Mr. Baxter at Page 24 of that transcript?

20 WITNESS HANSON: Again, this -- in this  
21 discussion, Mr. Baxter is pointing out that he  
22 developed a conceptual model that looked at various  
23 covariants, and they identified through this discussion  
24 that flow was the number one driver that he identified  
25 in that conceptual model.

1           And in this particular -- for example, on  
2 Lines 12 and 13, he talks about primarily because it's  
3 kind of an overarching driver and doesn't have a lot of  
4 discussion on other factors that mediate or affect that  
5 relationship.

6           MR. KEELING: Can you show me where in your  
7 testimony you rebut this section of Dr. Rosenfeld's  
8 testimony?

9           WITNESS HANSON: Well, this is --

10          CO-HEARING OFFICER DODUC: Mr. Baxter.

11          MR. KEELING: Yes, yes, Mr. Baxter's. I'm  
12 sorry.

13          WITNESS HANSON: I think in my particular  
14 testimony it begins on Page 4 and continues through  
15 Page 6, where I'm talking about habitat changes and  
16 other stressors.

17          MR. KEELING: Dr. Hanson, I notice on Page 24  
18 of Mr. Baxter's testimony, that he talks about, yes,  
19 flow is an overarching consideration, but he talks  
20 about turbidity, temperatures, salinity, gradient, and  
21 so on. You're not contending that Mr. Baxter ever said  
22 that flow and flow alone could restore the Delta, did  
23 he?

24          WITNESS HANSON: Mr. Baxter did not say that.

25          MR. KEELING: Did Mr. Baxter ever say that

1 multiple physical and hydrologic changes over time have  
2 not shaped the current Delta?

3 WITNESS HANSON: I don't believe -- at least I  
4 don't recall that from the transcript.

5 MR. KEELING: Thank you.

6 Let's turn now to the next pages from  
7 Mr. Baxter that you cite which are Pages 111, and 112.  
8 Can you tell me where in your testimony you rebut  
9 Mr. Baxter's testimony from April 11 at Pages 111 and  
10 112?

11 WITNESS HANSON: Can we bring those up,  
12 Mr. Hunt?

13 Again, this is a discussion that Mr. Baxter  
14 had regarding his conceptual model and whether he had  
15 updated that as new information became available. And  
16 I think he said in here he did not but that he  
17 continued to think flow was the primary overarching  
18 driver.

19 MR. KEELING: And where in your testimony do  
20 you rebut that testimony on Pages 111 and 112?

21 WITNESS HANSON: Just when I have the  
22 discussion about the variability inherent in that flow  
23 relationship, that I didn't see the strong signal that  
24 Mr. Baxter saw.

25 MR. KEELING: Anything else in your testimony

1     rebut these?

2                   WITNESS HANSON:  I think the general flow of  
3     this.

4                   MR. KEELING:  Looking back at Page 2 of your  
5     testimony, the next source you cite is the April 16,  
6     2018 transcript, Volume 29, Pages 19 through 20.

7                   And Mr. Hunt, that's 19 -- Page 19, Line 9  
8     through Page 20, Line 18.

9                   And also you cite Pages 22 and Pages 24.  Do  
10    you see that?

11                   WITNESS HANSON:  Yes, I do.

12                   MR. KEELING:  So let's turn to that.  That  
13    was, I believe, the examination of Dr. Oppenheim --  
14    Mr. Oppenheim?

15                   WITNESS HANSON:  I believe it was, yes, for  
16    PCFFA.

17                   MR. KEELING:  Referring first to Page 19,  
18    Line 9 through Page 20, Line 18, can you explain what  
19    part of your rebuttal testimony responds to that  
20    testimony?

21                   WITNESS HANSON:  For example, on Line 9 or  
22    starting with Line 9, and reads:

23                                   "The National Marine  
24                                   Fishery Service BiOp states  
25                                   that the reduction in flows

1                   from the North Delta Diversions  
2                   would increase travel times and  
3                   have an adverse effect to a  
4                   high proportion of rearing  
5                   outmigrating fall-run Chinook  
6                   Salmon."

7                   In my testimony, in Figures 9 and 10 on  
8 Page 26, I specifically examined that relationship  
9 using the Fish and Wildlife Service data that I had,  
10 where I'm looking at the relationship between transit  
11 time and Sacramento River flow.

12                  MR. KEELING: It's your contention that these  
13 diagrams on Page 26 of your testimony rebut this  
14 testimony from Mr. Baxter?

15                  MR. BERLINER: Objection, asked and answered.

16                  CO-HEARING OFFICER DODUC: I think it's  
17 helpful to get clarity at this point, Mr. Berliner.  
18 Overruled.

19                  WITNESS HANSON: The statement that was  
20 included in the transcript was pretty specific and  
21 pretty emphatic. And it said a reduction in flow will  
22 result in an increase in travel times that will have  
23 adverse effects.

24                  So if that were to be the case, I would have  
25 expected to see more of a relationship between flow and

1 transit time that would have been biologically  
2 significant. And these data show that there's a very  
3 slight relationship but there's extremely high  
4 variability.

5 MR. KEELING: Anything else in response to  
6 these two pages from Mr. Baxter?

7 WITNESS HANSON: No, I think that was the  
8 primary point I was making through these graphs, so I  
9 wanted to test that hypothesis.

10 MR. KEELING: Let's go to your next cite to  
11 Mr. Baxter's testimony, Pages 22, Lines 10 through 18,  
12 which, as I recall, was a recommendation that he made  
13 in his testimony. Do you have that part of his  
14 testimony in front of you?

15 WITNESS HANSON: I don't. I've got what's on  
16 the screen.

17 MR. KEELING: Yes, Lines 10 through 18, I  
18 believe. Yes. Yes.

19 Do you have that?

20 WITNESS HANSON: I don't have it but -- I have  
21 it up here.

22 MR. KEELING: You can see it. What part of  
23 your testimony rebuts Mr. Baxter's recommendation that  
24 he made to the Board at the hearing that day?

25 WITNESS HANSON: These lines have a specific

1 recommendation that there be at least 20,000 cfs as  
2 Freeport and 25,000 cfs bypass flow requirement at  
3 Rio Vista. And when I look at the graphs, I don't see  
4 a threshold where there's a change in survival rates at  
5 20- or 25,000 cfs.

6 MR. KEELING: Anything more specific that you  
7 want to refer to where you rebut this testimony?

8 WITNESS HANSON: I think that's what I was  
9 responding to in these specific lines.

10 MR. KEELING: Let's go -- Mr. Hunt, let's go  
11 to Page 24, Lines 12 through 19, which is the next bit  
12 of testimony you cite on Page 2.

13 Do you have that up -- I believe it's on the  
14 screen.

15 WITNESS HANSON: Yes.

16 MR. KEELING: And my question is the same  
17 question. We're looking at Page 24 of this transcript,  
18 and I'd like to know what part of this section your  
19 testimony rebuts and where in your testimony you rebut  
20 it?

21 WITNESS HANSON: Okay. This is a summary  
22 conclusion that he's making in his testimony. And he's  
23 basically saying that they request that the flow  
24 criteria described in my testimony for more protective  
25 criteria for other estuarine species be made part of

1 the permits for the State Water Project and Central  
2 Valley Project, regardless of whether the Board  
3 approves this WaterFix project or this change petition.

4 And that, to me, read as this is a  
5 flow-specific prescription. And in my testimony, I  
6 basically say I don't see the evidence that a flow  
7 prescription, in and of itself, will necessarily create  
8 the conditions that contribute to increased survival.

9 And we had an example. For example, we have  
10 just recently gone through drought. Survival of  
11 fall-run Chinook coming out of the San Joaquin River  
12 system but through the Delta in those dry years ranged  
13 from 0 to 5 percent.

14 2011 was an extremely wet year, and you would  
15 have expected the survival to increase substantially if  
16 this paradigm were true. Survival in that year was  
17 2 percent, right in the middle of the range.

18 MR. KEELING: Is that all?

19 WITNESS HANSON: Yes.

20 MR. KEELING: Okay. And, finally, let's turn  
21 to PCFFA-145.

22 Now here, Hearing Officer Doduc -- and I  
23 apologize, I'm a bit at sea.

24 PCFFA-145 is a February 16, 2010 testimony  
25 submitted in the 2010 Delta flow criteria hearing or



1 proceeding. It is very lengthy. I have no way to ask  
2 the witness what passage in here his testimony purports  
3 to rebut because it's very lengthy; although I have  
4 read this.

5 CO-HEARING OFFICER DODUC: Why don't you try  
6 asking him and see what he says.

7 MR. KEELING: What part of PCFFA-145 did you  
8 intend to rebut by putting this citation in your  
9 testimony?

10 WITNESS HANSON: This testimony again went, as  
11 my recollection, to specific flow recommendations with  
12 no real recognition that other stressors are also  
13 important. And so it's basically a flow-alone kind of  
14 recommendation.

15 And my testimony clearly says flow alone isn't  
16 likely to accomplish the biological goals and  
17 objectives for recovery or protection of salmonid  
18 stocks in the Central Valley.

19 MR. KEELING: In your fifth bullet point on  
20 Page 3 of your testimony, you do use the phrase "flow  
21 alone" twice. "Multiple authors have concluded that  
22 flow alone cannot be used to restore the Delta," and  
23 then later you say, "Buchanan, et al. also concluded  
24 that increased flow alone," et cetera, "will not be  
25 sufficient to resolve the low salmonid survival in the

1 Delta."

2 Is this a document that you were rebutting  
3 when you gave that opinion?

4 WITNESS HANSON: These were not a -- these  
5 were elements where individuals in the exhibits and in  
6 the testimony were basically saying, "I recommend that  
7 these flows be included," with no acknowledgement or  
8 recognition that there may need to be a variety of  
9 other sources of stress also addressed in order to have  
10 those flows be effective.

11 MR. KEELING: Well, wouldn't that be true of  
12 any discussion that's focused on flow?

13 WITNESS HANSON: It was not explicit in many  
14 of these statements.

15 MR. KEELING: Are you aware of any statement  
16 in any of the testimony you cited at the bottom of  
17 Page 2 in which the author said that flow alone will be  
18 sufficient to restore the Delta?

19 WITNESS HANSON: Not that they specifically  
20 said that flow alone would accomplish this. But they  
21 also, on the flip side, didn't go on and say, "For this  
22 flow to be effective, we're also going to need a  
23 variety of other actions."

24 MR. KEELING: Are you aware of any statement  
25 in any of the testimony you cite at the bottom of

1 Page 2 where the witness or author said that  
2 historical, physical, and hydrologic changes have not  
3 shaped the Delta?

4 WITNESS HANSON: I'm not aware that that was  
5 said explicitly.

6 MR. KEELING: But that is really the first two  
7 points, bullet points, on Page 3 of your testimony in  
8 which you summarize your opinions, is it not?

9 WITNESS HANSON: It is, although there are  
10 statements that the SWP and CVP have been the major  
11 drivers of habitat conditions in the Delta and that  
12 much of the deterioration of habitat, much of the  
13 reduced survival and productivity is a result of the  
14 water project operations without going the next step  
15 and saying there have been, in that context, many, many  
16 other factors that have also influenced those  
17 relationships.

18 MR. KEELING: Hearing Officer Doduc, I very  
19 much appreciate your patience. I apologize for how  
20 long this has taken.

21 I have no further questions. You've listened  
22 to the questions. You've listened to the testimony.

23 At this time, I renew the motion to strike.  
24 And I need to be very clear, I'm not asking that he  
25 strike his testimony about the 2010 report. I'm asking

1 the Hearing Officers to strike the references to  
2 protestant's testimony as well as to the exhibit cited,  
3 the 2010 report that's cited.

4 CO-HEARING OFFICER DODUC: Mr. Keeling, hold  
5 on. Let's be very specific. Are you looking at  
6 Page 2?

7 MR. KEELING: Yes, bottom of Page 2 of  
8 Dr. Hanson's testimony, I would like to strike,  
9 starting at -- you know, the reference to CSPA-204, I'd  
10 like to strike everything from that all the way to the  
11 end of that sentence, "PCFFA-145."

12 And the ground for my motion to strike is  
13 that, now that we have heard the explanation as to why  
14 he thinks his testimony rebuts those -- those sections,  
15 that testimony, I respectfully submit that the  
16 relationship is so attenuated as to not pass the test  
17 that this Board has in fact applied before on motions  
18 to strike rebuttal testimony.

19 And in addition, I would like to strike the  
20 sentences at Page 3, Lines 15 through 18 --

21 CO-HEARING OFFICER DODUC: Let's hold on until  
22 we can see that, please, Mr. Keeling.

23 So that would be the first two bullets?

24 MR. KEELING: And I -- you may want to -- you  
25 may want to reexamine or have more testimony, but the

1 witness has not identified any protestants' witness who  
2 has said such -- such things to which this would be  
3 rebuttal.

4 CO-HEARING OFFICER DODUC: Anything else you  
5 are moving to strike, Mr. Keeling?

6 MR. KEELING: I want to be -- this is a more  
7 delicate one, but will you look at his fifth bullet  
8 point at the bottom of Page 3.

9 Typically, when you say -- you say, "I am  
10 going to rebut somebody's testimony," and in your  
11 rebuttal, you say, "Flows alone are not enough to  
12 restore the Delta," what you mean is that somebody said  
13 they were, and you're rebutting that.

14 He has not be able to cite a single witness  
15 who said that. I would like to strike that bullet  
16 point as well.

17 CO-HEARING OFFICER DODUC: And you don't agree  
18 with his point that, by omitting and not considering  
19 other factors, it's sort of inferring that flow alone  
20 is the important factor?

21 I'll remind you of your own sin-of-omission  
22 argument.

23 MR. KEELING: Yes, yes, indeed. It's a matter  
24 of scale. If I bring in a witness who testifies for  
25 half a day on flow and not about salinity, that doesn't

1 justify somebody coming in in rebuttal and presenting a  
2 dissertation on salinity because, in the first  
3 objection, that doesn't rebut anything a witness said.

4 CO-HEARING OFFICER DODUC: All right. Hold on  
5 Ms. Morris. I would prefer to hear from all those  
6 supporting Mr. Keeling's motion first.

7 MS. MESERVE: I support the motion. A point  
8 of clarification, I would understand the motion to  
9 include the testimony that goes with those bullet  
10 points as well.

11 CO-HEARING OFFICER DODUC: That would be  
12 harder, since it also might apply to the flow criteria  
13 report.

14 MR. KEELING: It was so difficult, I  
15 appreciate Mr. Meserve's comment. I tried very hard to  
16 find the testimony corresponding to the bullet points,  
17 and I couldn't.

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

19 MS. DES JARDINS: I support Mr. Keeling's  
20 motion.

21 CO-HEARING OFFICER DODUC: Mr. Jackson.

22 MR. JACKSON: I also support Mr. Keeling's  
23 motion on behalf of my clients and would like to point  
24 out that, in Bullet 5, what they are clearly rebutting  
25 is the NAS exhibit not having anything to do with any

1 testimony except as a reference.

2 I think one of the things to keep -- to keep  
3 in mind is that much of this testimony was quite  
4 appropriate for their case in chief. But it certainly  
5 is going to require an awful lot of rebuttal because  
6 it's brand-new at this stage. And I think it's going  
7 to take up a lot of time, and I think that's something  
8 you ought to consider in ruling on the motion.

9 CO-HEARING OFFICER DODUC: All right. Let's  
10 hear response. And I'll start with the witness's own  
11 attorney, Ms. Morris, if that is okay with you.

12 Mr. Mizell, Mr. Berliner?

13 MR. MIZELL: Certainly. I believe the  
14 Department would obviously oppose the motion to strike.  
15 It's based primarily on the exercise we've just gone  
16 through where Dr. Hanson has explained that he is  
17 responding directly to the omission of other factors  
18 that should be considered.

19 This is not unlike the testimony of  
20 Mr. Stroshane and a number of other witnesses yesterday  
21 where the basis of their rebuttal testimony was the  
22 absence of an analysis contained in the Department's  
23 case in chief.

24 And if we recall those objections that we had,  
25 they were overruled because the absence of the material

1 was responsive to our rebuttal -- or, I mean, our case  
2 in chief.

3 So along those same lines here, to the extent  
4 that Dr. Hanson has indicated he believes that it's an  
5 incomplete view of the information being presented by  
6 these witnesses, that's an appropriate rebuttal.

7 CO-HEARING OFFICER DODUC: Let me make sure I  
8 understand, Mr. Mizell. That last rationale, that last  
9 point you articulated, that was in response to  
10 Mr. Keeling's motion to strike that fifth bullet or --  
11 I'm sorry, on Page 3, the first two bullets and fifth  
12 bullet, right?

13 MR. MIZELL: This is actually to all of it.  
14 The citations that we went through almost exclusively  
15 do attempt to sway you into setting flow criteria that  
16 are based upon the 2010 Flow Criteria Report. That is  
17 the gist of those testimonies. To argue otherwise, I  
18 don't believe, would be a particularly straightforward  
19 approach to what was written.

20 So to the extent that those testimonies are  
21 arguing that the 2010 Flow Criteria Report is the  
22 appropriate basis for conditions on this project, the  
23 implication of that is most definitely that you should  
24 consider that above any other factors. And the 2010  
25 Flow Criteria Report itself recognizes there are other



1 factors that are not considered within its -- within  
2 its bookends.

3           So we would be responding to the omission of  
4 all of those other factors in the testimony of all of  
5 those citations when they argue for imposing the 2010  
6 Flow Criteria Report like flows on this project.

7           CO-HEARING OFFICER DODUC: All right.

8           Ms. Morris.

9           MS. MORRIS: First I'd like to note that the  
10 fifth bullet point is not rebutting the NAS report,  
11 rather it's citing, like most scientists do, to a  
12 citation supporting his opinion. So it is not  
13 rebutting but rather it's using it as a citation to  
14 rebut other evidence.

15           I would also object to -- or oppose the  
16 motion -- and again, if we could pull up  
17 CSPA-202-Errata, which is listed, just as an example,  
18 on Page 8, looking at specifically Lines 11 through 15,  
19 this opens up for rebuttal anything and everything that  
20 is in both the 2010 Flow Criteria Report as well as  
21 SWRCB-66.

22           It says on Line 11, "All of these documents  
23 contain extensive analysis and recommendations that  
24 have merit. I have summarized some of the findings  
25 below." It brings into this testimony every analysis

1 and opinion and -- in both of those documents which  
2 Dr. Hanson has walked through and shown how he is  
3 rebutting.

4           So I would oppose the motion to strike the  
5 citations.

6           CO-HEARING OFFICER DODUC: Final response,  
7 Mr. Keeling.

8           MR. KEELING: Yes. Well, I think when you  
9 look at the language used by Mr. Mizell, a very able  
10 attorney, he quoted -- he said "that is the gist of  
11 these testimonies," unquote, the gist. And he's  
12 talking about the 2000- -- the gist being that you  
13 should consider the flows of the 2010 flow report and  
14 so on.

15           Ms. Morris said, and I'm quoting, that this  
16 reference from CSPA-202, quote, "opens up for rebuttal  
17 anything and everything," end of quote, in those  
18 documents referred to.

19           I would refer to this Board's own prior  
20 rulings on motions to strike and objections during  
21 rebuttal that the rebuttal testimony is too tenuously  
22 related to the cited case in chief to be accepted as  
23 rebuttal. And I respectfully submit that that's the  
24 case here, and I stand on my motion.

25           CO-HEARING OFFICER DODUC: All right. It's

1 time for a break anyway. So we will take that  
2 opportunity to consider the motion. We will return  
3 when we return.

4 (Recess taken)

5 CO-HEARING OFFICER DODUC: All right. We are  
6 back. There's Mr. Keeling.

7 After much deliberation of Mr. Keeling's  
8 motion and all the responses, we decided that we need  
9 additional deliberations. So, Mr. Keeling, we will  
10 take your motion and all the various responses to it  
11 under advisement.

12 MR. KEELING: I appreciate that very much.  
13 And just in advance, I don't want to show any  
14 disrespect. If you make a ruling tomorrow, I won't be  
15 here. It's not that I don't respect this tribunal.  
16 It's that I have a proceeding I must be at in  
17 San Joaquin County. So -- but I would get a  
18 second-hand report.

19 I just wanted to let you know it's not because  
20 I'm not respectful.

21 CO-HEARING OFFICER MARCUS: And it's Friday  
22 tomorrow. You don't want to show up here.

23 MR. KEELING: On Friday? No --

24 CO-HEARING OFFICER DODUC: Tomorrow is  
25 Thursday.

1 I'm more than happy to declare a casual  
2 Thursday as well. All right. At Chair Marcus's  
3 request, we will have casual Thursday as well as casual  
4 Friday this week.

5 There he is. I believe Mr. Woelk has 15.  
6 Still 15? All right.

7 I'm sorry. And then Mr. Jackson, if it's okay  
8 with you, we will move to Mr. Obegi.

9 MR. JACKSON: That's fine.

10 CO-HEARING OFFICER DODUC: All right. Let's  
11 do that. And I think we will call it a day after that.

12 CROSS-EXAMINATION BY MR. WOELK

13 MR. WOELK: Thank you, Chair Doduc.

14 Again, Dan Woelk for the Counties of Solano  
15 and Contra Costa and the Contra Costa Water District.

16 I have about 15 minutes of questions solely  
17 for Dr. Hutton, so. . .

18 CO-HEARING OFFICER DODUC: I believe  
19 Dr. Hanson is most grateful.

20 MR. WOELK: Yes.

21 So good afternoon, Dr. Hutton. In reviewing  
22 your testimony as was partially stricken by the Hearing  
23 Officers --

24 MR. BERLINER: I'm sorry. Mr. Woelk, I  
25 apologize for interrupting you. I heard you said you

1 were here on behalf of Contra Costa Water District.

2 MR. WOELK: Oh, did I misspeak?

3 MR. BERLINER: I hope so.

4 MR. WOELK: Yeah. No, I'm here on behalf of  
5 the Counties of Contra Costa and Solano.

6 MR. BERLINER: Thank you.

7 CO-HEARING OFFICER DODUC: That would have  
8 been awfully interesting otherwise.

9 MR. WOELK: So Dr. Hutton, in reviewing your  
10 testimony, I have questions pertaining really to four  
11 aspects of your statistical analysis. And the first is  
12 an overarching point.

13 So Mr. Hunt, would you please go to DWR-1224,  
14 Page 4, Line 10.

15 So if you look at that Line 10, that third  
16 bullet point down, it says, "A long-term increasing  
17 trend, i.e., higher salinity in Fall X2, has not  
18 occurred."

19 Just want to confirm that that's your  
20 testimony; is that correct?

21 WITNESS HUTTON: Yes, it is.

22 MR. WOELK: Okay. So Mr. Hunt, would you  
23 please now go to DWR-1224, Page 14, Figure 6. So thank  
24 you.

25 Dr. Hutton, so just to clarify for the Hearing

1 Officers and yourself that this is the October X2  
2 values and associated 40-30-30 previous water year  
3 type, for water years 1922 through 2012.

4 So Dr. Hutton, doesn't this figure show that  
5 there has been a general increasing trend in, in this  
6 case, October X2, since about 1970?

7 WITNESS HUTTON: This chart is different from  
8 the point that was made in the previous bullet.  
9 This -- the black line that is shown here is a  
10 smoothing function, and this is not a hypothesis test  
11 as to the significance of a trend.

12 MR. WOELK: Okay. So let me just make sure I  
13 understand. So do you still stand by your comment that  
14 a long-term increasing trend in Fall X2 has not  
15 occurred?

16 WITNESS HUTTON: Yes, I do.

17 MR. WOELK: Okay. And as you look at this  
18 Figure 6, how -- how would you characterize what's  
19 happened since 1970 with respect to X2 in just looking  
20 at this?

21 WITNESS HUTTON: The reason this question is  
22 not appropriate is, when I say "long-term trend," I'm  
23 referring to the full period of record.

24 The question that's being asked of me is  
25 something that has happened since about 1970. And that

1 has been the -- in fact, that gets right to one of my  
2 concluding remarks about using a truncated set or  
3 subset of the full record is not indicative of the  
4 trends that should be considered by this Board.

5 MR. WOELK: Okay. So 1970 was a long time  
6 ago. You know, Ronald Reagan was our Governor back  
7 then. So your contention is that 1970 until now does  
8 not constitute, quote, long-term?

9 WITNESS HUTTON: That is correct. According  
10 to my -- the work that I've shown and the different --  
11 the different exhibits, the full period of record I've  
12 used has gone from water year 1922 to the present.

13 So even if you look at this chart, you can  
14 see -- if -- just looking at the smoothing function is,  
15 in the case of October -- say if you looked at the  
16 whole period of record, even though you're seeing a  
17 decline in the early part and an increase in the latter  
18 part, it's -- over the full period of record, there  
19 isn't a trend, which is consistent with the analysis  
20 that I refer to in that earlier bullet point.

21 MR. WOELK: Okay. Well, let's move on to the  
22 second set of -- second question I have with your  
23 testimony. And that's -- you know, we can stay on this  
24 Figure 6 for that.

25 And, you know -- and in our -- in my

1 understanding or our understanding of really how  
2 insightful it is, which you've kind of touched upon in  
3 your answer.

4 So as you indicated, it's plotted as a time  
5 series essentially, and it's simply, as you indicated,  
6 a smooth data line plotted against time; is that  
7 correct? Have I characterized it correctly?

8 WITNESS HUTTON: Yes, this is a -- this is a  
9 time series showing X2 for the month of October.

10 MR. WOELK: But isn't it also true -- I  
11 appreciate that.

12 Isn't it also true that the variation of Fall  
13 X2 will also depend on the particular sequence of water  
14 year types?

15 WITNESS HUTTON: X2, the value of X2 will  
16 necessarily reflect the antecedent hydrologic  
17 conditions that took place. So it's -- it's -- those  
18 conditions would be embedded in the actual value of X2.

19 MR. WOELK: But in terms of trying to discern  
20 a trend regarding X2, wouldn't it be more helpful to  
21 plot Fall X2 as a -- you know, as a function of water  
22 year type as opposed to just a time series?

23 WITNESS HUTTON: I suppose that depends on the  
24 question that's being asked.

25 MR. WOELK: Well, let's -- you do this in fact



1 later in your testimony, correct?

2 WITNESS HUTTON: That is correct.

3 MR. WOELK: So it seems like you're at least,  
4 you know, acknowledging that implicitly.

5 WITNESS HUTTON: Yes, I was addressing  
6 different questions. Just to the question of trend,  
7 that trend implies a trend over time, so a time series  
8 would be appropriate. If you're trying to get to  
9 asking different questions as to why, maybe plotting as  
10 a function of, say, in the case that I did, I -- I  
11 believe what's being referred to, some of my plots  
12 where I plot X2 as a function of the -- April through  
13 July unimpaired runoff.

14 MR. WOELK: Right. And what -- so we can get  
15 to that. As you can see, this is sort of my second  
16 point of confusion about your testimony.

17 But why don't we call up Figure 15 -- I'm  
18 sorry. So DWR-1224, Figure 15, Mr. Hunt. I can get  
19 the page number.

20 Page No. 25.

21 So, Dr. Hutton, in this -- as you indicated in  
22 Figure 15 and actually Figure 14 and 16, you plot X2  
23 position as a function of the April through July  
24 unimpaired runoff for September, October, and November  
25 respectively, correct?

1 WITNESS HUTTON: Yes.

2 MR. WOELK: Okay. So you're plotting it, you  
3 know, as a function of unimpaired runoff. But why  
4 didn't you plot these data as a function of the  
5 Sacramento 40-30-30 water year index?

6 WITNESS HUTTON: This -- I guess I -- I  
7 would -- I'm not -- why -- why would I?

8 I guess I would ask a question back to you.  
9 Why would you consider that to be superior to this?

10 MR. WOELK: Well, the way this works is that I  
11 ask the questions and you provide the answers. But  
12 maybe I can help with some clarification here.

13 Is that -- isn't that true that, using the  
14 April-through-July runoff doesn't capture how flows and  
15 salinities in a managed estuary might vary?

16 WITNESS HUTTON: I -- yeah, I would -- April  
17 through July is -- if you go back to the Delta Smelt  
18 Biological Opinion, there's a lot of reference to the  
19 correlation between what's happening in the fall and  
20 what was happening in the previous spring.

21 So, actually, when I -- when this analysis  
22 was -- this analysis was done certainly prior to -- to  
23 these hearings. And it was done in the -- as a matter  
24 of trying to evaluate the Fall X2 RPA in the Biological  
25 Opinion. So April-through-July unimpaired runoff is a

1 measure of the previous spring conditions.

2 MR. WOELK: Dr. Hutton, let me ask it this  
3 way. If you're trying to understand how X2 varies,  
4 you're trying to understand how salinity varies in a  
5 managed estuary like the Delta, isn't the unimpaired  
6 runoff for -- during the fall and winter, you know,  
7 October through March, and the amount of water carried  
8 over in storage from the previous water year also  
9 important in determining, again, how flows and  
10 salinities vary?

11 Just to be clear for the Hearing Officers,  
12 that's exactly what Sacramento 40-30-30 gets at.

13 WITNESS HUTTON: Well, first off, I'd say  
14 we're talking about salinity right here and not flow.  
15 We're talking about X2. And actually, what we know  
16 about salinity in Delta is that, say, for example --  
17 and I assume the Hearing Officers may be familiar with,  
18 like, the Kimmerer Monismith X2 equation which relates  
19 X2 with previous flows --

20 CO-HEARING OFFICER DODUC: I'm sorry. I'm  
21 trying to keep in mind Mr. Woelk's question. And this  
22 is a lot of foundation, I think.

23 Would you mind just answering Mr. Woelk's  
24 question directly?

25 WITNESS HUTTON: Yes.

1 CO-HEARING OFFICER DODUC: If there is any  
2 additional clarification, your attorneys will redirect  
3 you or will request the opportunity do so. But for  
4 now, please focus on directly answering Mr. Woelk's  
5 question.

6 MR. WOELK: Thank you.

7 WITNESS HUTTON: The -- the answer is no. The  
8 memory of the system would -- would, at the most, go  
9 out about -- about three months. If you look at --  
10 so -- so actually -- and so let's say in the case of  
11 September, if you go out three months back, the flow  
12 conditions more or less, the salinity, which is  
13 measured by X2, would be responsive to about the  
14 previous three months in flows.

15 MR. WOELK: Thank you, Dr. Hutton.

16 I see I have about three minutes left. I'll  
17 just ask my fourth question I have about this -- and we  
18 can stay on Figure 15 -- is you've broken it up by  
19 dates here, by water years, 1922 to 1944, 1945 to '67,  
20 '68-99, 2000-2009.

21 What I found curious, though, is that you  
22 didn't seem to analyze it based on before 1995 and  
23 after '95, that is, prior to and after the December '94  
24 Bay-Delta Accord and the Water Board's adoption of the  
25 May '95 Bay-Delta Water Quality Control Plan.

1           I was curious why you didn't do that here at  
2 least -- yeah. It seems like that would have a  
3 significant effect on X2, and I was wondering why you  
4 didn't do that.

5           WITNESS HUTTON: I agree that that -- that  
6 would be an interesting analysis. I could explain why  
7 I selected the periods that I did.

8           In the exhibits that -- in the manuscripts,  
9 peer-reviewed manuscripts, I looked at -- I broke it --  
10 I mean, because there are -- there are many ways that  
11 you could break up this data.

12           In my manuscripts, I broke it up into a  
13 pre-'68 and a post-'68 period. And that period was  
14 selected -- that was based on some other work, say, for  
15 example, Enright and Culberson.

16           But here, I wanted to break that up somewhat  
17 because that was a -- maybe a coarse setting. So I  
18 picked the '22 through '44 as a pre-project period.  
19 That was before Shasta Dam.

20           So then the '45 through '67 was just the  
21 remainder of that pre-'68 period.

22           The reason I broke up the post-'68 period was  
23 that, when I was originally doing this analysis, there  
24 was a lot of interest in the issue of the pelagic  
25 organism decline. And usually typically water year

1 2000 is a period that was used for that breakup.

2 So that was the -- that was the rationale.

3 But I certainly agree there are a lot of different  
4 interesting ways that this data could be evaluated.

5 MR. WOELK: Okay. Thank you, Dr. Hutton.

6 No more questions from me. I appreciate it.

7 CO-HEARING OFFICER DODUC: Are you sure? I  
8 mean, I always appreciate when people stay within their  
9 estimates. But if there are important points that you  
10 need to address, as you can tell from Mr. Keeling's  
11 cross-examination, we provide the parties -- as long as  
12 it's efficient and productive -- time to pursue those  
13 things. So I don't want you to feel like you have to  
14 cut it.

15 MR. WOELK: Well, I appreciate that, yeah.

16 Maybe I can -- I think I can ask just one final  
17 question, putting this all together. I appreciate it,  
18 Chair Doduc.

19 I -- so given that water year types and  
20 unimpaired runoff are important factors, you know,  
21 affecting management of flows and water quality in the  
22 Delta, why didn't you present October X2 as a function  
23 of 40-30-30 water year index for different sets of time  
24 including pre- and post-'95?

25 WITNESS HUTTON: It was my opinion that, when

1 I developed this analysis, this -- this data  
2 represent- -- presentation answered the questions I was  
3 trying to address.

4 MR. WOELK: Okay. Thank you.

5 CO-HEARING OFFICER DODUC: All right. Thank  
6 you.

7 Mr. Obegi.

8 So, Mr. Obegi, assuming that you'll use up to  
9 the two hours you requested, I would like to give the  
10 court reporter a short break around 4:00 o'clock. So  
11 if there's an appropriate place to break your  
12 questioning, let's aim for that.

13 MR. OBEGI: Absolutely. Thank you. And I  
14 want to thank the parties for letting me do my  
15 cross-examination out of order today. I really  
16 appreciate that.

17 I have questions starting with Dr. Acuna.  
18 Did I pronounce your name right?

19 WITNESS ACUNA: It's Dr. Acuna. But I'm fine.

20 MR. OBEGI: Acuna. Sorry. I'm terrible with  
21 pronunciation -- and then Dr. Hanson, and then I'll  
22 close with questions for Dr. Hutton.

23 CROSS-EXAMINATION BY MR. OBEGI

24 MR. OBEGI: I'd like to begin, Dr. Acuna, by  
25 asking you some questions about the statement in your

1 testimony that, quote, "Delta smelt research has not  
2 shown a reliable correlation between abundance and  
3 Winter-Spring X2, Summer X2, or Fall X2." Do you  
4 recall that statement?

5 WITNESS ACUNA: Yes, I do.

6 MR. OBEGI: Mr. Hunt, could you please pull up  
7 DWR-1242 and turn to Page 156 of the pdf. And this is  
8 the 2015 MAST report. And you're aware of this report  
9 and discuss it in your testimony, correct?

10 WITNESS ACUNA: Yes, I am.

11 MR. OBEGI: And isn't it true that these  
12 analyses on this page and a few pages before and after  
13 all account for the prior abundance of Delta smelt?

14 WITNESS ACUNA: I'm having trouble reading it.  
15 Can you blow it up again?

16 Yeah, I'm not really sure if it actually  
17 accounts for prior abundance. I need to look through  
18 it a little more thoroughly. There are other analyses  
19 within this document that does, but some don't. So I  
20 would need a little bit more time to review  
21 specifically this part.

22 MR. OBEGI: Okay. And isn't it true that  
23 these analyses found there's a statistically  
24 significant correlation between spring outflow and  
25 subsequent abundance of Delta smelt?



1           WITNESS ACUNA:  If this is the analysis I  
2 think you're talking about -- is this the one where  
3 it's going over summer flow action -- flow and the  
4 subsequent abundance over prior abundance?

5           MR. OBEGI:  This one, I believe, is actually  
6 looking at the relationships between the 20-millimeter  
7 abundance index and spring X2, and fall midwater trawl  
8 values.

9           WITNESS ACUNA:  Yeah.  Okay.  And can you  
10 please repeat the question?

11          MR. OBEGI:  Isn't it true that this analysis  
12 found there's a statistically significant correlation  
13 between spring outflow and subsequent abundance of  
14 Delta smelt?

15          WITNESS ACUNA:  The analysis I was speaking to  
16 was the analysis in the Kimmerer report, Kimmerer  
17 paper, 2009, which showed that the relationship for  
18 spring flow was inconsistent as it showed a variety of  
19 response to flow, not to this particular case.

20          MR. OBEGI:  But you did reference this report  
21 in your testimony, correct?

22          WITNESS ACUNA:  I did reference the report.  
23 And I was specific on the -- at least I tried to be  
24 specific to the flow regarding the summer relationship.  
25 I'm more familiar with that one.

1           MR. OBEGI: But your testimony also talked  
2 about there not being a reliable correlation between  
3 winter spring X2 and Delta smelt abundance, correct?

4           WITNESS ACUNA: Yes, in the context of the  
5 2009 paper by William Kimmerer.

6           MR. OBEGI: So that was the only piece of  
7 research that you relied on when you made the broad  
8 statement that Delta smelt research has not shown a  
9 reliable correlation?

10          WITNESS ACUNA: No, but that's the one I  
11 referred to when I was talking about the analysis, that  
12 it was inconsistent, that this analysis itself, as  
13 well, is inconsistent with the one from the Kimmerer  
14 report.

15          So as you can tell from looking at the fall  
16 effect on the abundance and subsequent abundance, it's  
17 inconsistent, which was part of my testimony.

18          MR. OBEGI: And this is the more recent report  
19 published after the Kimmerer report, correct?

20          WITNESS ACUNA: Yes, I believe so.

21          MR. OBEGI: And could you turn, Mr. Hunt,  
22 another page forward.

23          And I believe these graphics are showing the  
24 relationship between Delta smelt abundance and both the  
25 February-to-June X2 as well as the Fall X2. Are you

1 aware of these analyses?

2 WITNESS ACUNA: I am aware. I also am aware  
3 that much of the analysis, as including the prior table  
4 that you referenced, was not considered peer reviewed.

5 MR. OBEGI. But it went through internal peer  
6 review, did it not?

7 WITNESS ACUNA: Part of the document was  
8 considered part of the internal review. This section  
9 was heavily caveated as saying that this was not --  
10 went -- did not go under the same scrutiny.

11 MR. OBEGI. Okay. And so that's why you would  
12 consider this not reliable?

13 WITNESS ACUNA: I did not rely on that  
14 specifically. I looked at a different -- a suite of  
15 different analyses altogether, including the Kimmerer  
16 report 2009, Kimmerer paper, et al., 2009.

17 MR. OBEGI: Am I correct that your testimony  
18 also raised concerns that this analysis only used part  
19 of the data set?

20 WITNESS ACUNA: Correct. But my main concern  
21 was the fact that it was not peer reviewed and needs to  
22 be further analyzed.

23 Truncating the data may be appropriate if  
24 properly done. It has been done in other studies, such  
25 as the Kimmerer report -- Kimmerer paper that I

1 referenced prior to this.

2 But it needs to be done in a way that is able  
3 to be scrutinized statistically and understood by peer  
4 review. This was not the case for this analysis.

5 MR. OBEGI: Isn't it correct that this  
6 analysis used all the data that was available since the  
7 20-millimeter survey began in 1995?

8 WITNESS ACUNA: I believe it was using most of  
9 the data that was available at the time, yes. But  
10 they -- they artificially truncated the data.

11 As you can see in Graph A and Graph B, both  
12 the sets of data have different data points, and then  
13 the smoothing lines have been put into there  
14 specifically for those time periods.

15 So it may have all the data, but the data was  
16 truncated for the purposes of this analysis, which has  
17 not been peer reviewed or scrutinized in a way to make  
18 us have greater certainty of the results.

19 MR. OBEGI: And that data, what you considered  
20 truncated, am I correct that they used 2003 as the  
21 break point for their data analysis?

22 WITNESS ACUNA: It appears to be the way. If  
23 I'm reading the graph right and as I've reviewed  
24 before, the -- it truncates it after the '22 period, so  
25 it includes '23 to 2013.

1           MR. OBEGI: And doesn't that time period  
2 correspond to the beginning of the pelagic organism  
3 decline?

4           WITNESS ACUNA: The pelagic organism decline  
5 was designated in 2002.

6           MR. OBEGI: And there are theses that some of  
7 these relationships between flow and abundance of Delta  
8 smelt changed as a result of the pelagic organism  
9 decline; isn't that correct?

10          WITNESS ACUNA: There are a number of  
11 different analyses that have shown a potential  
12 correlation with the pelagic organism decline as well  
13 as no change with the pelagic organism decline, where  
14 the break point analysis done by MacNally -- not  
15 MacNally, sorry -- Thompson, et al. in 2010 showed that  
16 the break point was more appropriate for -- it tended  
17 to vary depending on the species you were looking at.

18           And if you were to look at all the species  
19 together, it gave you a different value.

20          MR. OBEGI: And given that statement, would  
21 you agree that, if the relationships have changed the  
22 results of the POD, it's appropriate to evaluate  
23 effects in the post-POD era?

24          WITNESS ACUNA: As I stated before, this has  
25 not been peer reviewed and has not been evaluated in a

1 way that can assess that this was appropriate in this  
2 case.

3 It depends on a case-by-case basis. That  
4 analysis needs to be scrutinized, understood by the  
5 reviewer that they -- that the writer, the people, the  
6 author of this analysis have properly argued that this  
7 is an appropriate break point.

8 MR. OBEGI: I'd move to strike as  
9 non-responsive.

10 CO-HEARING OFFICER DODUC: Any response?

11 MR. MIZELL: It's the witness's answer to the  
12 question asked.

13 CO-HEARING OFFICER DODUC: In which way do you  
14 believe it's non-responsive, Mr. Obegi?

15 MR. OBEGI: I believe that I asked if it was  
16 appropriate to evaluate effects in the post-POD era,  
17 and I got a response that did not address the question  
18 at all and simply reiterated a statement regarding peer  
19 review.

20 CO-HEARING OFFICER DODUC: My understanding of  
21 his answer was that he could not answer whether it was  
22 appropriate.

23 But, Dr. Acuna, are you able to directly  
24 answer Mr. Obegi's question?

25 WITNESS ACUNA: So let's use the example of

1 the Kimmerer report -- the Kimmerer paper.

2 CO-HEARING OFFICER DODUC: State his question  
3 again.

4 WITNESS ACUNA: So the question is is it  
5 appropriate to basically do an analysis by truncating  
6 the data using either a break point or other that  
7 encompasses the POD period, so the post-2002 period.

8 While the analysis done by Kimmerer  
9 established that using proper references and citations  
10 and evaluated how it was to be done, this was not the  
11 case for this analysis.

12 CO-HEARING OFFICER DODUC: Ah.

13 WITNESS ACUNA: If this analysis had done  
14 that, maybe we can then scrutinize and understand  
15 whether it was properly argued that the truncation or  
16 the -- sort of the break point was appropriate.

17 CO-HEARING OFFICER DODUC: But the answer to  
18 Mr. Obegi then is yes, it is possible?

19 WITNESS ACUNA: It is possible, such as --  
20 which is why I gave the example of the Kimmerer 2009  
21 paper, which it does it clearly right there.

22 CO-HEARING OFFICER DODUC: All right. Motion  
23 to strike granted except for that last part.

24 MR. OBEGI: Thank you.

25 Now, you're also aware that -- the life cycle

1 modeling that the Fish and Wildlife Service is doing  
2 regarding Delta smelt, correct?

3 WITNESS ACUNA: Yes, but I'm not fully aware  
4 of how it works.

5 MR. OBEGI: Mr. Hunt, could you please pull up  
6 NRDC-37.

7 And scrolling down a little bit, you can see  
8 Leo Polansky from the U.S. Fish and Wildlife Service,  
9 his responses to my e-mail.

10 Have you seen this e-mail before?

11 WITNESS ACUNA: I'm not aware of this e-mail.  
12 I don't recall it.

13 MR. OBEGI: Have you had communications with  
14 Dr. Polansky regarding his life cycle model or others  
15 at the Fish and Wildlife Service?

16 WITNESS ACUNA: Yes, we have.

17 MR. OBEGI: And are you aware that they have  
18 found there is a statistically significant relationship  
19 between spring outflow and subsequent abundance?

20 WITNESS ACUNA: They also found out there was  
21 a statistical analysis suggesting that striped bass  
22 dominates the whole model. There are a variety of  
23 responses that they were able to find.

24 Once the data is published, I would be able to  
25 give it more weight. Right now, I wasn't sure how to



1 give any weighting to any of the results.

2 MR. OBEGI: Doesn't this e-mail actually say  
3 that other covariants, like striped bass spring  
4 abundance, did not have a statistically significant  
5 effect on survival?

6 WITNESS ACUNA: Can you please point to where  
7 it says that?

8 CO-HEARING OFFICER DODUC: And, Mr. Obegi, you  
9 need to slow down for the court reporter. I'm getting  
10 dirty looks from her. Not a good sign.

11 MR. OBEGI: Very sorry. Appropriately dirty  
12 looks.

13 CO-HEARING OFFICER DODUC: Except she was  
14 giving them to me.

15 MR. OBEGI: Because I was focused -- I was not  
16 paying appropriate attention. I apologize.

17 If you see above the word "yes" that's in  
18 blue, the last line.

19 WITNESS ACUNA: Which "yes"? Oh, wait. I'm  
20 thinking you're thinking of the one on the bottom.

21 Okay. "Other could variants, like striped  
22 bass spring abundance, did not have a statistically  
23 significant effect on survival."

24 MR. OBEGI: So, again, when you testified that  
25 Delta smelt research has not shown a reliable

1 correlation between abundance and Winter-Spring X2,  
2 Summer X2, or Fall X2 --

3 CO-HEARING OFFICER DODUC: Mr. Obegi.

4 WITNESS ACUNA: Yeah, thank you, Chair Doduc.

5 Could you please repeat that? That was pretty  
6 fast. Sorry.

7 MR. OBEGI: So when you testified that, quote,  
8 "Delta smelt research has not shown a reliable  
9 correlation between abundance and Winter-Spring X2,  
10 Summer X2, or Fall X2, you had not considered this  
11 e-mail or these life cycle model results, correct?

12 CO-HEARING OFFICER DODUC: Hold on, please.

13 MS. SHEEHAN: Hi, Becky Sheehan for State  
14 Water Contractors.

15 The witness already responded that he was not  
16 aware and has never seen this e-mail before.

17 MR. MIZELL: We would join that objection.  
18 It's asked and answered. The witness had responded he  
19 had not seen this e-mail until just now.

20 CO-HEARING OFFICER DODUC: Then it doesn't  
21 hurt to answer this question.

22 Dr. Acuna.

23 MR. MIZELL: With the caveat that he'd be  
24 speculating on new information he's never reviewed.

25 CO-HEARING OFFICER DODUC: The question was

1 whether he considered it. It's a simple yes and no, I  
2 believe.

3 WITNESS ACUNA: Can I see the date on this?

4 CO-HEARING OFFICER DODUC: Oh, yes.

5 MR. OBEGI: Can you scroll up, Mr. Hunt?

6 WITNESS ACUNA: That's last year. This is not  
7 up to date.

8 CO-HEARING OFFICER DODUC: The question was  
9 whether you considered it.

10 WITNESS ACUNA: Considered the model of a --

11 CO-HEARING OFFICER DODUC: Did you consider  
12 this?

13 WITNESS ACUNA: This? No, because I'm not  
14 aware of these results at all.

15 CO-HEARING OFFICER DODUC: Okay.

16 MR. OBEGI: Thank you.

17 CO-HEARING OFFICER DODUC: And Mr. Obegi, I  
18 misspoke before when I said I wanted to take a break at  
19 4:00. I meant 5:00.

20 So, sorry, guys. We're going till 5:00, then  
21 we'll take a break around there.

22 MR. OBEGI: Can you, Mr. Hunt, pull up  
23 NRDC-61.

24 Dr. Acuna, have you seen this document before?

25 WITNESS ACUNA: Mr. Hunt, can you please

1 scroll down a couple pages, like, two more pages.

2 Yeah, I think I've -- yeah, I've seen this  
3 one.

4 MR. OBEGI: Can you, Mr. Hunt, scroll back up  
5 to Page 3.

6 And are you aware that this report finds that  
7 there is a statistically significant relationship  
8 between April-and-May X2 and Delta smelt abundance?

9 WITNESS ACUNA: I don't believe that that  
10 truly did that. This is not -- this is not -- once  
11 again, this is another document that is not peer  
12 reviewed; it's still preliminary data.

13 This was thrown together pretty haphazardly.  
14 It did not account for correlations with prior flows.  
15 It did not account for a lot of correlations. The  
16 statistical significance of this document is in  
17 question because the analysis isn't fully vetted.

18 MR. OBEGI: So that's why you would -- you  
19 would find that this is not reliable?

20 WITNESS ACUNA: I mean -- scroll down, can you  
21 please scroll down to the first graph.

22 I mean, even if you were to look at this graph  
23 alone, the results are unreliable. It's showing a  
24 great deal of variance in the relationship with water  
25 year as well as year with the abundance. This is

1 subsequent abundance, I believe, fall over fall? I  
2 mean, fall midwater trawl over fall midwater trawl?

3 MR. OBEGI: Mr. Hunt, can you go to Page 26, I  
4 believe.

5 And this is their statistical analysis.  
6 You're aware that they did a detailed statistical  
7 analysis?

8 WITNESS ACUNA: I'm not aware of that. And  
9 this seems pretty short, if it's to be describing any  
10 statistical analysis.

11 MR. OBEGI: And you're also aware that both  
12 the U.S. Fish and Wildlife Service and California  
13 Department of Fish and Wildlife have raised concerns  
14 about the effects of Summer X2 on Delta smelt?

15 WITNESS ACUNA: Can you please restate the  
16 question?

17 MR. OBEGI: Are you aware that both the U.S.  
18 Fish and Wildlife Service and California Department of  
19 Fish and Wildlife have raised concerns about the  
20 effects of reduced Delta outflow in the summer on Delta  
21 smelt?

22 CO-HEARING OFFICER DODUC: Hold on.

23 Ms. Sheehan?

24 MS. SHEEHAN: Yes. The question's vague.

25 What does he mean by "concerns"?

1 MR. OBEGI: I can rephrase.

2 Are you aware that in the U.S. Fish Wildlife  
3 Services Biological Opinion for the WaterFix project  
4 they raised concerns that the project would reduce  
5 summer outflow and that would adversely affect Delta  
6 smelt?

7 WITNESS ACUNA: I'm not -- sorry. I'm not  
8 fully aware of the summer impacts on that Biological  
9 Opinion. Can you please show where you're talking  
10 about?

11 MR. OBEGI: That's okay. We can move on.

12 Now, you've also asserted that Fall X2 science  
13 is a, quote, "unreliable basis for management actions  
14 to improve survival." Do you recall that statement in  
15 your testimony?

16 WITNESS ACUNA: Can you refer to it again,  
17 please?

18 MR. OBEGI: Sure. I believe it's on Page 7,  
19 around Lines 23. But this is the prior version of your  
20 testimony without the redactions. The statement was  
21 that Fall X2 science is, quote, "an unreliable basis  
22 for management actions to improve survival."

23 WITNESS ACUNA: I do not see that statement.  
24 Can you please show that on the screen?

25 MR. OBEGI: Yes, I have it on Page 7, Lines 23

1 to 25. Sorry, that Feyrer, et al., 2007 is an  
2 unreliable basis for management actions to improve  
3 survival. I misspoke.

4 WITNESS ACUNA: Yes, you're speaking from my  
5 testimony.

6 MR. OBEGI: Yes.

7 WITNESS ACUNA: I'm aware of that line.

8 MR. OBEGI: Do you believe that there is other  
9 Fall X2 science that is a reliable basis for management  
10 actions to improve survival?

11 WITNESS ACUNA: Well, the current evaluation,  
12 I think we went over a few, that's for understanding  
13 the effect of Fall X2 on survival. I'm not really  
14 sure.

15 We did have an analysis done on the Fall X2  
16 effects from this analysis done by my colleague  
17 Corey Phillis that looks at that. I found that to be a  
18 pretty good reliable analysis of that analysis.

19 As opposed to Fall X2 itself, there are not a  
20 lot of peer-reviewed studies that I would find to be  
21 very reliable.

22 MR. OBEGI: But Feyrer, et al., 2007 and his  
23 subsequent paper were both published in peer-reviewed  
24 journals, correct?

25 WITNESS ACUNA: Correct, but not the

1 subsequent -- I don't believe the subsequent one was  
2 published. It was actually put into the Biological  
3 Opinion as Feyrer, et al., 2008. That was not  
4 published. That's an unpublished paper.

5 The 2007 paper was published, but it has been  
6 significantly criticized for its inappropriate  
7 methodology.

8 MR. OBEGI: And the authors provided their  
9 rejoinder to that rebuttal, did they not, that was  
10 published in the same journal?

11 WITNESS ACUNA: I don't recall that.

12 MR. OBEGI: And are you aware that, in 2017,  
13 the California Department of Fish and Wildlife rejected  
14 the proposal to not fully implement the Fall X2 action?

15 WITNESS ACUNA: I'm not aware of this action  
16 you're talking about. Which -- which decision was  
17 this?

18 MR. OBEGI: Are you aware that, in 2017, the  
19 State Water Contractors petitioned the Bureau of  
20 Reclamation to not fully implement the Fall X2 action  
21 in the Delta smelt Biological Opinion?

22 WITNESS ACUNA: The Fall X2 action actually  
23 has a clause in there that discusses adaptive  
24 management. Full implementation of the Fall X2 would  
25 also incorporate adaptively implementing it.



1           MR. OBEGI: So you are aware of the proposal  
2 to adaptively implement Fall X2 in 2017?

3           WITNESS ACUNA: Yes. The analysis that was --  
4 I was referring to before by my colleague, Corey -- by  
5 Dr. Corey Phillis, was in that proposal.

6           MR. OBEGI: And are you aware that the  
7 California Department of Fish and Wildlife rejected  
8 that proposal?

9           WITNESS ACUNA: They -- I don't believe that's  
10 correct.

11          MR. OBEGI: We may have to come back to that.

12          Let's talk about entrainment. There's a  
13 statement in your testimony that, quote, "Entrainment  
14 may not have population-level effects and several  
15 multi-period analyses did not find support for a  
16 population-level effect." Do you recall that  
17 statement?

18          WITNESS ACUNA: Yes, that is from my  
19 testimony.

20          MR. OBEGI: And you cited several studies in  
21 support of that statement, correct?

22          WITNESS ACUNA: Yes, in particular, the  
23 Miller, et al. paper on modeling and the Maunder,  
24 Deriso citation.

25          MR. OBEGI: And would you scroll up to Page 4

1 of his testimony. Can we pull up DWR-1252?

2 That's one of the studies that you cited in  
3 support of that statement, correct?

4 WITNESS ACUNA: I don't recall the exact  
5 exhibit numbers for each one. I know them more by  
6 their name.

7 MR. OBEGI: But in your testimony, you cite  
8 them by exhibit numbers?

9 WITNESS ACUNA: Yeah, that was due to adding  
10 clarifications and the limitations of the Water Board  
11 hearing requirements.

12 MR. OBEGI: And you recall that this was one  
13 of papers that you relied on for that statement?

14 WITNESS ACUNA: I believe -- I did not -- I  
15 don't know why that was added. I think I should have  
16 just been focused on the Miller, et al. and the  
17 Maunder, Deriso paper.

18 MR. OBEGI: Isn't it true that this paper  
19 actually finds there is a relationship between water  
20 exports and Delta smelt abundance?

21 WITNESS ACUNA: It does find a relationship  
22 with exports, yes, but I was speaking to entrainment.

23 MR. OBEGI: So when you -- but there is a  
24 statistically significant relationship between exports  
25 and Delta smelt abundance?

1 WITNESS ACUNA: With this study, yes.

2 MR. OBEGI: And so can you see how it might be  
3 misleading to not in- -- to cite this paper for that  
4 statement in your testimony, but not -- even though it  
5 does find a statistically significant relationship  
6 between exports and abundance?

7 WITNESS ACUNA: I was speaking to entrainment,  
8 so I don't understand the "misleading" part.

9 MR. OBEGI: So you believe that exports and  
10 entrainment are not linked?

11 WITNESS ACUNA: Well, exports can be quite --  
12 sorry. It sounds like it was, like, skipping out  
13 there.

14 I'm not aware of how directly linked the  
15 exports and X2 -- and entrainment are. But adjusting  
16 exports has not always resulted in an alteration of  
17 salvage.

18 MR. OBEGI. And you also cited the Thompson,  
19 et al., 2010 paper for that conclusion about  
20 entrainment of Delta smelt, correct?

21 And that -- Mr. Hunt, if you could pull up  
22 DWR-1253.

23 WITNESS ACUNA: Like the MacNally one, I  
24 believe that this should have been just for the  
25 exports, but I was referring to entrainment.

1           MR. OBEGI: And so, again, this does find a  
2 statistically significant relationship between exports  
3 and Delta smelt abundance, correct?

4           WITNESS ACUNA: Yes.

5           MR. OBEGI: And you also cited -- I believe  
6 you cited Rose, et al., 2013 for that conclusion about  
7 the effects of entrainment on Delta smelt. Are you  
8 familiar with that paper?

9           WITNESS ACUNA: I am familiar with that paper,  
10 but I don't recall referring to Rose, et al. as showing  
11 that it was not significant.

12          MR. OBEGI: And are you aware that  
13 Rose, et al. published two papers in 2013 in the  
14 Transactions of American Fisheries Society?

15          WITNESS ACUNA: Rose, et al. forced X2 -- I  
16 mean, forced entrainment into the model; therefore, it  
17 was not testing whether entrainment was the most  
18 important factor. It only considered a small number of  
19 factors, and it assumed that those were the most  
20 important, and therefore, it forced it into the model.

21          MR. OBEGI: Mr. Hunt, could you pull up  
22 NRDC-212.

23                 And this is the second Rose, et al. paper from  
24 2013, correct?

25          WITNESS ACUNA: Correct.

1           MR. OBEGI: And it wasn't included in DWR's  
2 exhibit index, to your knowledge, was it?

3           WITNESS ACUNA: I don't know what index you're  
4 talking about.

5           MR. OBEGI: In the index of exhibits. Suffice  
6 to say, you're not -- I accept that answer.

7           Your testimony also cites the Maunder and  
8 Deriso paper as one of the studies showing that  
9 entrainment does not have a population-level effect,  
10 correct?

11          WITNESS ACUNA: Correct. What they found was  
12 that entrainment was not found to be reliable as a  
13 metric for their analysis, so they threw it out of  
14 their analysis.

15          MR. OBEGI: Mr. Hunt, could you turn to Page  
16 10 of this exhibit.

17          And do you recall in this paper the discussion  
18 of the Maunder and Deriso paper and their conclusions  
19 about entrainment?

20          WITNESS ACUNA: Yes, but once again, this  
21 paper does not test for entrainment.

22          MR. OBEGI: But don't the authors in this  
23 paper conclude that Maunder and Deriso actually had --

24          If you could scroll down, Mr. Hunt, I don't  
25 want to misstate the exhibit.

1           Do you see the paragraph that begins, "We  
2 disagree to some extent with Maunder and Deriso"?

3           WITNESS ACUNA: Yes, I can see that.

4           MR. OBEGI: And doesn't it state that Maunder  
5 and Deriso, quote, "They showed an approximate twofold  
6 increase in adults during 2002 to 2006 by eliminating  
7 entrainment. This agrees with our analysis"?

8           WITNESS ACUNA: I don't believe Maunder and  
9 Deriso would agree with their opinion. This is a  
10 matter of opinion between the two different statistical  
11 groups. I don't feel qualified to weigh in on that  
12 discussion, as I'm not a statistician or a modeler.

13          MR. OBEGI: But you are aware of those  
14 criticisms of the Maunder and Deriso paper?

15          WITNESS ACUNA: I am also aware that Maunder  
16 and Deriso strongly disagree with that criticism.

17          MR. OBEGI: And are you aware that, when the  
18 U.S. Fish and Wildlife Service evaluated -- are you  
19 aware that the U.S. Fish and Wildlife Service evaluated  
20 use of the Maunder and Deriso model in 2013 for the  
21 Bay-Delta Conservation Plan?

22          WITNESS ACUNA: I'm not aware of that.

23          MR. OBEGI: Mr. Hunt, could you pull up  
24 NRDC-28, please.

25                 And turn to Page 20.

1           Sorry. Go back to Page 1 for a second so the  
2 witness can familiarize himself with the exhibit.

3           Have you seen this document before?

4           WITNESS ACUNA: This is the document that I  
5 was previously -- is this the one that also has the  
6 fall-over-fall relationship?

7           MR. OBEGI: No. This is the -- the progress  
8 assessment from the U.S. Fish and Wildlife Service on  
9 the Bay-Delta Conservation Plan.

10          WITNESS ACUNA: I'm not familiar with this  
11 paper.

12          MR. OBEGI: Mr. Hunt, could you turn to  
13 Page 20?

14          WITNESS ACUNA: Am I to assume this is written  
15 by U.S. Fish and Wildlife Service? There's no header  
16 or anything on this. What is this?

17          MR. OBEGI: Go back up to Page 1, Mr. Hunt.

18          WITNESS ACUNA: That's just a title. I still  
19 don't see an official designation that this is a U.S.  
20 Fish and Wildlife document.

21          MR. OBEGI: I'll make an offer of proof that  
22 this is an official U.S. Fish and Wildlife Service  
23 document. Happy to follow up if necessary.

24          MR. BERLINER: So is the question that you're  
25 going to ask him hypothetical based on your

1 representation then?

2 MR. OBEGI: Sure.

3 CO-HEARING OFFICER DODUC: All right.

4 MR. BERLINER: Thank you.

5 MR. OBEGI: Turning to Page 20. And in the  
6 second paragraph, there's a statement that says, quote,  
7 "The published version of the model used data through  
8 2006. The model is updated for the effects analysis to  
9 include data through 2010. When this was done, the  
10 model fit deteriorated dramatically relative to what  
11 was reported in the paper."

12 Assuming for the moment that -- assuming the  
13 hypothetical that this conclusion was -- this statement  
14 was written by the U.S. Fish and Wildlife Service,  
15 would that change your opinion of the results of the  
16 Maunder and Deriso model?

17 MR. MIZELL: I'm going to object to the  
18 question. The witness has indicated twice now that  
19 he's not familiar with this exhibit. To pull one  
20 paragraph out of 30 pages and ask him to know the  
21 context upon which it's written is inappropriate, and  
22 I'd object that the witness does not have the  
23 background to answer the question on this document.

24 CO-HEARING OFFICER DODUC: Mr. Obegi.

25 MR. OBEGI: I believe it was a fully formed



1 hypothetical that discusses criticism of a model by  
2 U.S. -- purportedly by the U.S. Fish and Wildlife  
3 Service and whether that would affect his opinion. If  
4 he's unable to answer, that's his -- if he's not  
5 qualified to answer, that's okay.

6 CO-HEARING OFFICER DODUC: Overruled,  
7 Mr. Mizell.

8 Ms. Sheehan, do you have a different motion --  
9 or objection?

10 MS. SHEEHAN: I was going to join because the  
11 question is vague because it's unclear in the context  
12 of this document what it means by "the model fit  
13 deteriorated dramatically." In what way? There's not  
14 enough information here to understand what the question  
15 is.

16 CO-HEARING OFFICER DODUC: Mr. Obegi, let's  
17 repeat with perhaps a little bit more detail.

18 MR. OBEGI: I can't explain -- I can't provide  
19 more detail without testifying myself, which would be  
20 inappropriate.

21 The hypothetical is with respect to how well  
22 the model fit the data. And if that model -- if that  
23 fit between the model results and the data worsened  
24 with the addition of more information, the question is  
25 whether that would change the witness's opinion of the

1 Maunder and Deriso paper.

2 CO-HEARING OFFICER DODUC: Did you consider  
3 that paper in conducting your analysis and preparing  
4 your testimony?

5 WITNESS ACUNA: I considered the Maunder  
6 Deriso paper. I have not seen this document that is  
7 being shown here on the screen.

8 CO-HEARING OFFICER DODUC: You'll have to  
9 limit your question to what he did consider, Mr. Obegi.

10 MR. OBEGI: That's okay. We can move on.

11 Are you aware that Dr. Kimmerer and  
12 Dr. Rose published a paper in 2018 using their life  
13 cycle model to evaluate the effects of entrainment and  
14 changes in food supply on Delta smelt abundance?

15 WITNESS ACUNA: I am not fully familiar with  
16 that paper.

17 MR. OBEGI: But you have heard of it?

18 WITNESS ACUNA: In the most vaguest sense,  
19 unfortunately.

20 MR. OBEGI: Mr. Hunt, could you please pull up  
21 NRDC-209.

22 And have you participated in the CSAMP  
23 process?

24 WITNESS ACUNA: Very rarely, yes.

25 MR. OBEGI: I believe this paper was shared

1 with the CSAMP process, but you may not have seen it at  
2 that time.

3 WITNESS ACUNA: Yes, but we had a lot of  
4 things that we had to review as part of our work. I'm  
5 not exactly sure when this paper came out, but I  
6 believe it was 2018, so this year. We had a lot of  
7 higher priorities than this paper.

8 From what I gather from what Kimmerer told me  
9 about it, that he -- it was going to be coming out and  
10 I should look for it. I thought I would have time to  
11 review the next year on this. But it is something I  
12 would like to review.

13 MR. OBEGI: And it -- if you read the  
14 abstract, quote, "Eliminating entrainment mortality  
15 increased the geometric mean," with the growth rate,  
16 "by 39 percent through increased survival of larvae and  
17 adults. Substituting historical food for present-day  
18 food resulted in variable annual," growth rates "values  
19 with a geometric mean that was 41 percent greater than  
20 the baseline value."

21 Given that statement in the abstract, is it  
22 your understanding that this paper finds that  
23 entrainment has similar effects on Delta smelt  
24 abundance as changes in food supply?

25 MR. MIZELL: Objection, requests -- it calls

1 for speculation. The witness has indicated he has not  
2 had a chance to review this paper. To ask a question  
3 as to what the entire paper concludes based upon an  
4 abstract is -- is calling for speculation.

5 CO-HEARING OFFICER DODUC: Mr. Obegi.

6 MR. OBEGI: Dr. Acuna's testimony states with  
7 no reservations or qualifications that several  
8 multivariate analyses did not find support for a  
9 population-level effect.

10 And I believe he cited one of the earlier  
11 papers by this author. And this goes to both his  
12 understanding of the issues as well as it is  
13 inconsistent with his prior testimony, I believe.

14 MR. MIZELL: And Mr. Obegi [sic] has  
15 established that he has not reviewed this paper but  
16 would like to in the future. I believe that is the  
17 extent of what the point was.

18 CO-HEARING OFFICER DODUC: And if that's the  
19 case, Dr. Acuna, if you cannot answer the question, you  
20 may say you cannot.

21 WITNESS ACUNA: I can't really answer this  
22 question on this.

23 As I said, I do intend on reading this paper.

24 MR. OBEGI: Would it surprise you that there  
25 are other peer-reviewed papers that find a population

1 effect of entrainment on Delta smelt?

2 WITNESS ACUNA: Other than the ones that have  
3 already been cited?

4 MR. OBEGI: Potentially, yes.

5 WITNESS ACUNA: I don't think it would  
6 surprise me, since I'm not familiar with this one. The  
7 information in this data would -- sounds like you're  
8 suggesting it would surprise me.

9 MR. OBEGI: Let's turn now to a discussion in  
10 your testimony on Page 5. Do you recall the statement,  
11 quote, "Current real-time operations have focused on  
12 avoiding the creation of a turbidity bridge that could  
13 draw Delta smelt into the South Delta toward the  
14 existing pumping facilities"?

15 WITNESS ACUNA: Yes, that is in my testimony.

16 MR. OBEGI: Isn't it correct that Delta smelt  
17 historically spawned in the San Joaquin River in parts  
18 of the South and Central Delta?

19 WITNESS ACUNA: Spawning has never been  
20 recorded in the Delta.

21 MR. OBEGI: Isn't it correct that historically  
22 there have been large numbers of juveniles found in the  
23 San Joaquin River in parts of the South and Central  
24 Delta?

25 WITNESS ACUNA: The Delta is a highly dynamic,

1 turbid system. Those juveniles -- it's not certain  
2 where their origin is. As the Delta smelt spawning has  
3 never been recorded, it is uncertain as to the origin  
4 of those fish.

5 MR. OBEGI: But historically, juveniles did  
6 use the San Joaquin River and parts of the South and  
7 Central Delta, based on survey data, correct?

8 WITNESS ACUNA: Can you define "use"?

9 MR. OBEGI: Historically, juvenile Delta smelt  
10 were found in the San Joaquin River and parts of the  
11 South and Central Delta?

12 WITNESS ACUNA: I believe that is correct  
13 because of the -- I believe the fall midwater trawl has  
14 caught them there on occasion.

15 (Reporter interruption)

16 WITNESS ACUNA: The fall midwater trawl.

17 MR. OBEGI: You also testified that the South  
18 Delta has higher productivity than other parts of the  
19 Delta, correct?

20 WITNESS ACUNA: It has higher productivity as  
21 a region than other regions of the Delta. There are  
22 specific hot spots in other areas that may be higher.  
23 I'm not really fully aware of those.

24 MR. OBEGI: So don't these real-time  
25 operations that you describe to avoid drawing Delta

1 smelt into the South Delta eliminate them from this  
2 higher productivity habitat?

3 WITNESS ACUNA: I don't understand the  
4 relationship that you're trying to describe here. What  
5 about the productivity itself?

6 MR. OBEGI: Isn't it true that you testified  
7 that those real-time operations are attempting to keep  
8 adults and juvenile Delta smelt out of the South and  
9 Central Delta?

10 WITNESS ACUNA: During the fall migra- --  
11 well, what is considered the migratory period to  
12 prevent entrainment after -- as they move towards  
13 spawning.

14 MR. OBEGI: And so, again, that is preventing  
15 juvenile Delta smelt from -- adults and juveniles from  
16 using the South Delta during the, what, December  
17 through June period?

18 WITNESS ACUNA: I don't believe it's  
19 preventing them from using it. We're not exactly sure  
20 how they use the South Delta for spawning as spawning  
21 has not been recorded despite frequent attempts to try  
22 and find it.

23 MR. OBEGI: But isn't the intent -- the intent  
24 of that real-time operation to avoid Delta smelt being  
25 in the South and Central Delta?

1           WITNESS ACUNA: No. I believe the -- I'm not  
2 fully versed in their full intent, but one of the  
3 reasons that was given in forums such as the Delta  
4 Condition Team as for purpose for the brand of action  
5 is to reduce salvage, not necessarily reduce movement  
6 into the South Delta. Salvage is at the base. There's  
7 a long way to go once you hit the South Delta.

8           MR. OBEGI: So I just have a couple more  
9 questions for you.

10           Turning to Page 10, you had a couple  
11 statements regarding the effects of flows on  
12 zooplankton. Do you recall that? I think it's on  
13 Lines 7 to 10, for instance.

14           WITNESS ACUNA: Yes. On 7 to 10, I'm  
15 referring to the Kimmerer paper that just, I believe,  
16 came out earlier this year or at the end of last year,  
17 sometime around that time.

18           MR. OBEGI: And didn't that paper also find  
19 that Delta outflows were actually transporting  
20 pseudodiaptomus to the low salinity zone where they  
21 could be utilized by Delta smelt?

22           WITNESS ACUNA: There was a correlation  
23 suggesting that that might be the case, but they  
24 couldn't fully validate that in that model.

25           What they found was there were three points on



1 the graph. I believe it's -- let's see, Exhibit 1273.

2 Can you -- can that be brought up?

3 Oh, if you scroll down a little bit to the  
4 next page, I think it's Page 4. I'm trying -- I'm  
5 trying to find it in my notes here.

6 It's Figure -- Figure 2, so you have to keep  
7 going. Sorry.

8 That's Figure 2. Okay.

9 So you're talking about this; is that correct?

10 MR. OBEGI: I was actually talking about a  
11 statement that's both in the conclusion up there, of  
12 the paper, as well as in the abstract that talks not  
13 about the flow abundance relationship but talks about  
14 how flow transports pseudodiaptomus to the low salinity  
15 zone

16 WITNESS ACUNA: That's why it's important not  
17 to rely entirely on the abstract. The data -- if  
18 they're referring to -- is this figure, Figure No. 2-C,  
19 suggesting that, as flow increases, the amount of  
20 zooplankton in the low salinity zone increases.

21 As you can see, the value is not great; the  
22 relationship is not very strong, but it's suggestive.  
23 And as it is suggestive, when I -- from my  
24 understanding of the discussion, which is to pursue  
25 this line of reasoning further and does not -- it's not

1 fully -- like, he wouldn't -- I don't know if he'd put  
2 money on it yet, per se.

3 As you can see, only three of the data  
4 points -- the cluster is all the way to the left, and  
5 only three of the data points even show any kind of  
6 relationship whatsoever.

7 MR. OBEGI: And those are the only three data  
8 points where flows were higher than 400 cubic meters  
9 per second?

10 WITNESS ACUNA: Uhm --

11 MR. OBEGI: Or --

12 WITNESS ACUNA: Higher than 200 -- 300 --  
13 yeah. I understand your meaning, yes. So it was only  
14 3- in their -- in their analysis, yes.

15 MR. OBEGI: Okay. Thank you. Last couple  
16 questions.

17 Do you recall the statement -- I believe it's  
18 on Page 6 of your testimony, quote, "It is my opinion  
19 that, as a result of required and voluntary actions,  
20 current entrainment is already very low, and it is  
21 unlikely that additional regulation of SWP-CVP  
22 operations to further reduce entrainment would improve  
23 Delta smelt abundance"?

24 WITNESS ACUNA: Oh, I see. It's at the top of  
25 that page. Yes. That is -- I believe you just read it

1 off the testimony.

2 MR. OBEGI: If further reductions in  
3 entrainment would not benefit Delta smelt, how would  
4 the WaterFix project benefit Delta smelt?

5 WITNESS ACUNA: I'm not really familiar  
6 exactly how WaterFix is supposed to benefit or hurt  
7 Delta smelt. I'm not familiar with the WaterFix  
8 analysis.

9 MR. OBEGI: And yet you also testified that,  
10 quote, "Additional opportunities for operational  
11 flexibility, such as through operations of the CWF,  
12 would facilitate further reductions in Delta smelt  
13 entrainment and stabilization of water supplies." And  
14 that's on Page 5.

15 WITNESS ACUNA: Yes, I refer to flexibility  
16 by itself. Being flexible in management is always  
17 important for determining how best to benefit a  
18 species -- I believe the term is "adaptive  
19 management" -- as adaptive management can be used to  
20 help benefit a species by understanding how best to  
21 do it.

22 If you're inflexible in your regulation, that  
23 could tie your hands and not allow you to use new and  
24 developing information to help better inform and better  
25 protect a species.

1           MR. OBEGI: But you -- I'm a little confused  
2 that you're both suggesting that further reductions in  
3 Delta smelt entrainment could be helpful through CWF  
4 and also state more explicitly that further reductions  
5 and entrainment would not improve Delta smelt  
6 abundance. Do you see the conflict in those  
7 statements?

8           WITNESS ACUNA: So the conflict is in the  
9 species as itself and the individual Delta smelt.  
10 Entrainment, obviously, is not good for Delta smelt as  
11 an individual fish. It's stressful going through a  
12 facility. An artificial environment wouldn't be very  
13 healthful for any of us.

14           But for the species, it seems as if, through  
15 these analyses, that a variety of other factors seem to  
16 be far more important than entrainment. Entrainment  
17 has not been shown to be significantly affecting the  
18 population or impediment into that population's  
19 viability when using those other results.

20           MR. OBEGI: Is it your opinion that having  
21 less negative Old and Middle River flows would benefit  
22 Delta smelt?

23           WITNESS ACUNA: Not by itself. That would be  
24 way too focused. Looking at one factor alone has not  
25 been helpful. As I have stated in my testimony, a

1 variety of factors affect the distribution and a  
2 variety of factors affect the survival.

3 MR. OBEGI: Thank you. I have no further  
4 questions for this witness.

5 CO-HEARING OFFICER DODUC: All right. Before  
6 you move on, let me check with the most important  
7 person here.

8 (Discussion off the record)

9 CO-HEARING OFFICER DODUC: All right.  
10 Then let's proceed.

11 MR. OBEGI: Everyone knew who the most  
12 important person in the room was.

13 Good afternoon, Dr. Hanson.

14 WITNESS HANSON: Good afternoon.

15 MR. OBEGI: I'd like to begin by asking you  
16 some questions about your testimony that there is a  
17 weak trend of increased salmon survival at higher flows  
18 in the Sacramento River. Do you recall that?

19 WITNESS HANSON: I do recall that.

20 MR. OBEGI: And one of the papers that you  
21 included in your testimony was the Michel, et al. --  
22 Michel, et al., 2015 paper, correct? Do you recall  
23 including those graphs?

24 WITNESS HANSON: Cyril Michel?

25 MR. OBEGI: Yes. Again, my pronunciation --

1 for someone who gets his own last name mispronounced  
2 all the time, you'd think I'd be better at this.

3 Are you familiar with that study?

4 WITNESS HANSON: Yes, I am.

5 MR. OBEGI: And doesn't that study conclude  
6 that current salmon survival rates in the Sacramento  
7 River are remarkably low?

8 WITNESS HANSON: It does.

9 MR. OBEGI: And would you agree that that's  
10 correct?

11 WITNESS HANSON: Survival rates are low in  
12 both the Sacramento and the San Joaquin Rivers.

13 MR. OBEGI: And doesn't this paper find  
14 dramatically higher juvenile salmon survival in the  
15 Sacramento River in 2011?

16 WITNESS HANSON: The study encompassed five  
17 years of acoustic tag survival information, and four of  
18 those years were droughts.

19 2011 was a high-flow year. And they did find  
20 that, in 2011, the survival was higher than it was in  
21 the droughts. But just a moment. Let me pull up  
22 the --

23 MR. OBEGI: If we could pull up -- I was just  
24 trying to find the right graphic in your testimony. I  
25 believe it is on -- DWR-1223. I believe it's on

1 Page 22, although, again, I have the -- yes, there it  
2 is.

3 WITNESS HANSON: And what I was going to  
4 reference is the actual paper. And it's Table 4 on --

5 MR. OBEGI: Mr. Hunt, could you pull up  
6 NRDC-40?

7 WITNESS HANSON: Looks like it's on Page 1754.

8 MR. OBEGI: This is a prepublication version.  
9 So I think it's -- if you scroll to the end, Mr. Hunt,  
10 I believe all the tables are at the end.

11 Is that what you were looking for?

12 WITNESS HANSON: That's what I was looking  
13 for. And so the conclusion of this five-year study was  
14 that the survival rate in 2011 was higher. Your  
15 characterization that it was dramatic needs to be put  
16 into context.

17 So in the drought years survival, which is in  
18 bold, was 2.8 percent, 3.8 percent, 5.9 percent and 3.4  
19 percent, all very low.

20 In 2011, it did go up. But it only went up to  
21 15.7 percent, which is still very low.

22 MR. OBEGI: Can we look specifically at  
23 survival in the Sacramento River on this table?

24 WITNESS HANSON: You can look at the river  
25 reach upstream of the Delta, which is referred to as

1 the "dash river."

2 MR. OBEGI: And that's -- this is the --  
3 through the entirety of the Sacramento River, from the  
4 release point pretty high up; is that correct?

5 WITNESS HANSON: Their release point started  
6 out at Coleman and Battle Creek. And because of the  
7 high mortality rate, they had to move it down below  
8 Red Bluff.

9 MR. OBEGI: And isn't it correct that the  
10 river survival rate in 2011 was 63 percent?

11 WITNESS HANSON: It does.

12 MR. OBEGI: And was river survival above  
13 32 percent any of those other years?

14 WITNESS HANSON: The highest other year  
15 appears -- for the river reach alone appears to be in  
16 2009.

17 MR. OBEGI: And survival in 2011 was nearly  
18 double that in 2009, correct?

19 WITNESS HANSON: Correct.

20 MR. OBEGI: And turning back to your  
21 testimony, to -- I believe it was 12- -- there it is.  
22 The confidence intervals for survival in the river  
23 reach do not overlap; is that correct?

24 WITNESS HANSON: For 2011, they do not  
25 overlap.



1 MR. OBEGI: With any of the other years.

2 WITNESS HANSON: With the four dry years.

3 MR. OBEGI: Correct.

4 WITNESS HANSON: But -- oh, sorry.

5 MR. OBEGI: And are you familiar with the  
6 subsequent acoustic tagging work that NMFS has -- that  
7 NOAA Fisheries has done with other agencies.

8 WITNESS HANSON: I'm aware of the work that,  
9 for example, Russ Perry has been doing.

10 MR. OBEGI: How about the work that Iglesias,  
11 et al. have been doing?

12 WITNESS HANSON: I'm aware of it.

13 MR. OBEGI: Mr. Hunt, could you please pull up  
14 the exhibit marked NRDC-210.

15 Have you seen this report before?

16 WITNESS HANSON: I have seen what may have  
17 been an earlier draft of this report. I don't remember  
18 the version I had saying "Corrected."

19 MR. OBEGI: Thank you. And is it your  
20 understanding that the report that you recall seeing  
21 concluded that flow had the greatest effects on smolt  
22 survival in the Sacramento River?

23 WITNESS HANSON: Depending on the data set and  
24 the location of the releases and a whole variety of  
25 factors, flow certainly is an important variable and

1 environmental covariant in terms of the survival  
2 function.

3           It's more important in the riverine reach, and  
4 it becomes less important in the tidal and transitional  
5 reaches of the lower Delta.

6           MR. OBEGI: Mr. Hunt, would you please turn to  
7 Page 22.

8           And do you recall that this analysis  
9 separately looked at both the effects of flow and  
10 migration speed?

11           WITNESS HANSON: One of the -- advantages of  
12 the acoustic tagging studies that were largely expanded  
13 in 2008 is that we can now look at individual reaches,  
14 and we can look at migration speed, we can look at  
15 other environmental covariants, and we can look at  
16 survival.

17           So the pattern of analyses that is typically  
18 in vogue right now is to break those apart and to look  
19 at the interrelationship between flow, water  
20 temperature, a whole variety of factors. And the  
21 foundation for looking at survival as a function of  
22 migration rate is largely attributable to Jim Anderson,  
23 what's called the XT model.

24           MR. OBEGI: And do you recall that this paper  
25 found that the flow survival relationship was the

1 strongest covariant tested and that the migration speed  
2 or travel time was not statistically significantly  
3 related to survival?

4 WITNESS HANSON: I -- without reviewing the  
5 paper, I don't remember specifically. But that  
6 conclusion is one that's certainly out there and we're  
7 paying attention to. On the other hand, there's a  
8 recent paper by Russ Perry that didn't find that  
9 relationship.

10 MR. OBEGI: Was that cited in your testimony?

11 WITNESS HANSON: It wasn't. It was a  
12 paragraph that got deleted.

13 MR. OBEGI: I'd move to strike it then.

14 CO-HEARING OFFICER DODUC: Struck.

15 MR. MIZELL: I'd like maybe some clarity on  
16 that. If Mr. Obegi asks a question and the witness  
17 responds directly to the question --

18 CO-HEARING OFFICER DODUC: And went beyond it.  
19 And went beyond it.

20 MR. OBEGI: Mr. Hunt, could you please pull up  
21 NRDC-46.

22 Do you recall seeing this pulse flow proposal  
23 from a couple years ago?

24 WITNESS HANSON: Was this the proposal that  
25 NMFS submitted for funding through Prop 1?

1 MR. OBEGI: I'm not sure.

2 WITNESS HANSON: Okay. I did see that as a  
3 draft.

4 MR. OBEGI: Could you scroll down to Page 6.

5 CO-HEARING OFFICER DODUC: So did you see  
6 this, Dr. Hanson?

7 WITNESS HANSON: It's hard to tell whether I  
8 saw this exact document because they're all formatted  
9 and look very similar.

10 MR. OBEGI: So let's look at the document and  
11 see if you're familiar with it. This was a discussion  
12 for some pulse flows, but I'd like to draw your  
13 attention on Page 6 to the discussion of prior acoustic  
14 tagging research.

15 And do you see the scientific justification  
16 that the National Marine Fishery Service cites?

17 WITNESS HANSON: I do see that they're relying  
18 on two studies.

19 MR. OBEGI: And they describe this as strong  
20 evidence, correct?

21 WITNESS HANSON: In their wording, they  
22 characterize it specifically, "We have seen strong  
23 evidence," but I'm not aware -- or specifically which  
24 of the two studies they're referring to here.

25 MR. OBEGI: Let's scroll down a little bit.

1           So the first one, I believe, is a spring --  
2 wild spring-run acoustic tagging study from 2013 to  
3 2015 that was done by Jeremy Notch and Flora Cordoleani  
4 and a couple of other folks.

5           You're not familiar with that study?

6           WITNESS HANSON: I'm familiar with that study,  
7 but it may be in part rather than the entirety. I  
8 believe it was a three-year study. And my recollection  
9 is that for the wild spring-run they had remarkably  
10 small sample sizes.

11          MR. OBEGI: I believe in fact that it was --  
12 let's -- we can come back to that.

13          WITNESS HANSON: Yes.

14          MR. OBEGI: Given this graphic here, this flow  
15 survival graphic, would you agree that there -- would  
16 you agree that this shows a strong flow survival  
17 relationship between 4,000 and 6,000 cfs?

18          WITNESS HANSON: This shows for the upper  
19 Sacramento reach that survival between -- it looks like  
20 5,000 and about 5500 did increase, where on the lower  
21 Sacramento not -- you know, there's a lot of  
22 variability around survival estimates at flows less  
23 than 4,000.

24          The relationship's really driven by that one  
25 data point that appears to be 2013.

1           MR. OBEGI: Yeah. So it shows that survival  
2 actually doubled in the Upper Sacramento River between  
3 about 5,000 and 8,000 cfs?

4           WITNESS HANSON: For comparisons only within  
5 this very limited data set, it did double.

6           MR. OBEGI: Yeah.

7           And can we scroll to the next page.

8           Have you seen this plot before by the  
9 Southwest Fisheries Science Center?

10          WITNESS HANSON: I have seen this plot, but  
11 I've also seen the later versions of this.

12          MR. OBEGI: And it also shows a -- shows that  
13 survival more than doubles as you increase from 5,000  
14 to 20,000 cfs?

15          WITNESS HANSON: That's what the lines show.  
16 The difficulty with a plot like this for me is I would  
17 like to see the individual data points so I can see  
18 what the -- the data scatter is and what the survival  
19 results actually are rather than just lines.

20          MR. OBEGI: But this data has been available  
21 and has been shared with the State Water Contractors  
22 previously; isn't that correct?

23          WITNESS HANSON: I think this data has been  
24 shared with lots of folks.

25          MR. OBEGI: Yes.

1           Mr. Hunt, can we briefly pull up NRDC-38.

2           And this is Jeremy Notch's dissertation  
3 describing some of that data. You had asked about --  
4 you wanted to know how many of those fish were actually  
5 acoustically tagged.

6           Can we scroll down to the next page. And if  
7 I'm not able to find it quickly, then we'll just have  
8 to move on.

9           Scroll down one more. And one more.

10          And let's go the abstracts. And scroll down  
11 to the next page.

12          So here we go.

13          This does not have -- never mind. We won't  
14 have to go through this.

15          WITNESS HANSON: It's in that paper, though.

16          MR. OBEGI: And I believe it was that they  
17 found that only one out of the 304 acoustically tagged  
18 fish survived to the ocean from 2013 to 2016.

19          Does that sound about right?

20          WITNESS HANSON: Only one fish out of their  
21 entire sample size was detected in monitoring, I  
22 believe, at the Golden Gate.

23          MR. OBEGI: That sounds about right to me too.

24          So would you agree, then -- I'm a little  
25 confused because your testimony finds that -- states

1 that there's only a weak trend of salmon's increased  
2 survival at higher flows, and yet these studies all  
3 seem to indicate that survival could more than double  
4 at a doubling of flows at certain flow levels.

5 WITNESS HANSON: My characterization of the  
6 weak trend wasn't in response to what the change in  
7 survival would be on a trend basis. My  
8 characterization of a weak trend was the high  
9 variability in the low R squared.

10 MR. OBEGI: And that's -- but that's -- that  
11 was a conclusion that did not actually consider some of  
12 these studies, correct?

13 WITNESS HANSON: That was based on Fish and  
14 Wildlife Service coded wire tag studies. It didn't  
15 take into -- well, I reviewed all the acoustic tag  
16 data, but those graphs that I presented were based on  
17 coded wire tag studies.

18 MR. OBEGI: Thank you. Could we turn to Page  
19 20 to 21 of your written testimony.

20 Do you recall comparing the flows in 2006 and  
21 2009 and the subsequent abundance of salmon three years  
22 later?

23 WITNESS HANSON: I did.

24 MR. OBEGI: Isn't it true that the salmon that  
25 entered the ocean in 2006 faced incredibly inhospitable



1 ocean conditions?

2 WITNESS HANSON: The results of an analysis  
3 that Steve Lindley and a group from NMFS conducted  
4 showed that ocean productivity for a variety of species  
5 was substantially less than in many other years, and  
6 hypothesized that that lower productivity led to higher  
7 mortality of the juveniles that were rearing in the  
8 ocean.

9 But I used it, fully knowing that, as an  
10 example of how you can make a prediction based on flow  
11 and be wrong because some other intervening variable  
12 that you may not have had control over has a big effect  
13 on a population.

14 MR. OBEGI: But you didn't happen to mention  
15 in your testimony that this was explained by poor ocean  
16 conditions.

17 WITNESS HANSON: I don't believe that I did.

18 MR. OBEGI: Don't you think that's a little  
19 misleading?

20 MR. BERLINER: Objection, argumentative.

21 CO-HEARING OFFICER DODUC: Sustained.

22 MR. OBEGI: Thank you.

23 And that kind of analysis between flow and  
24 abundance is different than doing analysis between flow  
25 and survival, correct?

1 WITNESS HANSON: Correct.

2 MR. OBEGI: And the coded wire tag studies  
3 suffer from that same problem of relating flow to  
4 survival after intervening life stages, correct?

5 WITNESS HANSON: The coded wire tag studies  
6 have pros and cons. And they suffer from some  
7 limitations, but they also have the advantage that  
8 those coded wire tag fish are subsequently recaptured  
9 in the ocean commercial fishery.

10 So we can get, in essence, a single survival  
11 estimate from the time they were released in the river  
12 all the way out to the time they were harvested in the  
13 ocean. Acoustic tag studies, because of the  
14 limitations of battery life, don't have that longevity.

15 MR. OBEGI: So that, to the extent that you  
16 find a low correlation between coded wire tag results  
17 coded wire tag abundance -- sorry.

18 To the extent you find a low correlation  
19 between abundance from coded wire tag studies and flow,  
20 that could be due to intervening effects, like ocean  
21 conditions, correct?

22 WITNESS HANSON: It depends entirely on your  
23 analysis. The analyses that I presented in this  
24 declaration were limited to survival estimates at  
25 Chipps Island. So they were still juveniles on their

1 out-migration journey. They had not entered the ocean.  
2 So there's no influence of ocean conditions on that  
3 survival estimate, but if you continue to look at that  
4 life cycle for the next three years, then ocean  
5 conditions do have an effect.

6 MR. OBEGI: Like this testimony that we were  
7 just talking about?

8 WITNESS HANSON: It does, although as part of  
9 the VAMP studies, we compared survival estimates based  
10 on trawling at Chipps Islands versus the estimates of  
11 survival from the ocean, and they were pretty well  
12 correlated.

13 (Time signal)

14 CO-HEARING OFFICER DODUC: That was just to  
15 mark the passing of one hour.

16 MR. OBEGI: Do you want to break now, or do  
17 you want to continue with this witness?

18 CO-HEARING OFFICER DODUC: Do you expect  
19 needing another hour?

20 MR. OBEGI: I -- not for this witness, but I  
21 do expect needing another hour.

22 CO-HEARING OFFICER DODUC: Then let's go ahead  
23 and take a short break until 5:00.

24 Is that okay, Debbie?

25 All right.

1 (Recess taken)

2 CO-HEARING OFFICER DODUC: It is 5:00 o'clock.

3 We are resuming.

4 Mr. Mizell, I believe you have a housekeeping  
5 matter.

6 MR. MIZELL: Yes, if Mr. Obegi wouldn't  
7 object, if he is done with Dr. Acuna and Dr. Phillis,  
8 they have first-day-of-school duties they'd like to  
9 take care of and not stay.

10 Obviously, if you have further questions for  
11 them, we'll keep them around.

12 MR. OBEGI: I'm done with those witnesses.

13 CO-HEARING OFFICER DODUC: Thank you.

14 Thank you, Dr. Acuna and Dr. Phillis.

15 Another housekeeping matter, Ms. Morris?

16 MS. MORRIS: Yes. I'm still waiting to hear  
17 back. I've been trying to coordinate with Mr. Ruiz  
18 about the bathymetry cross-sections. So I just wanted  
19 to let you know, I haven't gotten a definitive answer  
20 of which ones were used. And you'll recall that I may  
21 be asking you to bring him back. So that's not  
22 resolved as of this point.

23 CO-HEARING OFFICER DODUC: All right.

24 Mr. Ruiz or Mr. Herrick will be here first thing in the  
25 morning, so we will tackle that then.

1           And before we get back to Mr. Obegi, I have a  
2 ruling to issue. This is in response to a motion by  
3 Mr. Herrick on behalf of South Delta Water Agency  
4 parties asking that we strike rebuttal testimony by  
5 Walter Bourez regarding the 2010 Delta flow criteria  
6 report.

7           That motion is denied for reasons that we  
8 articulated in our earlier ruling regarding rebuttal  
9 testimony by Dr. Hutton, Dr. Hanson, and Dr. Acuna. We  
10 find that Mr. Bourez's testimony is responsive to  
11 Part 2 case-in-chief evidence introduced by another  
12 party, namely the CSPA exhibit comprising the 2010  
13 Delta Flow Criteria Report.

14           And with that, Mr. Obegi, I turn back to you.

15           MR. OBEGI: Thank you.

16           Dr. Hanson, I'd like to ask you a few  
17 questions about the effects of project operations in  
18 the Delta.

19           Is it your opinion that reducing exports from  
20 the South Delta would improve survival of salmon from  
21 the San Joaquin River?

22           WITNESS HANSON: You would think that it  
23 would. The concern I have is that we completed a big  
24 literature review on San Joaquin River salmon survival  
25 studies. We've been doing -- we collectively and

1 collaboratively have been doing acoustic tag studies in  
2 the San Joaquin River as part of the six-year steelhead  
3 study as well as the Chinook salmon study.

4           And at least to date, we haven't seen a strong  
5 foundational linkage between some of the operational  
6 parameters and survival estimates.

7           The survival estimates have been low,  
8 regardless of how the operation goes. And, in fact,  
9 some of the highest survival that we've seen are for  
10 fish that were salvaged at the CVP. So it's  
11 inconclusive.

12           MR. OBEGI. And are you aware that the  
13 Biological Assessment appears to assume that reduced  
14 exports and increased flow in the San Joaquin River  
15 would -- that the WaterFix project as proposed would  
16 increase salmon survival from the San Joaquin River?

17           WITNESS HANSON: I'm not familiar specifically  
18 with the WaterFix analyses, but we have certainly come  
19 to similar kinds of preliminary conclusions; that by  
20 improving flows in the San Joaquin River, we think  
21 that's a factor that influences particularly the San  
22 Joaquin River-side salmon production.

23           MR. OBEGI: And then on the Sacramento  
24 River-side, is it your understanding that the NMFS has  
25 found there is a strong relationship between survival

1 and flow in those transitional reaches into the Delta?

2 WITNESS HANSON: The paper that I tried to  
3 cite earlier, the Russ Perry, et al., 2018 report,  
4 found that -- and it was a more sophisticated analysis  
5 than what had been done up to this point. And it found  
6 that in the riverine reach and tidally dominated reach  
7 there wasn't a good relationship between survival and  
8 flow.

9 But in those transitional reaches, that  
10 boundary between the uniform riverine section and the  
11 bimodal tidal section, they did find that increased  
12 flow increased survival.

13 MR. OBEGI: And that increase was seen until  
14 flows got up to about 30- or 40,000 cubic feet per  
15 second?

16 WITNESS HANSON: I believe that was about as  
17 high as they analyzed.

18 MR. OBEGI: And even Cyril Michel's paper  
19 found that, in the Delta, survival was higher in the  
20 high-flow year of 2011 than in the lower -- than in  
21 those other years, correct?

22 WITNESS HANSON: He did find that.

23 MR. OBEGI: And are you aware that NMFS  
24 concluded in the Biological Opinion that reduced OMR as  
25 a result of WaterFix would have significant benefits

1 for migrating salmon?

2 CO-HEARING OFFICER DODUC: Hold on, please.

3 Ms. Sheehan.

4 MS. SHEEHAN: I believe the witness just  
5 testified that he wasn't aware of -- fully aware of all  
6 the Cal WaterFix analyses. So perhaps you could  
7 establish that first he's aware of the requirement that  
8 you're asking him about.

9 MR. OBEGI: Mr. Hunt, would you please pull up  
10 State Water Board 106 -- and turning to Page 700, and  
11 scroll down.

12 CO-HEARING OFFICER DODUC: Ms. Morris?

13 MS. MORRIS: I just wanted to add another  
14 objection that this is outside the scope of this  
15 witness's testimony. Dr. Greenwood provided  
16 information specifically on salmon survival and  
17 WaterFix, and this witness is providing information  
18 only on current conditions and existing conditions and  
19 not on WaterFix.

20 You'll recall that panels and the biologists  
21 were split in that fashion. So this appears to be  
22 outside the scope because it's dealing directly with  
23 WaterFix.

24 CO-HEARING OFFICER DODUC: Mr. Obegi.

25 MR. OBEGI: The question pertains to the



1 effects of OMR, which is well within the scope of his  
2 testimony. And I want to confront him with what  
3 appears to be contradictory evidence that's been put on  
4 by the petitioners.

5 CO-HEARING OFFICER DODUC: With respect to  
6 existing conditions?

7 WITNESS OBEGI: With respect to the effects of  
8 OMR.

9 CO-HEARING OFFICER DODUC: Okay. Overruled.

10 MR. OBEGI: Are you aware of these analyses in  
11 the Biological Opinion?

12 WITNESS HANSON: I am aware of the Zeug and  
13 Cavallo 2014 analysis. I am not aware of their  
14 application specifically to the WaterFix BiOp.

15 MR. OBEGI: And this graphic here seems to  
16 show that reduced, less negative OMR would result in  
17 lower salvage.

18 MR. MIZELL: Objection. This graphic  
19 proposes -- or purports to speak to two scenarios; a No  
20 Action Alternative, which is a future scenario, and a  
21 project alternative which is California WaterFix.

22 Nothing in this graph pertains to existing  
23 conditions and how OMR would relate to existing  
24 conditions. Therefore, it's beyond the scope of  
25 Dr. Hanson's testimony.

1 CO-HEARING OFFICER DODUC: Mr. Obegi.

2 MR. OBEGI: The proposed action, as I  
3 understand it at least, proposes reductions in OMR that  
4 are driving this relationship, and the -- the only  
5 change here appears to be the change in OMR that would  
6 be driving that relationship, which is consistent with  
7 the scope of his testimony.

8 MR. MIZELL: Nothing in this graphic speaks to  
9 existing conditions.

10 CO-HEARING OFFICER DODUC: So make the  
11 connection more clearly for me, Mr. Obegi. It's  
12 getting late in the day.

13 MR. OBEGI: Let's skip this one. That is  
14 fine.

15 Now, you mentioned the OBAN life cycle model  
16 in your rebuttal testimony; isn't that correct?

17 WITNESS HANSON: I don't remember OBAN  
18 specifically. I did talk about life cycle modeling.  
19 But it wouldn't surprise me; OBAN is one of the life  
20 cycle models that's been applied.

21 MR. OBEGI: And can we pull up State Water  
22 Resources Control Board 104, which is the Biological  
23 Assessment, and Appendix 5.D. The first one. Not  
24 Attachment 1. Go back. Sorry.

25 Yeah. Page 558.

1           And do you see the line under "Results" that  
2 says, quote, "Reductions in South Delta exports showed  
3 potential to improve this recovery"?

4           MR. BERLINER: Perhaps we could start with  
5 asking the witness if he has ever seen this document,  
6 since he indicated he was not familiar with WaterFix  
7 necessarily.

8           MR. OBEGI: My apologies.

9           MR. BERLINER: Thank you.

10          MR. OBEGI: Are you familiar with this  
11 document?

12          WITNESS HANSON: I am not.

13          MR. OBEGI: But you're familiar with the OBAN  
14 model?

15          WITNESS HANSON: Generally, yes.

16          MR. OBEGI: And this statement that reductions  
17 in South Delta exports showed potential to improve  
18 salmon recovery, is that consistent with your  
19 understanding of the OBAN model?

20          WITNESS HANSON: It's hard for me to answer.  
21 I mean, This is such a big document, and I haven't read  
22 it.

23                 In some of the earlier analyses, some of the  
24 life cycle models, including OBAN, didn't show much of  
25 a response. They may have changed some of the

1 parameters or updated the model in a way that I'm not  
2 familiar with, so I really can't speculate on what that  
3 model might have shown.

4 MR. OBEGI: And are you familiar with the  
5 Delta Passage model?

6 WITNESS HANSON: I am.

7 MR. OBEGI: Can we turn to Page 249 of this  
8 exhibit.

9 Are you familiar with these flow survival  
10 graphs from the Delta Passage model?

11 WITNESS HANSON: I'm not familiar with these  
12 specific graphs, no.

13 MR. OBEGI: Then let's turn to Page 251.

14 And this is all in the discussion of DWR's  
15 Biological Assessment describing the Delta Passage  
16 model. This is their relationship between exports and  
17 salmon survival through the Delta.

18 Have you seen this graphic -- graph before?

19 WITNESS HANSON: I have seen an earlier  
20 version of this, I presume, probably in its development  
21 stage.

22 MR. OBEGI: And isn't it correct that this  
23 shows that survival is cut in half as exports go from  
24 zero to 12,000 cfs?

25 WITNESS HANSON: Again, it's a little

1 difficult to take this out of context but, you know, I  
2 would -- a whole series of questions come to mind  
3 about, you know, what were the data used that actually  
4 calibrate and validate this model, and how robust is  
5 it. But if you just step back and purely take this at  
6 face value and you look only at the line, then you  
7 could draw that conclusion.

8 I'm not -- I haven't looked at it, and I'm not  
9 really prepared to do that. But hypothetically, that's  
10 what you could do with this.

11 MR. OBEGI: So is it your opinion that --  
12 never mind. Just a couple more questions for you.

13 You cited to the Poff and Zimmerman paper on  
14 Page 6 of your testimony.

15 Do you recall that?

16 WITNESS HANSON: I don't, but let me take a  
17 look.

18 MR. OBEGI: I believe it's around Line 17.

19 MR. HANSON: And you're referring to their  
20 review of 165 flow studies?

21 MR. OBEGI: Mm-hmm.

22 WITNESS HANSON: Yes.

23 MR. OBEGI: I was a little confused by this  
24 part of your testimony.

25 Am I correct that that paper is concluding

1 that alterations from the natural flow regime result in  
2 adverse responses?

3 WITNESS HANSON: They -- they looked at a  
4 whole range of studies, and they found that some of the  
5 results were robust and some of the results weren't.  
6 And they hypothesized that the difference between those  
7 had to do with the degree of alteration that had  
8 occurred in the channels. The more highly altered the  
9 channels were, the less that change would provide  
10 positive benefits.

11 MR. OBEGI: Mr. Hunt, could we pull up  
12 DWR-1330.

13 Can you point me to where it reaches that  
14 conclusion?

15 WITNESS HANSON: Can you please scroll down a  
16 little bit.

17 Part of my recollection is it may have been in  
18 the discussion section which was towards the end of the  
19 paper.

20 At least in what I've read, I haven't found  
21 that.

22 MR. OBEGI: And in fact, of what you read,  
23 isn't it showing that the -- that changes to the flow  
24 regime from natural flows result in adverse effects  
25 on -- adverse environmental impacts and ecological

1 consequences?

2           WITNESS HANSON: I think this body of work,  
3 not this paper specifically, were intended to show that  
4 changes from the natural flow regime have adverse  
5 effects on benthic organisms and fish, but that when  
6 more natural flow regimes were imposed, we didn't  
7 always get a biological response that we predicted.

8           And I don't remember if it was from this paper  
9 specifically, but it was that whole body of the natural  
10 flow regime literature.

11           MR. OBEGI: But you can't find it in this  
12 paper?

13           WITNESS HANSON: I didn't see it as we were  
14 just scrolling through, no.

15           MR. OBEGI: I'd move to strike that part of  
16 his testimony as lacking foundation.

17           CO-HEARING OFFICER DODUC: Response?

18           MR. MIZELL: I believe in his testimony he  
19 cites to certain page numbers. We've looked at one  
20 paragraph, because the witness is being put on the spot  
21 to recall a lengthy paper.

22           If we could maybe have him take a moment to  
23 review his testimony and see if the page cites are  
24 indeed provided, we can go to those cites and provide a  
25 better foundation.

1 CO-HEARING OFFICER DODUC: Let us then just  
2 take Mr. Obegi's motion into consideration and have  
3 Dr. Hanson come back tomorrow with the answer.

4 MR. OBEGI: That would be great. And I think  
5 that will close my cross-examination of Dr. Hanson.

6 Good afternoon, Dr. Hutton.

7 WITNESS HUTTON: Good afternoon.

8 MR. OBEGI: I'd like to begin by asking you  
9 some questions about the trends in Delta outflow.

10 So the analysis that you did beginning on Page  
11 5, that's analyzing changes in annual Delta outflow,  
12 correct?

13 WITNESS HUTTON: Yes.

14 MR. OBEGI: And doesn't your testimony admit  
15 that there actually is a statistically significant  
16 decline in annual Delta outflow over the 1922 to 2015  
17 period?

18 WITNESS HUTTON: No, it does not.

19 MR. OBEGI: So let's look at the graph on  
20 Page 9 of your testimony.

21 And that first graphic is showing -- showing  
22 the time series of Delta outflow, correct?

23 WITNESS HUTTON: This is in fact a normalized  
24 Delta outflow. So this is normalized to the  
25 eight-river index. So this is not the Delta outflow



1     itself.

2                   MR. OBEGI:   But it's showing that -- when the  
3     Delta outflow, when the eight-river index is less than  
4     20 million acre-feet is the red line?

5                   WITNESS HUTTON:   Correct.

6                   MR. OBEGI:   And it's showing a decline in  
7     Delta outflow over the time period?

8                   WITNESS HUTTON:   A decline in the normalized  
9     Delta outflow.

10                  MR. OBEGI:   And then when the eight-river  
11    index is greater than 20 million acre-feet, that's the  
12    black line?

13                  WITNESS HUTTON:   Correct.

14                  MR. OBEGI:   And it's also showing a decline in  
15    Delta outflow over that time period?

16                  WITNESS HUTTON:   A decline in normalized Delta  
17    outflow.

18                  MR. OBEGI:   And is it your understanding that,  
19    over this full time period, there are greater  
20    alterations to Delta outflow in the drier years than in  
21    the wetter years?

22                  WITNESS HUTTON:   Could you be more -- could  
23    you be more specific with that question?

24                  WITNESS OBEGI:   Is it your understanding that  
25    diversions and exports result in a greater diminution

1 of Delta outflow in drier years, when there's less  
2 water available, than in wet years?

3 WITNESS HUTTON: My analysis of Delta outflow  
4 did not look specifically at that question. If I look  
5 at the -- this plot that's currently up there with the  
6 normalized Delta outflow and I look at the slopes with  
7 the black -- black line would be the wetter years; the  
8 red line would be the drier years -- I would look at  
9 that and say, to me, the slopes look somewhat similar  
10 until you get to into the more recent years, say,  
11 around 1980.

12 And in that case, you see where that trend has  
13 actually flattened out or started to reverse. So  
14 I -- I don't agree with the statement.

15 MR. OBEGI: Does this graphic include 2014 and  
16 2015 on it?

17 WITNESS HUTTON: I should know that off the  
18 top of my head, and I -- yes, it says -- yes, this was  
19 through 2015.

20 MR. OBEGI: Thank you.

21 Now let's turn to the seasonal trends in Delta  
22 outflow. There's is -- in your testimony, you admit  
23 there's a statistically significant long-term seasonal  
24 trend in Delta outflow over the 1922 to 2015 period?

25 WITNESS HUTTON: Yes, there are seasonal

1 trends, both upward and downward, in outflow.

2 MR. OBEGI: And is it your understanding that  
3 the seasonal trend in spring outflow would be downward?

4 WITNESS HUTTON: The long-term trend in the  
5 months of April and May are -- yes, are downward over  
6 the entire period of record.

7 MR. OBEGI: And if we could, Mr. Hunt, turn to  
8 Page 11.

9 Am I correct that this graph, in the upper  
10 left corner, is showing the monthly trends in Delta  
11 outflow over the 1922 to 2015 period?

12 WITNESS HUTTON: Yes, it is showing the slope.  
13 So if you see a negative value, that would imply that  
14 it is a -- a decreasing flow and a -- if the bar is  
15 going upwards, it's a positive. And then the color  
16 coding indicates if it was statistically significant or  
17 not. So the colored blue bars indicate statistical  
18 significance.

19 MR. OBEGI: So February, April, and May show  
20 statistically significant reductions in Delta outflow  
21 over the full time period?

22 WITNESS HUTTON: Correct.

23 MR. OBEGI: But isn't it true that the  
24 entirety of October to June shows reductions in Delta  
25 outflow even though some of those months are not

1 statistically significant?

2 WITNESS HUTTON: Yes, there are several months  
3 in that period where they're showing decreases that are  
4 not statistically significant.

5 MR. OBEGI: And in the 1968 to 2015 period,  
6 that's the upper right corner?

7 WITNESS HUTTON: Yes.

8 MR. OBEGI: And even though they're not  
9 statistically significant, there are decreases -- well,  
10 two questions first.

11 There are -- you're showing a statistically  
12 significant reduction in Delta outflow in the months of  
13 October and November during this 1968-to-2015 period,  
14 correct?

15 WITNESS HUTTON: That is correct.

16 MR. OBEGI: And September would also be  
17 statistically significant, depending upon certain  
18 assumptions?

19 WITNESS HUTTON: It's ambiguous because the  
20 significance of September is ambiguous.

21 WITNESS OBEGI: And the months of January,  
22 February, March show large-magnitude reductions in  
23 Delta outflow, but they're not statistically  
24 significant?

25 WITNESS HUTTON: Yes, and that -- this does

1 get to the issue of statistical significance. So even  
2 if we're showing increases or decreases, if it's not  
3 statistically significant, then one should ask the  
4 question, is it in fact significant.

5 MR. OBEGI: And isn't it true that by  
6 averaging wet years and dry years you may mask results  
7 that would be statistically significant in certain  
8 water year types?

9 WITNESS HUTTON: I don't think I can agree  
10 with the way the question was -- I couldn't follow,  
11 actually, the logic, the way the question was phrased.

12 MR. OBEGI: Let me phrase a different  
13 question.

14 By decomposing this analysis into monthly data  
15 sets, does that also -- never mind. Let me -- are  
16 you -- let me take a different line of inquiry.

17 Are you aware of analyses that have looked at  
18 seasonal changes in Delta outflow rather than  
19 month-by-month changes?

20 WITNESS HUTTON: Could you describe seasonal?

21 MR. OBEGI: Yes.

22 Mr. Hunt, could you please pull up NRDC-213.

23 And this is the 2015 State of the Estuary  
24 report and the technical appendix on water quality.

25 Have you seen this report before?

1           WITNESS HUTTON: We can flip through this.

2 I'm not sure that I have.

3           MR. OBEGI: Mr. Hunt, could you turn to Page

4 59, please.

5           And this is an analysis done for the State of

6 the Estuary report that compares the annual bay inflow

7 comparing unimpaired and historic flows by decade.

8           Have you seen this analysis before?

9           WITNESS HUTTON: I don't believe so.

10          MR. OBEGI: And does it -- looking at the

11 graph on the right-hand side, does it appear to show a

12 reducing percentage of unimpaired flows by decade on an

13 annual basis?

14          WITNESS HUTTON: Since I haven't seen this

15 before, I will need to take some time to look at the

16 chart.

17          MR. BERLINER: Mr. Obegi, do you have a hard

18 copy of this by chance?

19          MR. OBEGI: I do not, unfortunately.

20          MR. BERLINER: I would just direct the

21 witness, if you want to see more, have Mr. Hunt scroll

22 the pages for you.

23          WITNESS HUTTON: So what I can gather from

24 this chart is that this is similar -- it's showing a

25 normalized trend, similar to what -- Figure 3 in my

1 testimony, instead of -- in my testimony, annual -- or  
2 outflow was normalized to the eight-river index, and  
3 here it's being normalized to unimpaired outflow.

4 MR. OBEGI: And so it's pretty -- it reaches a  
5 similar conclusion, correct, or it appears to?

6 WITNESS HUTTON: Yeah. This is not -- it is  
7 showing -- it is showing a -- this is showing a  
8 downward trend. I would not -- I wouldn't draw the  
9 same conclusions, first off.

10 But just by virtue that this is using the  
11 unimpaired flow value, the unimpaired Delta outflow is  
12 a theoretical or a -- of a fictional value. So if  
13 you're -- if you're trying to draw inferences about  
14 trends and what has happened, unimpaired flow has never  
15 happened.

16 So I can't say that -- I don't believe that  
17 anything that you could infer from this would be the  
18 same as what would be inferred from my Figure 3.

19 CO-HEARING OFFICER DODUC: Mr. Obegi, if I  
20 might interrupt.

21 For those of us who are statistically  
22 challenged, Dr. Hutton, what do you mean when you say  
23 "normalized"?

24 WITNESS HUTTON: Oh, I'm sorry. So in my  
25 chart and in this chart, the value that's being showed

1 on the Y axis, it would be the outflow as a per- -- as  
2 a fraction of something else.

3 And in this case, it would be a -- a  
4 fraction -- I believe is what's being shown here, it  
5 would be a fraction or a percent of the unimpaired  
6 flow.

7 And in the case of my testimony in 3, it's a  
8 fraction of the eight-river index.

9 CO-HEARING OFFICER DODUC: And is that to  
10 address some larger variability issue? Why do you do  
11 that?

12 WITNESS HUTTON: The reason I did it in my  
13 testimony is -- you know, when I looked at the  
14 statistical analysis of just the Delta outflow and it's  
15 not showing a trend, I had to really scratch my head at  
16 that because, I mean, we know that water use has gone  
17 up since the 1920s. So why aren't we seeing that same  
18 trend with outflow?

19 And by normalizing, you're effectively -- so  
20 it's saying by normalizing to something like the  
21 eight-river index, you're -- what you're showing is  
22 that in fact -- that is showing that water use has gone  
23 up over time.

24 My testimony is saying in spite of -- by  
25 looking at just the annual outflow without it



1 normalizing, what it's saying is that, in spite of  
2 water use going up, the -- just the natural climatic  
3 variability is so great in the system that that trend  
4 that you're seeing is not statistically significant.

5 MR. OBEGI: And when you use the -- normalize  
6 to the eight-river index, wasn't part of that an intent  
7 to account for changes in climatic conditions?

8 WITNESS HUTTON: No. That was to actually  
9 filter out the climatic conditions from the -- from the  
10 analysis, because it -- the -- by normalizing it,  
11 you're taking it out of the analysis.

12 So it -- in a way, what that analysis would be  
13 saying, hey, if you've got the same climatic condition,  
14 you're seeing the outflow decrease, which what that's  
15 indicating is that water use has gone up since the  
16 1920s.

17 MR. OBEGI: And using -- comparing to  
18 unimpaired flow is also a way to try to normalize for  
19 climatic conditions; isn't that correct?

20 WITNESS HUTTON: That gets to my testimony  
21 again, as I would not -- the eight-river index is an  
22 unimpaired flow, but it is an unimpaired flow at the  
23 rim, the runoff to the Central Valley.

24 I don't -- I -- it is my opinion that the  
25 unimpaired Delta outflow is not a metric that should be

1 used for -- I see very little value in the metric of  
2 unimpaired Delta outflow.

3 MR. OBEGI: And we'll get to that.

4 But the unimpaired flow is based on the  
5 eight-river index, correct? That is a building block?

6 WITNESS HUTTON: Yeah. If I -- to answer that  
7 question, let's say what the unimpaired Delta outflow,  
8 what that assumes is that all the landscape of the  
9 Central Valley is like it is today, not like it was  
10 historically.

11 So instead of having the water come off the  
12 watershed and down into the Central Valley, instead of  
13 it flooding out into the landscape, it's being retained  
14 in the rip-rap -- rip-rapped levees and going all the  
15 way from the mountains, all the way to the Delta and  
16 nothing happening to it.

17 So, essentially, the unimpaired flow  
18 calculation is just assuming whatever precipitation you  
19 had up in the mountains, it's just -- all of it's going  
20 to reach the Delta. And that gets to my concern about  
21 the unimpaired flow calculation, is that is in fact not  
22 what happened under natural conditions.

23 MR. OBEGI: And we'll get to that.

24 Mr. Hunt, could you please turn to Page 62.

25 And so in addition to doing annual changes in

1 flow, they also looked at seasonal --

2 Sorry. Mr. Hunt, could you scroll up one page  
3 to --

4 So this is the spring seasonal outflow, which  
5 is looking at the February-to-June period, as I  
6 understand it. And it also finds a -- turning to the  
7 next page, the figure shows a declining trend in spring  
8 flow to the Bay.

9 MR. BERLINER: Do you mean inflow as opposed  
10 to outflow?

11 MR. OBEGI: Inflow to the Bay which, in this  
12 report, is the equivalent of Delta outflow.

13 CO-HEARING OFFICER DODUC: Ms. Morris.

14 MS. MORRIS: For the record's purpose,  
15 Mr. Obegi said "outflow" on the above page, and it does  
16 say "inflow."

17 MR. OBEGI: Bay inflow.

18 MS. MORRIS: Just for the record. I'm not  
19 trying to be nit-picky. I'm sorry.

20 MR. OBEGI: That's okay.

21 And you previously concluded that there was a  
22 statistically significant reduction in several of the  
23 spring months in terms of Delta outflow, correct?

24 WITNESS HUTTON: Yes, in the spring months of  
25 April and May.

1           MR. OBEGI: And reductions in flow in other  
2 months that were not statistically significant but  
3 were -- but reductions nonetheless?

4           WITNESS HUTTON: Yes.

5           MR. OBEGI: And isn't -- so to some extent,  
6 this analysis is consistent with those conclusions --  
7 with your conclusions that, at least in several of  
8 those months, spring outflow has been showing a  
9 declining trend over the time series?

10          MR. BERLINER: Objection. Vague as to use of  
11 the term "to some extent." That's all relative.

12          CO-HEARING OFFICER DODUC: Mr. Obegi.

13          MR. OBEGI: I was giving the expert room to be  
14 able to qualify his answer.

15          CO-HEARING OFFICER DODUC: Go ahead.

16          WITNESS HUTTON: Yeah, so I guess my broader  
17 answer to this would be, if we're talking about -- we  
18 are talking about trends here. I would -- I would  
19 refer to the work that is in my testimony. This has  
20 been peer-reviewed work.

21                 And I -- again, I have not -- I've been giving  
22 opinions based on my understanding of this chart, just  
23 looking at it for the first time. I've not read  
24 through this, and I really can't opine about the  
25 credibility of the overall analysis in this document.

1 MR. OBEGI: Thank you.

2 So let's talk more about natural versus  
3 unimpaired flow conditions.

4 Mr. Hunt, could you please pull up DWR-1384.

5 And you cite this report in your testimony,  
6 correct?

7 WITNESS HUTTON: Yes.

8 MR. OBEGI: Are you familiar with it?

9 WITNESS HUTTON: Yes, I am.

10 MR. OBEGI: Did you help write it?

11 WITNESS HUTTON: I was -- I was -- I was  
12 working with the staff at DWR to understand some of  
13 The -- the work that was used in the modeling including  
14 the evapotranspiration and the land use. And I was --  
15 I was involved in reviewing parts of this document.

16 MR. OBEGI: And was this document  
17 peer-reviewed?

18 WITNESS HUTTON: No, it wasn't.

19 MR. OBEGI: And turning to Page 2 -- sorry. I  
20 think it's Page 2 of the document, not pdf.

21 Give me a second. I'm going to need to find  
22 the correct page number.

23 Isn't it correct that this report explicitly  
24 states that it's not an estimate of actual flows that  
25 occurred under pre-settlement conditions?

1           WITNESS HUTTON: That is correct. And if I  
2 could explain what that means is that, like many  
3 analyses, they've -- this is a -- what the modeling  
4 folks call a "level-of-development analysis," which  
5 means they took -- they used the climatic conditions of  
6 water years 1922 through -- I don't know if this is  
7 2014 or 2015, somewhere in that period. And assuming  
8 that climate, they superimposed the landscape of the  
9 natural conditions on that.

10           So insomuch that this doesn't reflect any  
11 paleo -- this analysis does not reflect any paleo  
12 hydrologic conditions; this reflects the more  
13 contemporary hydrologic conditions but superimposed  
14 upon it the natural landscape.

15           MR. OBEGI: So it does not show the natural  
16 outflow or salinity conditions in the Delta?

17           WITNESS HUTTON: It shows what the natural  
18 outflow and salinity would have been if -- if it would  
19 have -- if the 1922 to 2015 hydrologic sequence would  
20 have repeated itself -- would have occurred prior to  
21 settlement.

22           MR. OBEGI: But we don't know what those  
23 hydrologic and climatic conditions were, do we?

24           WITNESS HUTTON: It depends to what level.  
25 There are tree-ring analyses, and there are -- there

1 are other analyses that try to get to that, but  
2 certainly it's -- there's certainly a much higher -- a  
3 very high level of uncertainty in terms of what the  
4 paleo hydrology was.

5 MR. OBEGI: And even in the 1922-to-2014  
6 period, would you agree that climate change has already  
7 changed the timing and amount of flows?

8 WITNESS HUTTON: Could you expand on the word  
9 "flows"?

10 MR. OBEGI: I can narrow the question.  
11 Would you agree that, during that 1922-to-2014  
12 period, climate change has already shifted the timing  
13 of runoff into the rim reservoirs?

14 WITNESS HUTTON: Yes.

15 MR. OBEGI: So that would be different from  
16 the pre-settlement conditions?

17 WITNESS HUTTON: Well, I -- I actually don't  
18 know. It -- guess we'd have to talk about -- when you  
19 say "pre-settlement conditions," how far would you go  
20 back?

21 MR. OBEGI: Well, doesn't this paper discuss  
22 the pre-settlement conditions?

23 WITNESS HUTTON: Well, that -- so you're  
24 referring to natural -- are you referring to natural  
25 conditions?

1           So certainly what I understand about climate  
2 change is that there has been a -- there has been a  
3 shift in the -- the snow melt patterns from, say, the  
4 early 20th century.

5           I guess where -- what I'm not sure -- I can't  
6 say one way or another, depends how far you go back --  
7 is we may have been under another -- there may -- in  
8 the long record of paleo conditions, there may have  
9 been another period where there may have been a warming  
10 trend as well.

11           MR. OBEGI: And is it your understanding that  
12 salinity conditions in the Delta would also depend on  
13 changes to Delta geometry?

14           WITNESS HUTTON: Yes. And in fact, one of the  
15 papers in my -- in my testimony actually account for  
16 that and was -- we studied that.

17           That was DWR Exhibit 1287.

18           MR. OBEGI: Thank you.

19           Mr. Hunt, could you turn to Page 3, which is  
20 PDF Page 11. And, actually, scroll up to the prior  
21 page at the very bottom.

22           The report explains that it was designed to  
23 overcome information gaps that were identified in  
24 previous unimpaired flow publications.

25           Do you recall that part of the report?



1           WITNESS HUTTON: Yeah. I'm reading that right  
2 now.

3           MR. OBEGI: And so you've done work on the  
4 second one of those information gaps, riparian  
5 vegetation and water surfaces; and also the third one,  
6 correct?

7           If you could scroll to Page 11 at the top  
8 there.

9           WITNESS HUTTON: Yes. So the papers in  
10 my testimony -- the Fox, et al. paper and the  
11 Howes, et al. paper -- go to the second point of  
12 consumptive use of riparian vegetation.

13           The modeling that DWR conducted would have  
14 gone to the first item, groundwater accretions, and  
15 also the third, overflowing of banks.

16           MR. OBEGI: So on that second point, is it  
17 correct that this report concluded that Fox, et al.,  
18 2015, and Howes, et al., 2015, overestimated the water  
19 use for vernal pools?

20           WITNESS HUTTON: I don't recall that.

21           MR. OBEGI: If you'd turn Page 71 of the pdf.  
22 You see the paragraph that begins, "In Howes,  
23 et al., 2015"?

24           WITNESS HUTTON: Yeah. I'll take a minute to  
25 read that question.

1 Yes, I do recall this now.

2 And how that is reflected, the Fox, et al.,  
3 paper shows a range of annual out- -- natural annual  
4 outflow estimates. And the DWR modeling comes in  
5 somewhat higher than the range predicted in the  
6 Fox, et al., paper. And I think this is probably one  
7 of -- this would have been one of the reasons why the  
8 DWR modeling comes up with a higher annual outflow.

9 MR. OBEGI: And am I correct that, in your  
10 papers, you did not account for stream flow-groundwater  
11 interactions?

12 CO-HEARING OFFICER DODUC: Ms. Sheehan.

13 MS. SHEEHAN: I'm sorry. Could we just be  
14 specific? Dr. Hutton has many published papers.

15 Which paper are you referring to in your  
16 question?

17 MR. OBEGI: DWR-1287.

18 WITNESS HUTTON: So, actually, DWR-1287 is not  
19 the hydrology modeling. That is the -- that is the  
20 hydrodynamic modeling in the Delta. And this one did  
21 take into account many of the mis- -- this was a  
22 mechanistic model using a three-dimensional  
23 hydrodynamic model and assuming the best available  
24 science on the bathymetry and geometric conditions of  
25 the Delta pre-development.

1           MR. OBEGI: And so turning back to this DWR  
2 manuscript that hasn't been peer-reviewed.

3           Can you go back up, Mr. Hunt, to Page 11, pdf  
4 Page 11.

5           How did DWR deal with groundwater accretions,  
6 given that no data were available?

7           WITNESS HUTTON: The C2VSim -- let me go back.  
8 So DWR used an integrated groundwater-surface water  
9 model to conduct this analysis. So groundwater  
10 interactions with the -- with the channel is explicitly  
11 accounted for in -- in the modeling done by them.

12           So I think what -- what I would take away from  
13 this sentence is that DWR is not able to validate the  
14 results of the modeling because we don't have -- we  
15 don't have data on what the actual flows were  
16 pre-development.

17           MR. OBEGI: And does the report describe what  
18 assumptions DWR used for groundwater accretions?

19           WITNESS HUTTON: If they did, I'm not familiar  
20 with that.

21           MR. OBEGI: I couldn't find it either.

22           But it -- so are you certain that they  
23 actually accounted for natural groundwater levels in  
24 this analysis? Can you testify with certainty to that?

25           CO-HEARING OFFICER DODUC: Ms. Sheehan.

1 MS. SHEEHAN: Yeah, I believe it's asked and  
2 answered. He explained that they used the groundwater  
3 model for the results.

4 Are you asking him are those results correct?

5 MR. OBEGI: He testified previously that this  
6 report -- DWR addressed this first challenge of  
7 groundwater accretions, historic -- under natural  
8 conditions being much higher than they are today.

9 He's described that they used a model, but he  
10 hasn't described how they accounted for the natural  
11 groundwater accretions being higher than they are  
12 today. And I want to clarify and make sure that he  
13 testified correctly, that DWR actually addressed this  
14 first challenge.

15 MR. MIZELL: I'd raise an objection here.

16 What Mr. Obegi is trying to get at is to have  
17 Dr. Hutton speak on behalf of other scientists who are  
18 part of DWR. Dr. Hutton, as an expert, can rely upon  
19 the work of other professionals such as those  
20 scientists at DWR to the extent that they've  
21 represented that they have accounted for --

22 CO-HEARING OFFICER DODUC: Mr. Mizell, then if  
23 that's the case, then Dr. Hutton may answer that he  
24 cannot account for it or does not know.

25 WITNESS HUTTON: I can give a very limited

1 answer in that the boundary conditions to the Central  
2 Valley are -- were higher, meaning the assumed water  
3 levels at the boundary of the model were higher to  
4 account for natural conditions. But specifics on how  
5 they modeled it, I am not -- I am not familiar with  
6 that and can't speak to.

7 MR. OBEGI: Is that described anywhere in this  
8 report?

9 WITNESS HUTTON: And again, if it is, I'm not  
10 aware of that.

11 MR. OBEGI: And are you aware that the Nature  
12 Conservancy has analyzed the effects of groundwater  
13 depletion on river flows in the Central Valley?

14 WITNESS HUTTON: No, I'm not aware of that.

15 MR. OBEGI: Mr. Hunt, could you please pull up  
16 NRDC-214.

17 And this is a 2016 report by the Nature  
18 Conservancy. And turning to Page 94 of the pdf, this  
19 is a graphic showing the net historic groundwater  
20 discharge to rivers.

21 Would it surprise you that the Nature  
22 Conservancy found that, since the 19- -- since the  
23 beginning of this analysis, that the Sacramento and  
24 San Joaquin Rivers have lost more than 1 million  
25 acre-feet of flow due to groundwater depletion?

1           WITNESS HUTTON: I have not seen this  
2 analysis, but I have seen similar analyses. So -- that  
3 provides similar results. So, no, I'm not surprised by  
4 these results.

5           MR. OBEGI: So if this -- if DWR's report did  
6 not account for -- accurately account for natural  
7 groundwater conditions, it would likely underestimate  
8 river flows and Delta outflows under natural  
9 conditions, correct?

10          WITNESS HUTTON: The trends that are being  
11 shown here would not occur under natural conditions.  
12 There wasn't -- under the natural conditions, there are  
13 no groundwater -- there's no groundwater pumping.

14           So while I -- in my -- when I was asking about  
15 model results from DWR, it's my understanding but,  
16 again, this is something I can't confirm, is that more  
17 or less, the -- year in and year out, the water levels  
18 are -- in this -- in the DWR's modeling, more or less  
19 came back every year. There may have been a slight  
20 depletion under a drought condition, but they would  
21 bounce back.

22           There would be -- there would be no conditions  
23 like there are under contemporary conditions where  
24 there would be a long-term trend in groundwater  
25 withdrawals.

1           MR. OBEGI: But that is not in the report  
2 itself, is it?

3           WITNESS HUTTON: Again, to my knowledge,  
4 it's -- that's not documented.

5           MR. OBEGI: And you've introduced this  
6 testimony in rebuttal to the State Water Board's  
7 scientific basis report, correct?

8           WITNESS HUTTON: As well as the -- as well as  
9 the 2010 Flow Criteria Report. And there are -- there  
10 were other protestants that brought up the issue of  
11 natural flow.

12          MR. OBEGI: And I definitely don't want to  
13 touch the last part of that statement.

14          But are you aware that the State Water Board's  
15 independent -- their scientific basis report underwent  
16 independent scientific peer review?

17          WITNESS HUTTON: Yes, I believe I'm aware of  
18 that.

19          MR. OBEGI: And you've just testified that  
20 this DWR report did not undergo independent scientific  
21 peer review, correct?

22          WITNESS HUTTON: That is correct.

23          MR. OBEGI: And are you aware that the peer  
24 reviewers of the scientific basis report generally  
25 concluded that the report was scientifically sound?

1           WITNESS HUTTON: I'm not sure in -- that, to  
2 me -- that's -- can you narrow -- I mean, I assume the  
3 report covers --

4           CO-HEARING OFFICER DODUC: Are you familiar  
5 with -- are you familiar with the peer reviewers'  
6 report?

7           WITNESS HUTTON: Oh, no, I didn't actually see  
8 their report.

9           MR. OBEGI: Mr. Hunt, could we please pull up  
10 NRDC-215. Oh, sorry, 214. No. Did I -- hold on a  
11 second. Apparently, I forgot to include it. Dang.

12                   My apologies.

13                   Okay. We can skip that.

14                   Finally, you conclude your testimony by  
15 discussing ecosystem management efforts in the Delta  
16 relating to Delta outflow in X2 in the conclusion of  
17 your testimony.

18                   Do you recall that?

19           WITNESS HUTTON: Could you point to the  
20 specific sentences?

21           MR. OBEGI: If we pull up his testimony, it's  
22 on the very last page, Lines 15 to 17.

23           WITNESS HUTTON: Yes.

24           MR. OBEGI: So it's your opinion that  
25 unimpaired flows should not be a tool for management,



1 correct?

2 WITNESS HUTTON: It is my opinion that,  
3 insomuch that the intent is to mimic natural  
4 conditions, the unimpaired flow value on the Central  
5 Valley in the Delta does not do that.

6 MR. OBEGI: But would you agree that the  
7 seasonal distributions of unimpaired and natural flows  
8 are similar?

9 WITNESS HUTTON: The DWR analysis does suggest  
10 that there's a -- there are similarities in the -- in  
11 the relative patterns.

12 MR. OBEGI: And are you aware that in 2012 the  
13 National Academy of Sciences reviewed scientific  
14 information on the use of unimpaired flows and Delta  
15 ecosystem management?

16 CO-HEARING OFFICER DODUC: Ms. Sheehan.

17 MS. SHEEHAN: Yes, again, if you could be more  
18 specific as to -- actually, I forgot now your question.  
19 But you were quite vague as to what exactly they  
20 reviewed.

21 MR. OBEGI: Sure.

22 Mr. Hunt, could you pull up NRDC-215.

23 Do you happen to recall this report from the  
24 National Academy of Sciences, part of their series on  
25 Bay-Delta?

1           WITNESS HUTTON: I believe at one time I  
2 did -- I did read this. I'm -- I'm -- certainly there  
3 would be a lot of cobwebs right now.

4           MR. OBEGI: And I seem to recall that you and  
5 I were both at a couple of those meetings.

6           Give me one second here.

7           I, of course, did not write the page number  
8 down.

9           Mr. Hunt, could you please turn to Page 117 of  
10 this report.

11          CO-HEARING OFFICER DODUC: PDF or page number?

12          MR. OBEGI: This is the correct page.

13          CO-HEARING OFFICER DODUC: Okay.

14          MR. OBEGI: I've learned from my mistakes, for  
15 the most part. I still make mistakes.

16          Do you see the paragraph that begins with the  
17 word "thus"?

18          WITNESS HUTTON: Yes. Shall I read that  
19 paragraph?

20          MR. OBEGI: You don't need to read it out  
21 loud, but you should read it to yourself.

22          WITNESS HUTTON: Okay. I've read that.

23          MR. OBEGI: And so the National Academy of  
24 Sciences is recommending that the State Water Board  
25 should determine what fraction of unimpaired flows

1 should be -- let me rephrase.

2           Doesn't this paragraph state that the National  
3 Academy of Sciences is recommending that the State  
4 Water Resources Control Board should determine the  
5 limits on diversions and exports to some fraction of  
6 unimpaired flows?

7           WITNESS HUTTON: I'm sorry. What year was  
8 this -- was this report?

9           MR. OBEGI: I believe this is 2012.

10          WITNESS HUTTON: Yeah. So what I would say to  
11 that, as -- and this gets to one of the points in my  
12 testimony -- is that there's been a lot of new -- new  
13 science, including the work that I've referenced. At  
14 the time this was done, there was no quantitative --  
15 there was no work to try to quantify what natural flow  
16 conditions were.

17          So I -- I would certainly stand by that and  
18 speculate that, if the National Science Academy had  
19 this -- the natural flow work in front of them, they  
20 may have come up with a different conclusion.

21          MR. OBEGI: But at the time, even though they  
22 did acknowledge in this report the difference between  
23 natural and unimpaired flows, they still recommended  
24 managing to some fraction of unimpaired flows?

25          WITNESS HUTTON: Without the currently best

1 available science.

2 MR. OBEGI: In your opinion. So you would  
3 disagree with the conclusions stated in this report?

4 WITNESS HUTTON: Yes.

5 MR. OBEGI: All right. I've got one more  
6 question.

7 CO-HEARING OFFICER DODUC: An engineering  
8 question or a lawyer question?

9 You missed the part where several attorneys  
10 have said they had -- and non-attorneys have said they  
11 had one question that then became three, four, five.

12 MR. OBEGI: That's definitely lawyer. Two  
13 lawyers comes up with five questions or five opinions.

14 Give me one moment.

15 That's the wrong document. I'm going to  
16 need -- I'm going to use the full five minutes,  
17 unfortunately, because I did not actually -- I got my  
18 exhibits crosswise, and so I apologize. But I'm going  
19 to take just a moment to get my last exhibit in order.

20 CO-HEARING OFFICER DODUC: And as Mr. Obegi  
21 does that, a couple things.

22 One, a reminder that, thanks to the Chair's  
23 generosity, kindness, we have casual Thursday in  
24 addition to casual Friday this week. And just so I can  
25 match the Chair's kindness and generosity, we will

1 start at 10:00 a.m. on Friday.

2 And while Mr. Obegi is still pondering, let me  
3 ask the parties in the room, as a consequence of  
4 Mr. Obegi's cross, do you have any revisions to your  
5 estimate for cross-examination tomorrow?

6 MR. JACKSON: Since there's no penalty for  
7 going under in terms of time -- I don't usually do  
8 this, but I think because of these questions that I can  
9 cut mine down, with a little extra time involved, to 30  
10 minutes.

11 CO-HEARING OFFICER DODUC: Anyone else?

12 MS. MESERVE: I'm sorry to go the wrong way,  
13 but I think mine is probably more like 45 minutes,  
14 being realistic.

15 MS. DES JARDINS: Deirdre Des Jardins. I  
16 think based on Mr. Obegi's extensive questioning, I can  
17 cut mine down. It may be down to an hour, but I'm not  
18 sure.

19 CO-HEARING OFFICER DODUC: All right. Thank  
20 you.

21 At this time, I'm not going to hold you to it,  
22 Mr. Mizell, Mr. Berliner, but based on the  
23 cross-examination so far, do you anticipate any  
24 redirect?

25 MR. MIZELL: I anticipate we may request

1 redirect on one subject at this point in time.

2 CO-HEARING OFFICER DODUC: Okay.

3 MR. MIZELL: Also --

4 CO-HEARING OFFICER DODUC: I have noted that  
5 Dr. Acuna is not available on Friday. So to the extent  
6 that there's any redirect and recross of Dr. Acuna, we  
7 will -- should try to get that done first.

8 MR. MIZELL: Thank you. I'd appreciate that.

9 And before we break for the day, I have a  
10 question for some additional clarification on the  
11 motion to strike from Mr. Obegi, but I'll wait until  
12 after his cross.

13 CO-HEARING OFFICER DODUC: Okay.

14 MR. OBEGI: Mr. Hunt, will you please pull up  
15 NRDC-216. And this is a -- the peer review by  
16 Thomas -- I'm going to mispronounce his name --  
17 M-E-I-X-N-E-R -- of the scientific basis report.

18 And at the very bottom of the first page, it  
19 states -- do you see the language that says -- it  
20 begins, "I very much appreciate the careful distinction  
21 the authors make between natural and unimpaired flows"?

22 WITNESS HUTTON: Yes.

23 MR. OBEGI: And turning to Page 2, the peer  
24 review concludes that "The authors rightly, in my  
25 opinion, focus on unimpaired flows to investigate the

1 impact of water resources management."

2 I imagine you don't agree with that statement.

3 WITNESS HUTTON: Could you -- could you -- I'm  
4 sorry. Where is that in the --

5 MR. OBEGI: At the very top.

6 WITNESS HUTTON: I've not seen this document  
7 and read it in its entirety, so I didn't -- probably  
8 I'd have to speculate.

9 Just reading that sentence alone, yeah, I  
10 would -- I would again state that the unimpaired flows  
11 are not -- in the Delta are not representative of  
12 natural flows.

13 MR. OBEGI: Thank you. Nothing further.

14 CO-HEARING OFFICER: Mr. Mizell, your request  
15 for clarification.

16 MR. MIZELL: Yes. And it may be helpful to  
17 bring up Dr. Hanson's testimony, DWR-1223-Revised, and  
18 Page 6. So that -- I've reviewed the transcript, and  
19 the motion to strike came after a dialog that covered  
20 topics ranging from Line 14 through Line 26, as best as  
21 I can understand.

22 The motion to strike was based upon -- and I'm  
23 quoting here -- "that conclusion."

24 So I'm wondering which line specifically  
25 Mr. Obegi is attempting to strike.

1           MR. OBEGI: I would move to strike Lines 14 --  
2 sorry -- Lines 17 through 22 as well as his answer  
3 about -- his oral answer about changes in the channel  
4 configuration because he was not able to find a  
5 justification for that statement, and it went outside  
6 the scope of his written testimony. And he doesn't  
7 seem to have the foundation to -- for these other  
8 statements, the knowledge of the paper that he cited.

9           MR. MIZELL: And the motion to strike Lines 17  
10 through 22 is based upon the review of Exhibit 1330; is  
11 that correct?

12           MR. OBEGI: Correct.

13           MR. MIZELL: All right. And the other was his  
14 oral statement on channel configurations. Okay.

15           I believe that the Department's ready to  
16 respond to that motion to strike now, and I will --

17           CO-HEARING OFFICER DODUC: And, actually --  
18 I'm sorry. Before you do --

19           Mr. Hunt, if you could scroll up so we can all  
20 see the entirety of what Mr. Obegi is proposing to  
21 strike.

22           Hold on. Did we lose it?

23           MR. MIZELL: Page 6, looking at Lines 17  
24 through 26.

25           CO-HEARING OFFICER DODUC: Okay.



1 MR. OBEGI: 17 through 22.

2 MR. MIZELL: And then -- yes.

3 So -- and I will rely upon Dr. Hanson to speak  
4 for himself in some cases, but I'm going to lay the  
5 foundation for our opposition.

6 The line of questioning brought up Exhibit  
7 DWR-1330 exclusively and looked at a reference to that  
8 exhibit that was based on a discussion of the Poff and  
9 Zimmerman report that's -- that's cited on Line 14.

10 Dr. Hanson's answer included information  
11 spanning from Line 14 through the bottom of Line 26.  
12 Within that range, there are three different DWR  
13 exhibits referenced. We reviewed one of three, and the  
14 witness was asked to identify, in only that one, where  
15 the basis of his statement are -- where the basis of  
16 his statement was contained.

17 I believe Dr. Hanson can be more specific if  
18 he understands exactly which statement within that  
19 large range of text Mr. Obegi is looking for a cite.

20 So if we could go -- Mr. Obegi is welcome to  
21 ask for the citations for each of those statements.

22 As to the channel configuration, that goes to  
23 Dr. Hanson's testimony between Lines 23 and 26. So  
24 again, a different exhibit. He was not able to locate  
25 it in the Exhibit DWR-1330 because it cited to a

1 different exhibit.

2           And I'm happy to let Dr. Hanson actually  
3 explain his answer more fully if that's what you would  
4 request.

5           CO-HEARING OFFICER: Mr. Obegi, I offer you  
6 the opportunity to go through these exhibits if you  
7 still wish to move for striking of these portions of  
8 this testimony.

9           MR. OBEGI: If I may, I think it would be more  
10 efficient if I could review this and contact the  
11 Hearing Officers tomorrow after looking at it.

12           CO-HEARING OFFICER DODUC: All right. With  
13 that, my understanding is tomorrow we will start with  
14 Group 21, Mr. Herrick or Mr. Ruiz. They requested 45  
15 minutes of cross-examination. We then will move to  
16 Mr. Jackson, who is now going to be very efficient with  
17 his estimate of 30 minutes. Ms. Des Jardins is next  
18 with an estimated 60 minutes. Clifton Court will then  
19 follow with an estimated 10 minutes, and then  
20 Ms. Meserve with 45. And that is all the  
21 cross-examination I have for this panel. And with  
22 that, thank you all. Have a good evening, and we'll  
23 see you at 9:30 tomorrow in your best Thursday casual  
24 wear.

25           (The proceedings recessed at 6:15 p.m.)

1 State of California )  
2 County of Sacramento )

3

4 I, Candace L. Yount, Certified Shorthand Reporter  
5 for the State of California, County of Sacramento, do  
6 hereby certify:

7 That I was present at the time of the above  
8 proceedings;

9 That I took down in machine shorthand notes all  
10 proceedings had and testimony given;

11 That I thereafter transcribed said shorthand notes  
12 with the aid of a computer;

13 That the above and foregoing is a full, true, and  
14 correct transcription of said shorthand notes, and a  
15 full, true and correct transcript of all proceedings  
16 had and testimony taken;

17 That I am not a party to the action or related to  
18 a party or counsel;

19 That I have no financial or other interest in the  
20 outcome of the action.

21

22 Dated: September 5, 2018

23

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Candace L. Yount, CSR No. 2737

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  
5 certify that the foregoing proceedings (Pages 101  
6 through 293) were reported by me, a disinterested  
7 person, and thereafter transcribed under my  
8 direction into typewriting and which typewriting is  
9 a true and correct transcription of said  
10 proceedings.

11 I further certify that I am not of counsel  
12 or attorney for either or any of the parties in the  
13 foregoing proceeding and caption named, nor in any  
14 way interested in the outcome of the cause named in  
15 said caption.

16 Dated the 6th day of September, 2018.

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DEBORAH FUQUA  
CSR NO. 12948