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BEFORE THE  
CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

CALIFORNIA WATERFIX WATER )  
RIGHT CHANGE PETITION )  
HEARING )

JOE SERNA, JR. BUILDING  
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
COASTAL MEETING ROOM  
1001 I STREET  
SECOND FLOOR  
SACRAMENTO CALIFORNIA  
PART 2 REBUTTAL

Thursday, August 30, 2018  
9:30 A.M.

VOLUME 49  
Pages 1 - 144

Reported By: Deborah Fuqua, CSR No. 12948  
(a.m. session)  
Candace Yount, CSR No. 2737  
(p.m. session)

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3 Division of Water Rights

4 Board Members Present

5 Tam Doduc, Co-Hearing Officer:

Felicia Marcus, Chair and Co-Hearing Officer:

6 Dorene D'Adamo, Board Member

7 Staff Present

8 Andrew Derringer, Senior Staff Attorney

Jean McCue, Senior Water Resources Control Engr.

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Duane Morris, LLP

14 By: Thomas Martin Berliner, Attorney at Law

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Local Agencies of the North Delta

22 Osha Meserve

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25 (Continued)

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3 Water Impact Network, AquAlliance  
4 Michael Jackson

5 Delta Agencies, and other parties  
6 John Herrick

7 California Water Research  
8 Deirdre Des Jardins

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I N D E X

PANEL 3 REBUTTAL WITNESSES CALLED BY  
PETITIONERS

SHAWN ACUNA  
PAUL HUTTON  
CHARLES HANSON  
CORY PHILLIS

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1 Thursday, August 30, 2018 9:30 a.m.

2 PROCEEDINGS

3 ---000---

4 CO-HEARING OFFICER DODUC: Good morning,  
5 everyone. Welcome back. And I won't say to where  
6 because you all should know where you are by now; it is  
7 casual Thursday, after all. And I see all familiar  
8 faces, so I'm skipping all the announcements. And you  
9 all know what they are, especially the all-important  
10 third one.

11 All right. A housekeeping matter which I  
12 cannot address at this point because I do not see  
13 Ms. Morris. At some point -- we did receive a request  
14 from her to bring back Mr. Burke. So at some point, I  
15 would like to hear from her on that.

16 I just got a notice that Mr. Herrick is stuck  
17 in traffic. Okay.

18 So let's go to Mr. Jackson for cross -- or  
19 Mr. Mizell, another housekeeping matter?

20 MR. MIZELL: No. If the questions about -- or  
21 issues with Mr. Burke are about Ms. Morris's e-mail, I  
22 can speak to that to some degree. She will be here, I  
23 believe, in the 11:00 o'clock hour otherwise.

24 CO-HEARING OFFICER DODUC: All right. Let's  
25 just wait for that. And unless there's any other

1 housekeeping matters, since Mr. Jackson is here as well  
2 as Ms. Des Jardins and Ms. Meserve, who all have  
3 requested time for cross-examination, would you like to  
4 do Mr. Herrick a big favor, to which then you can  
5 later -- he will later owe you, and take his place in  
6 conducting cross-examination?

7 MR. JACKSON: I'll be glad to do that, but  
8 I'll need just a minute. I was not expecting. . .

9 CO-HEARING OFFICER DODUC: All right. We will  
10 take a short break.

11 (Recess taken)

12 CO-HEARING OFFICER DODUC: It looks like  
13 Mr. Jackson has once again come to the assistance of  
14 the parties. Both Mr. Obegi and Mr. Herrick now owe  
15 you, Mr. Jackson.

16 CO-HEARING OFFICER MARCUS: That's a great  
17 shirt.

18 CO-HEARING OFFICER DODUC: Yes. And let it be  
19 noted that is unanimous from the Board members here, a  
20 quorum, by the way, that we love Mr. Jackson's shirt  
21 today.

22 MR. JACKSON: Thank you very much.

23 COREY PHILLIS, SHAWN ACUNA,  
24 CHARLES HANSON, and PAUL HUTTON,  
25 called as Part 2 Rebuttal, Panel 3



1 witnesses by the Petitioners, having  
2 been previously duly sworn, were  
3 examined and testified further as  
4 hereinafter set forth:

5 CROSS-EXAMINATION BY MR. JACKSON

6 MR. JACKSON: My questions this morning will  
7 go to Dr. Hanson and Dr. Hutton. And as usual, I  
8 will -- the questions to Dr. Hanson will --

9 CO-HEARING OFFICER DODUC: Your microphone  
10 either needs to be readjusted or --

11 MR. JACKSON: The questions to Dr. Hanson will  
12 be organized around his summary of testimony on Page 3,  
13 and I will have questions on his five bullet points.

14 The same will be true for Dr. Hutton. I will  
15 be organizing my cross-examination around his summary  
16 of opinions that are on Page 4. And then his opinion  
17 on Delta outflow time trends will be a set of  
18 lawyerly-like questions limited to three which could  
19 end up being 11.

20 Mr. Long, or -- Ms. Rasis, could you please  
21 put up Dr. Hanson's testimony, which is 1223, DWR-1223,  
22 at Page 3.

23 Good morning, Dr. Hanson

24 WITNESS HANSON: Good morning.

25 MR. JACKSON: Calling your attention to the

1 summary of your testimony in bullet one, you indicate  
2 that multiple historical physical and hydrologic  
3 changes have shaped the current Delta.

4 Does this testimony in that regard have  
5 anything to do with the California WaterFix proposal?

6 WITNESS HANSON: No, it was to provide  
7 background information.

8 MR. JACKSON: All right. And would the  
9 information supplied in that bullet point be the same  
10 whether or not the water -- the new WaterFix was built  
11 or not?

12 WITNESS HANSON: I believe it would be.

13 MR. JACKSON: Thank you, sir.

14 Did you investigate in any fashion whether or  
15 not the testimony that you give in support of the first  
16 bullet point on Line 15 would be in any way changed by  
17 the installation of the North Delta Diversions from  
18 existing conditions?

19 WITNESS HANSON: The construction of a new  
20 intake would have modifications to the channel and the  
21 levees, and so it would be a new facility. So it would  
22 be in addition to what the current conditions are.

23 MR. JACKSON: Did you look into that?

24 WITNESS HANSON: I did not.

25 MR. JACKSON: In regard to the second bullet

1 point, that the current state of the Delta is the  
2 result of multiple physical and hydrologic factors  
3 operating on multiple time changes, did you consider in  
4 your supporting material for that opinion the North  
5 Delta Diversions in any way?

6 WITNESS HANSON: I did not.

7 MR. JACKSON: Have you, before testifying  
8 today, reviewed the California WaterFix EIR?

9 WITNESS HANSON: Not in any detail at all.

10 MR. JACKSON: Have you -- before testifying  
11 and forming the opinion on the second bullet point,  
12 have you considered the subsequent environmental  
13 document caused by changes in the alignment?

14 WITNESS HANSON: I did not.

15 MR. JACKSON: In the third bullet point where  
16 you indicate that there's significant uncertainty  
17 regarding the nature, extent, and magnitude of the  
18 effects of current CVP operation as well as other  
19 stressors on salmonid survival, did you consider the  
20 uncertainty of the new North Delta Diversions?

21 WITNESS HANSON: In my previous involvement  
22 with the Bay Delta Conservation Plan development I  
23 considered this but not in the context of WaterFix.

24 MR. JACKSON: And did you consider that  
25 diversion in terms of forming the opinions that are the

1 source of your testimony?

2 WITNESS HANSON: I did not.

3 MR. JACKSON: In regard to your fourth bullet  
4 point, the relationship between Sacramento River flow  
5 rates and juvenile salmonid survival, did you consider  
6 the movement of diversions in the Delta to the three  
7 sites on the Sacramento River that compose the  
8 diversion structures for the California WaterFix?

9 WITNESS HANSON: I did not include  
10 consideration of the diversion structures.

11 MR. JACKSON: Did you consider the amount of  
12 water that would be routed underneath the Delta rather  
13 than through the Delta as the existing condition is?

14 WITNESS HANSON: I did not do any effects  
15 analysis on diversions.

16 MR. JACKSON: Dr. Hanson, please refer to  
17 Page 3, Lines 6 to 10 of your Part 2 rebuttal  
18 testimony, 1223-Revised.

19 Is it true that your testimony is that the  
20 Board should consider science developed since the 2010  
21 flow hearing?

22 WITNESS HANSON: I believe it should be  
23 considered.

24 MR. JACKSON: Now, you participated on behalf  
25 of the State and Federal Water Contractors in the Delta

1 Flow Criteria proceeding in 2010; did you not?

2 WITNESS HANSON: I did.

3 MR. JACKSON: Ms. Rasis, could you put up

4 CSPA-520 from the flash drive that I'm trying use?

5 Could you -- yes.

6 Do you see your -- this is the witness  
7 identification list from the 2010 hearing, and you have  
8 indicated that you did testify. Do you see that you --  
9 this lists you as testifying on Panels 2, 3, 4, and 5  
10 in that hearing?

11 WITNESS HANSON: I see that, but I don't  
12 recollect being on quite so many panels.

13 MR. JACKSON: Does this -- is it fair to say  
14 that, if you were on this list, you probably served on  
15 these panels?

16 WITNESS HANSON: I have no doubt.

17 MR. JACKSON: And it states in the notice of  
18 appearance shown in CSPA-520 that you will submit  
19 testimony, correct?

20 WITNESS HANSON: It does.

21 MR. JACKSON: And that testimony consists of  
22 Exhibits SFWC-1 and SFWC-2, correct?

23 CO-HEARING OFFICER DODUC: Could you expand on  
24 what those documents are, Mr. Jackson?

25 MR. JACKSON: I'm going to pull them up with

1 my next question.

2 WITNESS HANSON: I see the reference across  
3 from BJ's -- BJ Miller's name and the asterisks down,  
4 which I would assume means I was also part of that.

5 MR. JACKSON: Would you, Ms. Rasis, please  
6 pull up CSPA-521.

7 And would you scroll through this.

8 You submitted it on behalf of the following  
9 folks: San Luis and Delta-Mendota, State Water  
10 Contractors, Westlands, and the Met -- without going  
11 through them all.

12 WITNESS HANSON: It was a collaboration.

13 MR. JACKSON: Would you go up a little  
14 further? I mean, sorry, down.

15 In regard to this testimony, do you recall  
16 working on this particular exhibit?

17 WITNESS HANSON: In general, I recall it, but  
18 I haven't reviewed it.

19 MR. JACKSON: All right. Do you -- I call  
20 your attention to the highlighted sections from PDF  
21 Pages 2 and 3, which are the Pages 8 and Page 9 of the  
22 2010 exhibit.

23 Do you remember -- the highlighted sections on  
24 Page 4 at the bottom, which is Page 13 from the  
25 original, talks about flows and migration speed as well

1 as other things, correct?

2 CO-HEARING OFFICER DODUC: If we might go  
3 there first. Is this Page 13?

4 MR. JACKSON: This is Page 4.

5 CO-HEARING OFFICER DODUC: 4 of CSPA-521?

6 MR. JACKSON: Yes.

7 CO-HEARING OFFICER DODUC: But 13 of the  
8 original document.

9 MR. JACKSON: Correct.

10 WITNESS HANSON: The highlighted references or  
11 sections that you've pointed out do talk about  
12 migration rate.

13 MR. JACKSON: And if you scroll down to PDF  
14 Page 5 at the bottom, you also talked about, in the  
15 highlighted section, that the effect of flow on  
16 survival within Delta reaches remains highly uncertain.

17 WITNESS HANSON: Which is consistent with the  
18 material I presented here.

19 MR. JACKSON: Right. And in fact, as -- is it  
20 true that that has been true since 1978?

21 WITNESS HANSON: When Marty Kjelson first  
22 started.

23 MR. JACKSON: All right. And that this is an  
24 ongoing process in which we are still somewhat  
25 uncertain? You used the term "highly uncertain" in

1 2010. Would you agree that it's probably highly  
2 uncertain now?

3 WITNESS HANSON: It's getting to be more  
4 certain with the advent of the acoustic tag technology.  
5 But there's still uncertainty. We have fish that  
6 disappear, and we don't know why.

7 MR. JACKSON: Is it your position that the  
8 Board should not make a decision on water management  
9 until this uncertainty is resolved?

10 WITNESS HANSON: No. The Board has been  
11 making decisions on flow and water quality in the face  
12 of uncertainty. So I don't advocate that we wait. I  
13 think we need to take action collectively, but we need  
14 to take that action recognizing the level of  
15 uncertainty and accounting for it in how we approach  
16 our management.

17 MR. JACKSON: Is it true that your view in  
18 2010 expressed to that board is essentially the same as  
19 your view today?

20 WITNESS HANSON: Essentially the same. You  
21 know, we've certainly gained knowledge through the  
22 acoustic tag studies, and it's helped better understand  
23 some of the underlying mechanisms through which flow  
24 and other factors like tidal-driven processes affect  
25 migration and survival. But other than being eight



1 years older, I think my findings are fairly similar.

2 MR. JACKSON: And you believe that it's still  
3 uncertain on the effect of flow, correct?

4 WITNESS HANSON: I believe it's uncertain in  
5 the sense that it's very difficult to say that an  
6 increase of flow of 10,000 cfs is going to result in a  
7 5 percent increase in survival. It may increase, but  
8 we can't say it's going to be 5 percent with certainty.

9 MR. JACKSON: So part of what you're pointing  
10 out is that scientists have different views in regard  
11 to the certainty and that everyone working in this area  
12 does not believe they're through working, correct?

13 WITNESS HANSON: Correct.

14 MR. JACKSON: And that there are people with  
15 strong views on all sides? I can't say "both" because  
16 there's probably a hundred sides.

17 WITNESS HANSON: It's a multi-faceted shape.

18 MR. JACKSON: So isn't it fair to say that the  
19 opinions you express in DWR-1223-Revised on predation  
20 and juvenile salmon migration speed are very similar to  
21 the opinions you and your colleagues expressed in the  
22 2010 Delta Flow Criteria hearing?

23 MR. BERLINER: Objection as to the phrase  
24 "similar opinions." "Similar" has lots of relative  
25 meanings, so perhaps we could narrow that a little bit.

1 CO-HEARING OFFICER DODUC: Overruled, unless  
2 you can explain to me because "similar" to me --

3 MR. BERLINER: I will. So in that highlighted  
4 sentence, I think if you asked --

5 CO-HEARING OFFICER DODUC: I don't know if  
6 Mr. Jackson is still focused on just that highlited --

7 MR. BERLINER: I was just going to use it for  
8 example.

9 So Dr. Hanson testifies that the effect of  
10 flow on survival in the Delta is still uncertain.

11 Mr. Jackson quoted a sentence to him that says  
12 the effect on flow remains highly uncertain. So within  
13 the range of uncertainty, while the opinions are  
14 similar, Dr. Hanson tried to explain the difference  
15 between his opinion today versus that statement,  
16 "highly uncertain" in 2010. So I'm just concerned  
17 about the relatively.

18 When you say "similar," they're similar, but  
19 they're different. So all I'm suggesting is the  
20 testimony would benefit by less of a sort of broad  
21 open-ended, "Gee, are they similar?" Well, yeah,  
22 they're both -- they're both General Motors trucks,  
23 but, boy, there's a world of difference between truck 1  
24 and truck 2.

25 CO-HEARING OFFICER DODUC: So Dr. Hanson, what

1 would you say would be the difference between your  
2 testimony in 2010 for the Flow Criteria Report and the  
3 testimony you are providing today?

4 WITNESS HANSON: When we prepared our --

5 CO-HEARING OFFICER DODUC: If it's okay with  
6 you, Mr. Jackson.

7 MR. JACKSON: Yes, of course. The idea is for  
8 us to be clear.

9 WITNESS HANSON: When we were looking at the  
10 2010 report, and looking at relationships between flow  
11 and survival for juvenile salmonids, at that point in  
12 history, we were really limited to looking at coded  
13 wire tag studies.

14 That's a study where you drop a bunch of fish  
15 up in the upper part of the river and you catch some  
16 down at Chipps Island. You don't know what happened in  
17 between, and we have relatively low resolution.

18 Since 2008, there has been a switch from coded  
19 wire tags to acoustic tags. The acoustic tags now give  
20 the researchers the ability to actually track the  
21 location of individual fish, allows them to look at how  
22 they respond to a flow junction like Georgiana Slough,  
23 allows you to get better information on where does the  
24 mortality occur, how fast do the fish move relative to  
25 the flow, what are the effects of other structures,

1 what's the predation -- you know, a variety of new  
2 pieces of information are emerging that weren't  
3 available in 2010.

4 I used the combination of both of those in  
5 preparing my testimony.

6 MR. JACKSON: So in regard to that, is it your  
7 position that the Board should stop and -- what they're  
8 doing now, and include a re-analysis of all of this  
9 scientific information about the Delta before they go  
10 forward on making this decision?

11 CO-HEARING OFFICER DODUC: That would be  
12 outside the scope, Mr. Jackson.

13 MR. JACKSON: All right. Thank you, sir.

14 WITNESS HANSON: Thank you.

15 MR. JACKSON: Dr. Hutton, these questions are  
16 addressed to the -- to the summary of your opinions on  
17 Page 4 of your testimony.

18 Your first bullet point is that the Delta  
19 outflow shows no statistically significant volumetric  
20 long-term annual time trend.

21 Does that opinion have any effect on the new  
22 Delta diversions in the North Delta?

23 WITNESS HUTTON: My testimony does not address  
24 Cal WaterFix. If the Hearing Officer would like me to  
25 expand. . .

1           MR. JACKSON: In the second bullet, talking  
2 about Delta outflow, you indicate that Delta outflow  
3 shows statistically significant increasing and  
4 decreasing volumetric long-term seasonal time trends.

5           In forming that opinion, did you in any way  
6 consider the North Delta Diversions of the California  
7 WaterFix?

8           MR. MIZELL: Objection, asked and answered.  
9 Dr. Hutton just indicated his testimony does not  
10 address California WaterFix.

11          CO-HEARING OFFICER DODUC: And Mr. Jackson is  
12 exploring that further. Overruled.

13          MR. JACKSON: And essentially trying to figure  
14 out which of these included the North Delta Diversions  
15 and which did not.

16          Your third bullet point, "A long-term  
17 increasing trend (i.e., higher salinity) in Fall X2 has  
18 not occurred," did you do any work in forming your  
19 testimony in regard to the California WaterFix at --  
20 looking at whether or not there would be a change in  
21 trend if the North Delta Diversions of the California  
22 WaterFix were installed in the Sacramento River?

23          WITNESS HUTTON: As I responded to your  
24 earlier question, my entire testimony, none of it  
25 addresses the Cal WaterFix.

1           MR. JACKSON: Okay. And I'll try to speed up  
2 just a little here because I'm down to six minutes.

3           Is it fair to say that the next four bullet  
4 points -- excuse me -- the next five bullet points,  
5 your answer would be the same, that this testimony did  
6 not consider the California WaterFix?

7           WITNESS HUTTON: Yes.

8           MR. JACKSON: Was your testimony, for  
9 instance, in bullet point -- in the last three bullet  
10 points, let's say, would the Delta -- the conditions  
11 that you describe as "Delta conditions in the late 19th  
12 and 20th century do not represent natural conditions,"  
13 does that have, in your mind, any difference whether or  
14 not the North Delta Diversions are permitted?

15           MR. MIZELL: Objection, outside the scope of  
16 his testimony.

17           CO-HEARING OFFICER DODUC: Sustained.

18           MR. JACKSON: And in bullet point -- the last  
19 bullet point, "natural conditions cannot be restored  
20 using the unimpaired flow hydrograph," could natural  
21 conditions be restored using any hydrograph?

22           WITNESS HUTTON: In my opinion, no.

23           MR. JACKSON: I'm finished.

24           CO-HEARING OFFICER DODUC: Thank you,  
25 Mr. Jackson.

1 Mr. Herrick, you owe Mr. Jackson.

2 MR. HERRICK: Immeasurably.

3 MR. JACKSON: That's clearly an overstatement.

4 CO-HEARING OFFICER DODUC: And a heads up to  
5 you, Mr. Herrick. I don't know if you've had the  
6 chance to see it, but Ms. Morris filed a request to  
7 conduct further cross of Mr. Burke.

8 And she will not be here, I understand, until  
9 11:00 o'clock. So at that time, I would like to hear  
10 from her as well as give you the opportunity to respond  
11 as well -- or Mr. Ruiz, if he's here, one of you.

12 MR. HERRICK: I will. Thank you. Mr. Ruiz  
13 sent an e-mail to everybody subsequent to Ms. Morris's.

14 CO-HEARING OFFICER DODUC: Oh, okay.

15 MR. HERRICK: So I will be here at 11:00-ish  
16 to answer any questions or respond.

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

19 MR. HERRICK: Thank you. And thank you for  
20 your consideration of my lack of travel speed getting  
21 here.

22 CROSS-EXAMINATION BY MR. HERRICK

23 MR. HERRICK: John Herrick for the South Delta  
24 parties. Thank you, Madam Chair, Madam Chair, and  
25 Board Member.

1 I don't have that many, but I don't think  
2 I'll -- I don't think it will take too long, but I do  
3 have to go through a few things. Most of my questions  
4 will be for Dr. Hutton.

5 Welcome.

6 And if I can -- I'll get organized. Sorry.

7 If we can pull up Dr. Hutton's testimony,  
8 which is DWR-1224. And if we go to Page 5, Line 6, do  
9 you see that, Dr. Hutton? You discuss overwhelming  
10 climate variability. I don't mean to take that out of  
11 context, but. . .

12 WITNESS HUTTON: I'm sorry, which line?

13 Oh, thank you.

14 MR. HERRICK: Dr. Hutton, did you -- did you  
15 put any numbers on what you describe as climate  
16 variability?

17 MR. BERLINER: Objection, vague and ambiguous.

18 CO-HEARING OFFICER DODUC: Mr. Berliner, your  
19 microphone is not on.

20 MR. HERRICK: Let me restate, if I can, make  
21 it better.

22 When you referenced this overwhelming climate  
23 variability, in your analysis at some point, did you  
24 put numbers on that so you could use that or describe  
25 that variability in the modeling?



1           MR. BERLINER: Same objection. May I suggest  
2 using the word "quantify"?

3           MR. HERRICK: Sure.

4           WITNESS HUTTON: In one place in my testimony,  
5 I do use the Eight-River Unimpaired Runoff as a measure  
6 of climatic variability.

7           MR. HERRICK: So just the -- I guess the  
8 yearly or monthly changes in that flow number is how  
9 you dealt with climate variability?

10          WITNESS HUTTON: Yes.

11          MR. HERRICK: And I apologize if I  
12 misunderstood. Did you just say the Eight-River Index  
13 or the Four-River Index?

14          WITNESS HUTTON: The Eight-River Index.

15          MR. HERRICK: If we go to Figure 2, which is  
16 Page 7 of your testimony, Dr. Hutton, is it correct  
17 that the bottom -- well, I'll just say the boxed bottom  
18 graph there, it's labeled "Remainder," correct?

19          WITNESS HUTTON: Yes.

20          MR. HERRICK: And is it correct to say that,  
21 when you used to term "remainder," that means  
22 everything else that you weren't able to account for?

23          WITNESS HUTTON: Yes, that is the unexplained  
24 component.

25          MR. HERRICK: And does that -- this is my

1 term, so can you disagree with it when I say does that  
2 large -- are those large changes in the remainder, does  
3 that affect your ability to draw conclusions from the  
4 other potential causes or other potential impact?

5 WITNESS HUTTON: That is not how I would  
6 interpret this. I -- the way I would interpret that is  
7 that all the other -- what this is showing is that is  
8 the overriding driver, if you will, in -- in  
9 variability.

10 And the top -- maybe if I -- would the Hearing  
11 Officers want me to go over the different elements of  
12 the charts to put this into context?

13 CO-HEARING OFFICER DODUC: Is it necessary to  
14 answer Mr. Herrick's question?

15 WITNESS HUTTON: No, it is not.

16 Okay. No, the bottom chart is -- which is  
17 showing the unexplained component, that is the major  
18 driver in the -- whatever trend one would see in the  
19 very top chart, which is the -- which is the outflow  
20 itself.

21 MR. HERRICK: Do you know whether or not -- or  
22 can we know whether or not any of the remainder  
23 actually would end up being attributed to one of those  
24 other factors that we just don't know yet?

25 WITNESS HUTTON: There certainly are factors.

1 But what it is not, it is not the seasonal component,  
2 which is the second box. And it is not the time trend,  
3 which is shown in the fourth box and which is amplified  
4 in the third box.

5 MR. HERRICK: Okay. In Figure 4, which is on  
6 Page -- sorry, 11, I think you're claiming that the  
7 bars in the boxes for any particular month don't show  
8 significant trends; is that correct?

9 WITNESS HUTTON: The bars that are shown in  
10 blue are significant trends. If the -- if the bars are  
11 pointing downward, that means that's a decreasing  
12 trend. If the bars are pointing upward, it is an  
13 increasing trend.

14 MR. HERRICK: And then although some of us are  
15 color-blind, you have lighter colored bars in there,  
16 correct?

17 WITNESS HUTTON: Yes.

18 MR. HERRICK: And you don't believe those  
19 lighter -- you don't believe the data that those bars  
20 represent is significant or as significant as the data  
21 in the blue bars -- if they're blue?

22 WITNESS HUTTON: Yes. In this work, I used  
23 well-established statistical methods, so it's not just  
24 a matter of my opinion. This was based on the analysis  
25 that was conducted. Those gray bars do show that those

1 aren't statistically significant trends.

2 MR. HERRICK: In the -- I'll call it the upper  
3 right box, which is the 1968 through 2015 box for Delta  
4 outflow -- do you see that?

5 WITNESS HUTTON: Yes.

6 MR. HERRICK: And I believe -- I mean, it's  
7 hard to read, but for the months of July and August, I  
8 don't see any -- I don't see any line of any measurable  
9 amount. Is there a little bit more or less?

10 Anyway, if you're looking at those two months,  
11 the question is I think earlier in your testimony you  
12 talk about the only statistical significance is that  
13 there's an increase in outflow during July and August.  
14 I'm just asking you does that jibe with that box we're  
15 looking at, that upper right box?

16 WITNESS HUTTON: Yes, what's in my testimony  
17 is referring to the upper left box, which is the full  
18 period of record, the 1922 to 2015. So if you look at  
19 July and August, those are -- July and August are the  
20 blue bars that are going up.

21 MR. HERRICK: And in that 1922 to 2015 box,  
22 you show, April and May, significantly larger decreases  
23 than the increases in July/August, correct?

24 WITNESS HUTTON: Yes, the slopes are -- are  
25 larger.

1           MR. HERRICK: Now, do you know whether or not  
2 the Phase 2 Scientific Basis Report broke things into  
3 monthly data, or did it use seasonally [sic] data --  
4 groups of seasonally data?

5           WITNESS HUTTON: Right off the top of my head,  
6 I -- I don't recall.

7           MR. HERRICK: It's all right. This isn't a  
8 test.

9           Now, as a general principle, it's true, isn't  
10 it, that the more data points you have, the more  
11 reliable the conclusions you can draw? Would that be  
12 correct?

13          WITNESS HUTTON: That is certainly the basis  
14 of statistical significance is that one of the factors  
15 is the number of data points.

16          MR. HERRICK: So by separating the data into  
17 months instead of seasons, would you agree that the  
18 monthly data trends you've come up with may not be as  
19 statistically reliable as the broader data group in a  
20 seasonal data set?

21          WITNESS HUTTON: No, I wouldn't agree that  
22 with that statement.

23          MR. HERRICK: Let's go Figure 5, which is  
24 Page 13.

25          And just for the record, this many lines --

1 this many bars of different colors is like a  
2 poor-to-bad joke played upon Mr. Herrick here. But I  
3 will ignore that.

4 Dr. Hutton, you suggest in your testimony that  
5 there was a decrease in Fall X2 after Shasta was  
6 constructed in 1945. Do you recall that? I think that  
7 was on Page 12, Line 19.

8 WITNESS HUTTON: Could we go to that?

9 MR. HERRICK: Yeah, sorry. Didn't mean to  
10 jump ahead like that. 19 through, what, 22 or  
11 something. Do you see that?

12 WITNESS HUTTON: Yes.

13 MR. HERRICK: Then if we go back to the  
14 Figure 5 on Page 13 -- I don't want to misinterpret a  
15 line on a chart, graph, whatever this is. But it  
16 appears that sometime in 1945 is in the middle of a  
17 decades long downward trend in X2, not that there's a  
18 drop-off in 1945 due to whatever, Shasta, as you  
19 suggest. Would you agree with that?

20 WITNESS HUTTON: The reason I wouldn't  
21 necessarily agree with that is there is a mechanistic  
22 reason to expect Fall X2 to have decreased once Shasta  
23 was built because, once Shasta was built, it was  
24 particular- -- more so in the early, earlier years of  
25 operation, there was very little demand for water in

1 Shasta. So they were actually -- actually, for  
2 pre-flood control releases, they were dumping water as  
3 early as September.

4 MR. HERRICK: Okay. I don't know if that  
5 answered my question. But is it your -- does your  
6 written testimony about Shasta causing a decrease in  
7 Fall X2 match the line you have on this Figure 5?

8 WITNESS HUTTON: Actually, probably better --  
9 this question is really in reference to attribution,  
10 which means what is causing the change in salinity.

11 In my testimony, I have other graphs that  
12 actually get to that issue, which is better. This is  
13 strictly looking at a time series and is not getting to  
14 the issue of attribution.

15 So I could better answer questions about  
16 attribution by referring to other figures in my  
17 testimony.

18 MR. HERRICK: That's fine. I'm not trying to  
19 beat a dead horse, but your testimony on Page 12, Lines  
20 19, et seq., talked about September. And Figure 5 is  
21 the September X2, correct?

22 WITNESS HUTTON: Yes.

23 MR. HERRICK: Okay. Let's move on.

24 On Page 30 -- on Page 30 of your testimony,  
25 excuse me, just to give you a framework before I ask

1 the question. Dealing with your opinion there, B,  
2 which I believe is 4.B -- and again this is just a  
3 background.

4 The opinion deals with whether or not  
5 conditions prior to 1916 or '17 at Antioch were an  
6 indication of what's natural or not. I don't want to  
7 overstate or misstate, but that's the basis of where  
8 we're going.

9 Do you agree that the Delta, as a measured by  
10 water quality at Antioch, was better -- was fresher  
11 prior to 1917?

12 WITNESS HUTTON: The --

13 MR. HERRICK: The follow up will allow you to  
14 explain your -- I don't mean to interrupt you. I'll  
15 ask you a follow-up to allow you to explain.

16 WITNESS HUTTON: Yeah, the period referred to  
17 by Dr. Paulsen, I believe it's very reasonable to  
18 assume that the conditions were very fresh in the late  
19 19th and early 20th century. And in my testimony I  
20 give reasons why I think that is the case.

21 MR. HERRICK: Do you think they weren't  
22 fresher prior to 1917?

23 WITNESS HUTTON: No, I do -- I do believe they  
24 were.

25 MR. HERRICK: Okay. Your objection or your



1 opinion is that those fresher conditions over whatever  
2 time period before 1917 were not necessarily natural  
3 conditions?

4 WITNESS HUTTON: Correct.

5 MR. HERRICK: Antioch Exhibit 216, I don't  
6 know if we need to bring that up, but that's one of the  
7 reports that I believe you dealt with. Didn't that  
8 report look at salinity for the past 2500 years, not  
9 just a few decades?

10 WITNESS HUTTON: I can answer this -- this --  
11 I'll try to keep this succinct. It --

12 CO-HEARING OFFICER DODUC: It's not a yes and  
13 no answer?

14 MR. HERRICK: I'll ask you a follow-up to  
15 allow you to --

16 WITNESS HUTTON: I would say the way it was --  
17 the question is phrased, I would not -- no, it's not a  
18 yes or no answer.

19 MR. HERRICK: Okay. I'll follow up. That's  
20 all right.

21 Of course, we don't have gauges or  
22 measurements or other data from, you know, 1700 or 1801  
23 or -- correct? We don't have that sort of specific  
24 data; we all agree to that, correct?

25 WITNESS HUTTON: Yes.

1           MR. HERRICK: But this report, anyway, made  
2 efforts to make conclusions on water quality conditions  
3 in the Delta, correct?

4           WITNESS HUTTON: Yes.

5           MR. HERRICK: And it did -- rightfully or  
6 wrongfully, it didn't make conclusions with regards to  
7 the prior 2500 years, correct?

8           WITNESS HUTTON: Yes.

9           MR. HERRICK: And it concluded that the last  
10 hundred years -- I'm not sure when that last hundred  
11 would be -- but the last hundred years-ish was the  
12 saltiest in the that 2500-year period?

13           WITNESS HUTTON: Yes. That was the conclusion  
14 from that report.

15           MR. HERRICK: So would you agree that, when  
16 Ms. -- Dr. Paulsen testified on behalf of a number of  
17 entities, but including Antioch, she wasn't just  
18 looking at that 1849 to 1917 period, but her analysis  
19 did include this report, which was a much larger time  
20 frame, correct?

21           WITNESS HUTTON: When I read Dr. Paulsen's  
22 testimony, it is my assumption that she is referring  
23 specifically to the late 18 -- or late 19th and early  
24 20th century with her talking about -- she -- she talks  
25 about the unique role of the City of Antioch, that they

1 were established in 1850 and that they -- and therefore  
2 there was an anecdotal records in terms of the quality.

3 She refers to the -- the barge travel data  
4 that a -- that an industrial user of water took to  
5 infer water quality conditions. So I believe it --  
6 when I read Dr. Paulsen's testimony, I believed she was  
7 referring not to the entire 2500 years but to a more  
8 focused period. At least that was my interpretation of  
9 her testimony.

10 MR. HERRICK: Yes, I don't want to overstate  
11 or understate. In your opinion, then, Dr. Paulsen at  
12 least concentrated on the era of time for which we had  
13 more direct information?

14 WITNESS HUTTON: Yes.

15 MR. HERRICK: But do you disagree that she did  
16 rely upon this report that purportedly examined water  
17 quality over a 2500-year period?

18 WITNESS HUTTON: No, I don't disagree with  
19 that.

20 MR. HERRICK: On Page 30, again, of your  
21 testimony, on Lines 13 through 22 you talk about the  
22 anthropomorphic changes. Do you see that? Again, this  
23 is just the lead-in. I'm not trying to trick you or  
24 anything.

25 So in your opinion, I believe you state that

1 the in-Delta channelization and the reclamation of  
2 Delta lands and upstream wetlands caused more water to  
3 be available in the Delta as outflow; is that a correct  
4 summary?

5 WITNESS HUTTON: Yes.

6 MR. HERRICK: Did you examine Antioch Exhibit  
7 No. 233 in arriving at your conclusion? And that is  
8 the 1931 State Department of Public Works Report.

9 WITNESS HUTTON: Yes, I'm very familiar with  
10 that document.

11 MR. HERRICK: We belong to the very small  
12 brotherhood of people who have read that whole thing.  
13 I don't know if that's good, but that's why I can't see  
14 anything anymore.

15 Didn't that report find the exact opposite in  
16 that the upstream wetlands used to be a temporary  
17 reservoir of water so that water slowly fed back into  
18 the Delta and didn't increase outflow at earlier times;  
19 it spread the outflow out over more longer periods.

20 WITNESS HUTTON: That finding, which, yes,  
21 that was discussed in that report, that gets to the  
22 timing of Delta outflow. That does not go necessarily  
23 to the volume of Delta outflow.

24 MR. HERRICK: Correct. It did deal with the  
25 water quality. And would you agree that that report

1 concluded that that reclamation of the upstream  
2 wetlands, to some extent, exacerbated salinity  
3 intrusion into the Delta?

4 WITNESS HUTTON: Sorry. Could you repeat  
5 that?

6 MR. HERRICK: Yeah. Would you agree that that  
7 report concluded that that reclamation of the upstream  
8 wetlands, to some extent, resulted in the increase in  
9 salinity intrusion into the Delta?

10 WITNESS HUTTON: Yes. That was the full  
11 reclamation. So going back to my -- my earlier point  
12 was that -- my point was, in this intervening period  
13 late in the mid-late 19th century, early 20th century,  
14 reclamation had -- some aspects had taken place. For  
15 example, levees had been put up, wetlands had been  
16 removed, riparian vegetation had been removed.

17 But agriculture had not really taken -- had  
18 not taken off to some degree. So what my opinion is is  
19 the system was in a transition where evapo- -- where  
20 some of these factors had taken place which were  
21 reducing the system-wide ET. But this was before  
22 irrigated agriculture had started taking place.

23 So I think that was a transition period where  
24 actually Delta outflow was probably higher than natural  
25 conditions. And then over time, as agriculture started

1 developing more, other water use in the system took  
2 place, then that phenomenon was being reversed.

3 MR. HERRICK: Well, let me start over then  
4 because, although we talk about outflow, the basis of,  
5 I think, Dr. Paulsen's testimony and your testimony is  
6 dealing with the effects on salinity in the water in  
7 the Delta, not just whether the outflow number is  
8 greater.

9 I understood your position to be that the --  
10 whether this is a transition period or not, that the  
11 reclamation of those wetlands and in the Delta and the  
12 channelization produced more outflow, which freshened  
13 the Delta. Is that -- did I misread your  
14 interpretation -- your conclusion?

15 WITNESS HUTTON: No, that's correct.

16 MR. HERRICK: So the point I'm trying to make  
17 is don't you -- would you agree that that 19- -- was  
18 it -- '31 study, it made the opposite conclusion, that  
19 all of that reclamation of wetlands resulted in  
20 salinity intrusion, not a freshening of the Delta?

21 WITNESS HUTTON: Okay. Yes. So this report  
22 is -- was in 1931, and this was responding to a  
23 condition that was being observed post-1917. So this  
24 was when rice -- rice had been -- was starting to be  
25 developed.

1           So the point I was making earlier about  
2 agriculture not being very well developed, this was  
3 actually in the period -- this report was being written  
4 directly in response to this issue that -- that  
5 agriculture was starting to take off. And not only  
6 that but that the hydrologic conditions had really --  
7 had changed quit a bit, going from a really wet period,  
8 say pre-1917, to a series of drought years.

9           So, no, I don't -- I do not believe that my  
10 testimony is in conflict with the -- with this -- with  
11 the 1931 document.

12           MR. HERRICK: I was going to follow up on that  
13 until you ended it with an actual answer. Thank you.

14           On Page 30, Lines 23 through 28, you're  
15 dealing with the wet versus dry period prior to 1917.  
16 Again, that's just the framework. I'm not trying to  
17 misstate your testimony, but Lines 23 through 28, do  
18 you see that?

19           WITNESS HUTTON: Yes.

20           MR. HERRICK: Are you trying to imply or state  
21 that 1872 to 1972 -- I'm sorry. Let me restart that.  
22 That wasn't even close.

23           Are you implying or stating that the period  
24 from 1872 to 1917 was a wet period?

25           WITNESS HUTTON: Could we -- could we go down

1 to the graphic?

2           So what I'm -- certainly, like all time  
3 sequences, there are going to be wet years and dry  
4 years. But if you -- by looking at Figure 18, in  
5 broader terms -- yeah, let me back up and describe.

6           This is showing the Eight-River Index by  
7 decade going all the way from the 1870s to current.  
8 The point I was trying to make in this graphic is, when  
9 you look at that early sequence, to really support my  
10 contention about being wetter, the Eight-River Index  
11 does show that, overall, that period was a lot wetter.

12           Now, that's not to say that certainly within  
13 the 1870s to 1920 there were -- there were certainly  
14 dry years in there as well. In fact, this -- when we  
15 start seeing -- around 1917 is when we started seeing a  
16 sequence of dry years.

17           MR. HERRICK: Well, that's the question then.  
18 Your Figure 18 groups years together to -- for the  
19 Eight-River Index. Is there a reason you didn't just  
20 do the individual years for that time frame?

21           WITNESS HUTTON: That certainly could be done.  
22 I --

23           MR. HERRICK: Was it -- I'm sorry. Wasn't  
24 there a drought in 1871 to 1872?

25           WITNESS HUTTON: I don't know.



1           MR. HERRICK: Do you know whether or not there  
2 were a number of dry years during that period?

3           WITNESS HUTTON: There certainly were. The --  
4 probably more directly to my testimony, where  
5 Dr. Paulsen is relying on the -- the Antioch exhibit,  
6 the 1908 to 1917 -- or 1916 period, six of those nine  
7 years are wet. And so the point of my testimony there  
8 was using that period to characterize that period is  
9 very biased.

10          MR. HERRICK: Are you aware of any information  
11 that indicates the City of Antioch was not able to get  
12 its usable water supply during the dry years in that  
13 time period?

14          MR. MIZELL: Objection, goes beyond the scope  
15 of his testimony. He did not discuss whether or not  
16 the City of Antioch was able to achieve their water  
17 supply goals or not.

18          CO-HEARING OFFICER DODUC: Mr. Herrick, care  
19 to respond?

20          MR. HERRICK: Well, I'm not sure that's  
21 correct. When the witness is rebutting testimony of  
22 the water quality for Antioch and I ask him a question  
23 about whether the water quality -- does he know if the  
24 water quality affected Antioch, I don't see how that's  
25 beyond the scope.

1           But it's not that big a deal. If you don't  
2 want to overrule it or sustain it or whatever you want,  
3 I think it's an appropriate question.

4           CO-HEARING OFFICER DODUC: Are you able to  
5 answer, based on the analysis that you did for this  
6 testimony?

7           WITNESS HUTTON: No.

8           CO-HEARING OFFICER DODUC: Okay.

9           MR. HERRICK: Moving to your Page 31 of your  
10 testimony and, I think, Lines -- sorry. I'm on the  
11 wrong page.

12           You -- on -- anyway, on Page 31 you talk about  
13 the C&H water quality data. Do you recall that?

14           WITNESS HUTTON: Yes.

15           MR. HERRICK: Do you know -- are you aware  
16 that C&H Sugar placed their plant at Crockett because  
17 it was originally a reliable source of fresh water in  
18 that location?

19           WITNESS HUTTON: No, I'm not -- I'm not aware  
20 of why they selected that location.

21           MR. HERRICK: Do you know if C&H Sugar started  
22 keeping data only after they experienced salinity  
23 problems?

24           WITNESS HUTTON: They started collecting data  
25 in 1908, which, as I mentioned before, during that 1908

1 to 1916, it was a generally very fresh. Six of the  
2 nine years were considered -- were wet years.

3 MR. HERRICK: Okay. The question was do you  
4 know whether or not Antioch [sic] started collecting  
5 water quality data because of salinity problems?

6 WITNESS HUTTON: Oh, I misunderstood. No, the  
7 reason --

8 MR. HERRICK: There's a potential objection.

9 CO-HEARING OFFICER DODUC: Hold on.

10 Ms. Sheehan.

11 MS. SHEEHAN: Becky Sheehan for State Water  
12 Contractors.

13 I believe Mr. Herrick mistakenly said  
14 "Antioch" in that question when I believe he meant C&H  
15 Sugar.

16 MR. HERRICK: I did mean C&H Sugar. I  
17 apologize.

18 WITNESS HUTTON: Could you rephrase the  
19 question?

20 MR. HERRICK: Let me start that over then.

21 Do you know whether or not C&H Sugar began  
22 collecting water quality data on only after they  
23 experienced salinity problems at their intake?

24 WITNESS HUTTON: That's -- I thought I  
25 answered that. You're asking me a date and not a why?

1 Or am I misinterpreting the question?

2 MR. HERRICK: I'm asking a why. I believe  
3 your last answer was that there were a number of wet  
4 years in that period. But that wasn't the question I  
5 originally asked. I'm trying to find out if you know  
6 the reason why they began collecting water quality  
7 data.

8 WITNESS HUTTON: Okay. So to be more  
9 specific, they weren't -- what -- the data they were  
10 collecting was an implied water quality. What they  
11 were actually measuring was the distance, how far they  
12 had to travel on their barge upstream of Crockett to  
13 collect water of a certain quality.

14 So through that measurement, we can now -- we  
15 can better infer what we think the water quality may  
16 have been based on that measurement.

17 CO-HEARING OFFICER DODUC: Do you know why  
18 they started to do that?

19 MR. HERRICK: That's still not the question.

20 CO-HEARING OFFICER DODUC: Do you know why  
21 they started to collect that data? And if you don't,  
22 you don't.

23 MR. HERRICK: That's fine.

24 WITNESS HUTTON: I -- yeah, I'd have to  
25 speculate. No.

1 MR. HERRICK: Dr. Paulsen, you --

2 CO-HEARING OFFICER DODUC: Oh, Mr. Herrick.

3 Are you going to object to that now, too?

4 MR. HERRICK: It's hard for me to act in

5 public. I apologize.

6 Dr. Hutton, you talk about there being a phase

7 shift in the data from Antioch Exhibit 216; is that

8 correct?

9 WITNESS HUTTON: It's a phase shift -- shift

10 in the Contra Costa Water District reports'

11 interpretation of the C&H data.

12 MR. HERRICK: And what methodology did you use

13 to find this phase shift?

14 WITNESS HUTTON: I looked at -- at three

15 things. The first is -- is referred here, the

16 Antioch 232. That's the Means 1928 document. They

17 have a -- in that document, there is a tabulation of a

18 subset of the C&H data. I found that the way the

19 Contra Costa report had interpreted the data off of

20 that chart was not consistent with the Means

21 tabulation. That's the first.

22 There were two other approaches that I used.

23 One was I used a -- a flow measure. And I correlated

24 the flow with my interpretation of this barge travel

25 data. And I also did that correlation of flow with the

1 interpretation as provided by Contra Costa Water  
2 District. And my -- my interpretation provided a much  
3 better correlation with the flow data.

4 Thirdly --

5 CO-HEARING OFFICER DODUC: Hold on.

6 Mr. Herrick.

7 MR. HERRICK: No, that's fine. I thought he  
8 was done.

9 CO-HEARING OFFICER DODUC: Go ahead.

10 WITNESS HUTTON: Then, thirdly, I looked at  
11 the overall seasonal trends implied by the Contra Costa  
12 Water District report. And that was showing -- the  
13 seasonal trends don't line up with how I've seen later  
14 data in the, say, pre-Shasta in terms of peak salinity  
15 and minimal salinity throughout the year.

16 And this is something I'm actually -- it's not  
17 part of my testimony, but it is a report that I've  
18 prepared and am -- and I am going to be giving a talk  
19 on this. So I -- I've looked at that data and just --  
20 I'm bringing that up only to say that I've looked at  
21 this data in great detail.

22 MR. HERRICK: Is this phase shift, did you  
23 call it, is that also reflected in the graphs in that  
24 1931 report?

25 WITNESS HUTTON: No.

1           MR. HERRICK: So the 1931 report would better  
2 reflect reality than, you think, the Contra Costa  
3 report does?

4           WITNESS HUTTON: Yes.

5           MR. HERRICK: Switching to climate change --  
6 let me see how much time I've got here.

7           Do you know what changes remain in the  
8 CalSim II model to -- to account for precipitation  
9 changes due to climate change?

10          WITNESS HUTTON: I'm sorry. Could you repeat  
11 the question?

12          MR. HERRICK: Yeah. Do you know what changes  
13 were made in CalSim II, if any, to reflect climate  
14 change with regard to changes in precipitation,  
15 particularly in the future?

16          WITNESS HUTTON: Precipitation specifically,  
17 no.

18          MR. HERRICK: I'm not tricking. This is just  
19 trying to explore if you're familiar with what  
20 adjustments were in the CalSim modeling used for the --  
21 the climate change or to include climate change. And  
22 would that be the same answer for changes in snowpack  
23 or snow melt and stuff like that?

24          WITNESS HUTTON: Yeah, any of my knowledge  
25 would be very limited.

1           MR. HERRICK: Now, when you're referring to  
2 data dealing with climate change, that's all CalSim II  
3 modeling; is that correct?

4           WITNESS HUTTON: No. Can you refer -- can you  
5 refer to me where I'm talking about climate change?

6           MR. HERRICK: Yeah. I didn't write that down;  
7 I apologize.

8           WITNESS HUTTON: Yeah, I don't -- I don't  
9 believe I discussed climate change in my testimony.

10          MR. HERRICK: Maybe it was just an underlying  
11 question I had. Sorry.

12          You do discuss DWR-1286, correct?

13          WITNESS HUTTON: Can you help me out with  
14 that?

15          MR. HERRICK: I'm sorry; I'm jumping back.  
16 That's Page 16. So it's under your long-term trends in  
17 Fall X2. And I'm just looking really quickly. It's  
18 Line 13.

19          Is this appropriate to explore his  
20 understanding of things in 1286, Madam Chair?

21          CO-HEARING OFFICER DODUC: He cited to it.

22          Did you use it in performing your rebuttal  
23 testimony?

24          WITNESS HUTTON: Oh, 1286?

25          MR. HERRICK: Page 16.



1           WITNESS HUTTON: Okay. Yes. This is -- this  
2 is one of my manuscripts, yes.

3           MR. HERRICK: Is it correct to say that you or  
4 other authors made several significant adjustments to  
5 the historical data in order to do the modeling  
6 described or contained in DWR-1286?

7           WITNESS HUTTON: I'd probably need quite a bit  
8 of expansion on that question to answer it.

9           MR. HERRICK: Okay. I'll pass on that.  
10 Sorry.

11           Could we pull up DWR-1286 really quickly,  
12 please, Page 8. Page 8, which is Table 3. That's  
13 Figure 4. There we go, Table 3.

14           Do you see this, Dr. Hutton?

15           WITNESS HUTTON: Yes.

16           MR. HERRICK: Does this table indicate that  
17 project operations are the cause of Delta outflow  
18 decreasing on an annual basis?

19           WITNESS HUTTON: Yes.

20           MR. HERRICK: That's all I have for  
21 Dr. Hutton.

22           Can I ask Dr. Hanson two or three questions?

23           CO-HEARING OFFICER DODUC: Certainly.

24           MR. HERRICK: Without being accused of being  
25 petty?

1 CO-HEARING OFFICER DODUC: As long as they're  
2 two or three engineering questions.

3 MR. HERRICK: As long as they make sense.

4 Welcome, Dr. Hanson. John Herrick for South  
5 Delta parties.

6 WITNESS HANSON: Good morning.

7 MR. HERRICK: Could we pull up SWRCB-23.

8 And -- 23, sorry.

9 Could you go to Page 13 of the document? That  
10 may not be the PDF page but Page 13 of the document.

11 CO-HEARING OFFICER DODUC: Let's state for the  
12 record what it is, Mr. Herrick.

13 MR. HERRICK: Yes. SWRCB-23 is D1485,  
14 Decision 1485.

15 And I'm not trying to trick you or anything.  
16 I just want to ask you, based only your conclusion --  
17 conclusions about the effects of the projects on  
18 fisheries -- I guess it was salmon. I just want to ask  
19 you quick questions.

20 The first, Page 13. Page 13. There you go,  
21 right there.

22 And you see the paragraph that starts with,  
23 "While the standards in this Decision" -- do you see  
24 that?

25 WITNESS HANSON: I do.

1           MR. HERRICK: And if we go down one, two,  
2 three, four lines, do you see the sentence that says,  
3 "To provide full mitigation"?

4           WITNESS HANSON: I do.

5           MR. HERRICK: Could you read that sentence  
6 real quickly, just to yourself.

7           WITNESS HANSON: All right.

8           MR. HERRICK: So that sentence in D16- --  
9 D1485, excuse me, concludes that, in order to mitigate  
10 the projects' impacts on fisheries would require a  
11 virtual shutting down of the projects. Do you see  
12 that? Is that a fair summary?

13          WITNESS HANSON: I do see that, yes.

14          CO-HEARING OFFICER DODUC: Ms. Sheehan.

15          MS. SHEEHAN: I just wanted to clarify that  
16 the actual language in 1485 says "full mitigation for  
17 project impacts."

18          MR. HERRICK: That's fine.

19          CO-HEARING OFFICER DODUC: That's what it  
20 says.

21          MR. HERRICK: Now, what has happened to the  
22 state of the fisheries since the date of this decision,  
23 which is 1978?

24          WITNESS HANSON: Could you expand on what you  
25 mean by "state of the fisheries"?

1           MR. HERRICK: Are the fisheries in the same  
2 state of health today as they were in 1978?

3           MR. MIZELL: Objection, vague and ambiguous.

4           MR. HERRICK: Are there less fish now, of  
5 certain species of the Delta?

6           MR. MIZELL: Objection, outside the scope.

7           CO-HEARING OFFICER DODUC: Hold on.

8           MR. HERRICK: We can do this all day, but I  
9 think the question is very clear.

10          CO-HEARING OFFICER DODUC: The question is  
11 indeed clear.

12          Ms. Sheehan.

13          MR. MIZELL: Dr. Hanson speaks only to salmon.

14          MS. SHEEHAN: I was going to say, there are  
15 many, many species of fish in the Delta. If he could  
16 please be specific as to which one.

17          MR. MIZELL: Precisely.

18          CO-HEARING OFFICER DODUC: Mr. Herrick.

19          MR. HERRICK: Well, I was asking about all of  
20 them, but if we want to limit that to salmon, we will.

21          Dr. Hanson, are the salmon that migrate in and  
22 through and back and forth through the Delta, are they  
23 in a better state of condition now, as in population,  
24 than they were in 1978?

25          WITNESS HANSON: For Central Valley salmonids

1 such as spring-run Chinook salmon, winter-run Chinook  
2 salmon, their populations have declined; for fall-run  
3 Chinook salmon, their populations have fluctuated. But  
4 there has been a general decline in salmonid  
5 populations.

6 MR. HERRICK: Yes. So are you, in your  
7 testimony, trying to suggest that the projects are not  
8 a major cause of the decline in fisheries in the  
9 Delta -- excuse me, decline of salmon fisheries in the  
10 Delta?

11 WITNESS HANSON: There are two aspects to how  
12 the projects -- well, a number of aspects how the  
13 projects could influence salmonids.

14 When I looked at one of those, which is  
15 referred to as direct loss -- that's how many salmon  
16 show up in the fish salvage facility -- I concluded, as  
17 have other authors, that that's a very small proportion  
18 of the overall population of salmon.

19 There's another process of indirect losses,  
20 which I did not address directly. But I did look at  
21 the relationship between exports and survival of  
22 salmon, primarily marked -- well, all marked salmon, to  
23 the Fish and Wildlife Service recapture location at  
24 Chipps Island.

25 And if the projects' export operations

1 specifically were having a big effect on salmon  
2 survival, then I would have expected to see a stronger  
3 trend in that data, and I didn't.

4 MR. HERRICK: Let me ask the question one more  
5 time.

6 Is it your opinion that the operation of the  
7 Central Valley Project and the State Water Project are  
8 not a main cause of the decrease of the salmon  
9 fisheries?

10 CO-HEARING OFFICER DODUC: Mr. Berliner.

11 MR. BERLINER: Sure. Objection as -- in two  
12 ways. One, it's been asked and answered.

13 The other is the relativity of the expression,  
14 to which I'm objecting to as well, of the "main cause."  
15 We have multiple life stages. We have locations. We  
16 have different activities. Some relativity on what  
17 "main cause" means would be helpful.

18 MR. HERRICK: Well, I believe in common  
19 parlance the word "main" means 50 percent or higher.  
20 The question was asked, and it wasn't answered; he  
21 answered by stating what analyses he had done.

22 But I'm trying to the to the basic underlying  
23 issue here, which is that his testimony seems to  
24 suggest that, because there are other things going on,  
25 that we shouldn't make too many conclusions about how

1 the projects are affecting the fish. And I'm --

2 CO-HEARING OFFICER DODUC: Stop right there.

3 Dr. Hanson, was that a fair assessment of your  
4 testimony that Mr. Herrick just said?

5 WITNESS HANSON: My testimony tried to  
6 evaluate some specific relationships between water  
7 project operations, specifically South Delta exports,  
8 and survival or salvage. And I'd never made a  
9 conclusion that the water projects in total are the  
10 main factor contributing to population changes in the  
11 Delta.

12 CO-HEARING OFFICER DODUC: And neither did you  
13 make a conclusion that they were not.

14 WITNESS HANSON: I did not because I don't  
15 think --

16 CO-HEARING OFFICER DODUC: Enough.

17 WITNESS HANSON: Sorry.

18 CO-HEARING OFFICER DODUC: Thank you.

19 MR. HERRICK: Thank you very much.

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

22 MR. HERRICK: Again, I apologize for being  
23 late.

24 CO-HEARING OFFICER DODUC: Okay. What I would  
25 like to do, if it's okay with the court reporter, is

1 take a short break until 11:00. We have about two  
2 hours of cross left. I would like to complete that  
3 before we take our lunch break. So we might take  
4 another short break sometime around the noonish hour,  
5 but I would like to complete the cross before we take  
6 our lunch break.

7 Mr. Jackson.

8 MR. JACKSON: I would ask indulgence to make a  
9 housekeeping statement, and that would be that  
10 tomorrow, when you have your meeting in regard to  
11 surrebuttal, that my clients be represented by  
12 Mr. Shutes so that -- and he will have authority to say  
13 whatever it is we're going to say. But I'd like to be  
14 gone tomorrow.

15 CO-HEARING OFFICER DODUC: Will he wear an  
16 equally wonderful shirt, like what you are sporting  
17 today?

18 MR. JACKSON: I don't know. I'm not in charge  
19 of his sartorial excesses.

20 CO-HEARING OFFICER DODUC: We wish you a happy  
21 day, Mr. Jackson, tomorrow.

22 With that, we will take a break until  
23 11:00 o'clock. Ms. Des Jardins, if you could set up,  
24 when we return, you will start your cross-examination.

25 (Recess taken)



1 CO-HEARING OFFICER DODUC: All right. It's  
2 11:00 o'clock. And let me provide a little bit of  
3 clarification, since I might have caused some  
4 confusion. We -- I plan to complete cross-examination  
5 of this panel and take a lunch break, if necessary.

6 My understanding from yesterday is that  
7 Mr. Mizell would like to request redirect of this  
8 panel. Depending on the extent of his redirect,  
9 depending on the extent of -- well, depends whether or  
10 not we grant that request -- the extent of the redirect  
11 and the potential extent of recross, if it's something  
12 that can be done in a short amount of time, then we  
13 might proceed before taking a lunch break.

14 Otherwise, I will be low on sugar, and all of  
15 us will need to take a break around -- I expect we'll  
16 be close to the 1:00 o'clock time frame if everyone  
17 keeps to their estimate of cross.

18 So with that, Ms. Des Jardins, your cross.

19 MS. DES JARDINS: Thank you.

20 CROSS-EXAMINATION BY MS. DES JARDINS

21 MS. DES JARDINS: I would like to bring up --  
22 is it Dr. Hutton's testimony Exhibit DWR-1224, Page 7.

23 CO-HEARING OFFICER DODUC: And to help us,  
24 Ms. Des Jardins, will you have questions for other  
25 witnesses?

1 MS. DES JARDINS: Yes.

2 CO-HEARING OFFICER DODUC: And will your  
3 question generally follow the testimony that they -- in  
4 terms of the order of your questioning, would it  
5 generally follow the presentation of their testimony?

6 The only reason I ask is, if not, it would be  
7 helpful to get a list of those topic areas so --

8 MS. DES JARDINS: Well --

9 CO-HEARING OFFICER DODUC: -- that we --

10 MS. DES JARDINS: -- I --

11 CO-HEARING OFFICER DODUC: -- might better  
12 follow you.

13 Ms. Des Jardins, I will again ask you to  
14 please wait until I or the witnesses or one of the  
15 attorneys stops speaking before you begin. It's  
16 important that, one, you hear everything we have to say  
17 but, even more importantly, that the court reporter is  
18 able to document and capture every word. Okay?

19 With that, please, if you're not going to be  
20 cross-examining these witnesses topicwise in the  
21 general order that is presented in their testimony like  
22 other cross-examiners have, then it would be very  
23 helpful for us to have an outline so that we may better  
24 follow your questioning.

25 MS. DES JARDINS: I could put this in order.

1 CO-HEARING OFFICER DODUC: Okay.

2 MS. DES JARDINS: But I was hoping I didn't  
3 have questions on another few things. This was  
4 following up on some of the questions that John Herrick  
5 asked.

6 Can we -- I wanted to ask particularly about  
7 this graph, and if we could go to it. So this is  
8 questions about changes.

9 So Dr. Hutton, doesn't the -- so the center  
10 there shows the time trend component. And it's  
11 increasing and then generally decreasing; is that  
12 correct?

13 WITNESS HUTTON: Yes. Both the third and the  
14 fourth boxes show the time trend. The lower box, the  
15 fourth one, shows it with the same scale as the other  
16 boxes. And you can see it's relatively flat.

17 I presented the third box just to blow it up  
18 to show it. If you really zoom in, you can see an  
19 increasing following -- following a decreasing trend,  
20 which is consistent with some of the other statistical  
21 methods that were shown in my testimony.

22 MS. DES JARDINS: Doesn't the beginning of  
23 this time period include severe droughts in the 1920s  
24 and early 1930s?

25 WITNESS HUTTON: That is correct.

1 MS. DES JARDINS: And wasn't this also a  
2 period of significant aridity in the entire western  
3 U.S.?

4 WITNESS HUTTON: Yes.

5 MS. DES JARDINS: And wasn't it as bad as --  
6 at the peak as any period in the tree ring record?

7 WITNESS HUTTON: I believe some experts have  
8 said that. I don't have an opinion one way or another  
9 on that.

10 MS. DES JARDINS: Could we go to IFR-2,  
11 please. It's under PCFFA, Group 38.

12 This is a publication by Edward Cook on  
13 long-term paleoclimate context.

14 And I'd like to go to Page 5, please. And  
15 scroll down. Could we zoom out, please.

16 CO-HEARING OFFICER DODUC: Hold on, please.

17 Ms. Sheehan.

18 MS. SHEEHAN: Yes, could we please establish  
19 whether the witness is familiar with this document or  
20 not?

21 MS. DES JARDINS: Are you familiar with tree  
22 ring reconstructions, Dr. Hutton, of paleoclimate?

23 WITNESS HUTTON: To some ex- -- I've read some  
24 literature on that. I'm not familiar with this  
25 particular document.

1 MS. DES JARDINS: Are you familiar with tree  
2 ring reconstructions to establish changes, long-term  
3 changes in aridity in the climate?

4 WITNESS HUTTON: I'm familiar with some of the  
5 tree ring literature specific to the Central Valley and  
6 in terms of reconstructing hydrology based on that.

7 MS. DES JARDINS: Your testimony covers  
8 long-term -- concerns climate variability, does it not?

9 WITNESS HUTTON: I bring up the issue of  
10 variability in my testimony in that it -- with respect  
11 to the annual Delta outflow trends, that the -- that  
12 probably one reason, even though we know that there has  
13 been increased water use since the 1920s, the -- the  
14 climatic variability has more than made up for that;  
15 therefore, I did not see a statistically significant  
16 change in the annual Delta outflow.

17 MS. DES JARDINS: But isn't the severity of  
18 the drought in that early period in terms of the  
19 entire -- our entire paleoclimate knowledge, isn't that  
20 significant for your assessment of climactic [sic]  
21 variability?

22 MR. MIZELL: Objection. At this point, the  
23 question has gone beyond the scope of Dr. Hutton's  
24 testimony. What we have is a question about the  
25 Paleolithic record.

1           Dr. Hutton's testimony extends back to the  
2 1920s and does not address a comparison between his  
3 analysis and the information that comes from tree ring  
4 studies. So to ask a question about that comparison is  
5 beyond the scope.

6           CO-HEARING OFFICER DODUC: Ms. Sheehan.

7           MS. SHEEHAN: I was going to object as to  
8 vague because she said "that drought," and there's been  
9 numerous, and it's unclear which drought she is  
10 referring to.

11           CO-HEARING OFFICER DODUC: Ms. Des Jardins,  
12 are you able to re-ask your question with a narrow  
13 scope that pertains to Dr. Hutton's testimony?

14           MS. DES JARDINS: We could go to a different  
15 exhibit, which is the Central Valley droughts. And I  
16 could show what the drought is.

17           Can we go to Exhibit PCFFA-74, please. 74.

18           And are you familiar with tree ring  
19 reconstructions of Sacramento River flow, Dr. Hanson?

20           CO-HEARING OFFICER DODUC: Dr. Hanson?

21           WITNESS HANSON: I'm not.

22           MS. DES JARDINS: So do you have any knowledge  
23 of -- you have no knowledge of paleoclimate data or of  
24 the severity of the drought in the 1920s or early 1930s  
25 in comparison to the paleoclimate record?

1 CO-HEARING OFFICER DODUC: Ms. Des Jardins,  
2 are you -- you just directed your last two questions at  
3 Dr. Hanson. Is that your intention?

4 MS. DES JARDINS: Oh, I'm sorry. Brain fart.  
5 Thank you, Hearing Chair.

6 Dr. Hutton, are you familiar with  
7 reconstruction of Sacramento River flow from tree ring  
8 data?

9 WITNESS HUTTON: I'm familiar with this paper.

10 MS. DES JARDINS: Okay. Can we go to PDF  
11 Page 6. This is by David Meko, et al.

12 And let's -- scroll down, please.

13 Is Figure 4 on Page 6, a time series of the  
14 reconstruction of the paleoclimate data in this paper?

15 WITNESS HUTTON: This is a reconstruction of  
16 the Sacramento Four-River Index based on tree ring  
17 data, which is -- the Sacramento River Index is the  
18 four main rivers on the Sacramento -- in the Sacramento  
19 basin.

20 MS. DES JARDINS: And doesn't it show an  
21 extended period starting in the mid '20s and continuing  
22 through the 1930s of reduced flow in the Sacramento  
23 River?

24 MR. MIZELL: Objection, vague and ambiguous.  
25 This graphic covers multiple centuries. To refer to

1 something from the '20s to the '30s is ambiguous as to  
2 which century she's speaking to.

3 CO-HEARING OFFICER DODUC: Clarify,  
4 Ms. Des Jardins.

5 MS. DES JARDINS: Is there a section of the  
6 graph from 1900 to 2000?

7 On the bottom of Figure 4, Dr. Hutton, do you  
8 see that?

9 WITNESS HUTTON: Yeah, I'm sorry. I'm not  
10 following your question.

11 MS. DES JARDINS: Is this graph on Figure 4 a  
12 series from 1600 to 2000?

13 WITNESS HUTTON: Yes, this is a series of the  
14 Sacramento Four-River Index that is reconstructed from  
15 tree rings.

16 MS. DES JARDINS: From the period of 1600 to  
17 2000, correct?

18 WITNESS HUTTON: Yes, 1630 to 2000.

19 MS. DES JARDINS: And is the bottom section  
20 from -- reconstructed from 1900 to 2000?

21 WITNESS HUTTON: Yes.

22 MS. DES JARDINS: And looking -- does it show  
23 a period between 1920 and 1940 in that section?

24 WITNESS HUTTON: Yes, I see that.

25 MS. DES JARDINS: And does the section



1 starting in the mid 1920s and going through the early  
2 part of the 1930s show an extended period of below  
3 average?

4 WITNESS HUTTON: Yes. I see that that --  
5 yeah. And that is reflective of the drought that  
6 occurred in the '20s and '30s.

7 MS. DES JARDINS: And isn't that -- comparing  
8 it with the rest of the period, isn't that a fairly  
9 extended period that is of similar magnitude to some of  
10 the most severe droughts in the entire record?

11 MR. MIZELL: Objection, goes beyond the scope  
12 of the witness's rebuttal testimony.

13 Again, the date ranges that Dr. Hutton speaks  
14 to do not go beyond the 1920s for these trend lines.  
15 And the earliest date in his testimony, which doesn't  
16 speak to this point, is 1872. So any comparison to  
17 dates beyond that is beyond the scope of his rebuttal  
18 testimony.

19 MS. DES JARDINS: Excuse me. But to the  
20 extent that Dr. Hutton is talking about climactic [sic]  
21 variability, the question of whether he's considering  
22 actual climactic variability in the record is -- is  
23 important.

24 CO-HEARING OFFICER DODUC: You may ask whether  
25 he considered it, but if he did not include it in his

1 testimony, then he should answer -- well, answer no.  
2 And then you won't be able to go beyond that in terms  
3 of asking him to do a comparison that he did not do as  
4 part of his rebuttal testimony.

5 MS. DES JARDINS: In considering the climactic  
6 variability in the 20th century, in your testimony, did  
7 you consider how severe the drought was in the 1920s  
8 and 1930s in comparison to the whole paleoclimactic  
9 [sic] record?

10 WITNESS HUTTON: I -- I think I know what the  
11 implied question is here. And I think I could answer  
12 it by going to -- I think the implied question here is  
13 when the trends that I'm looking at, the sequence of  
14 time is starting at the beginning of a drought. And  
15 I'd like to -- if I could go to one of my exhibits.

16 MS. DES JARDINS: Excuse me, Dr. Hutton. No.  
17 I asked you about whether you considered the  
18 paleoclimactic [sic] -- the severity of that event in  
19 the paeloclimactic record. And I'd like you to answer  
20 that question first rather than the implied question.

21 WITNESS HUTTON: I considered the climatic  
22 variability for which -- the time sequence for which I  
23 looked at, which was 1920s to the present.

24 MS. DES JARDINS: So you didn't consider --  
25 you didn't consider the overall -- you did not consider

1 how severe the drought was in the 1930s in comparison  
2 to -- to the paleoclima- -- to the entire record?

3 CO-HEARING OFFICER DODUC: Hold on, please.

4 Ms. Sheehan.

5 MS. SHEEHAN: I'd like to object as asked and  
6 answered. He did indicate that his analysis includes  
7 that drought.

8 MS. DES JARDINS: No. I asked if he did not  
9 consider how severe that period of drought was in  
10 comparison to -- to any -- any measure of severity in  
11 our understanding of -- from the paleoclimatic data.

12 CO-HEARING OFFICER DODUC: Answer her  
13 questions to the extent that you can, Dr. Hutton. And  
14 answer directly rather than -- I know you're trying to  
15 be helpful, but that just makes things more  
16 complicated.

17 WITNESS HUTTON: I did not address the paleo  
18 record, nor was there a -- in the analysis presented in  
19 my testimony, there was no reason to.

20 MS. DES JARDINS: So, again, I'd like to go to  
21 Exhibit DWR-1224, Page 10 at Line 1. And I wanted to  
22 ask, here, you talk about testimony in PCFFA-145 states  
23 that very significant reductions in spring flows exist  
24 during all water year types, particularly in April and  
25 May.

1 Do you see that?

2 WITNESS HUTTON: Yes.

3 MS. DES JARDINS: I'd like to go to Exhibit  
4 PCFFA-145. And I'd like to go to Page 6.

5 So Dr. Hutton, isn't this referring to very  
6 significant reductions in spring flows at Verona?

7 MR. BERLINER: Objection, we haven't  
8 established whether this witness is familiar with this  
9 document or not.

10 CO-HEARING OFFICER DODUC: He referred to it  
11 in his testimony.

12 MR. BERLINER: I apologize. I missed that.

13 WITNESS HUTTON: Can you please repeat the  
14 question?

15 MS. DES JARDINS: Do you see in the first  
16 bullet point where it says, "Very significant  
17 reductions in spring flows exist during all year types,  
18 particularly during April and May"?

19 WITNESS HUTTON: Yes.

20 CO-HEARING OFFICER DODUC: I'm sorry. Let's  
21 clarify. That's actually the second bullet on the  
22 page.

23 MS. DES JARDINS: Oh, right, right.

24 But isn't -- in the heading above, isn't it  
25 stating that Oroville resulted in very significant

1 changes to Feather River inflows to Verona?

2 WITNESS HUTTON: Yes.

3 MS. DES JARDINS: So isn't this section  
4 discussing changes to inflows at Verona?

5 WITNESS HUTTON: Yes, it is.

6 MS. DES JARDINS: I would like to go to  
7 Page 8, please. And if we can scroll up.

8 Dr. Hutton, doesn't this -- these are the  
9 graphs. And it shows hydrographs. Blue line is  
10 pre-Shasta and red line is post-Shasta.

11 And don't these graphs show significant  
12 reductions in spring flows in April and May at Verona?

13 WITNESS HUTTON: They do. And the reason why  
14 I refer to this document in my testimony is this --  
15 this document is mischaracterizing natural conditions.  
16 They are conflating pre-Shasta conditions and natural  
17 conditions.

18 If you see the caption in Figure 1, it says  
19 the median hydrographs pre- and post-Shasta represent  
20 the natural and impaired flow regimes.

21 MS. DES JARDINS: So it would be more correct  
22 to say they consider the without-dam and with-dam flow  
23 regimes?

24 WITNESS HUTTON: Yes. This was just -- this  
25 was one of many examples of conflating conditions that

1 are not natural. And, in this case, pre-Shasta were  
2 oftentimes. And they -- later on they do -- this  
3 document does the same with unimpaired flows.

4 MS. DES JARDINS: Let's go to Page 19 of this  
5 document.

6 Oh, no, never mind. I'm not seeing it there.

7 So I would like -- I believe that's all for  
8 this document.

9 But this document -- are you aware that this  
10 document is discussing inundation of the Yolo Bypass?  
11 Let's scroll back to the -- the beginning of the  
12 document, Page 1 and, in particular, "Inundation of  
13 Floodplains."

14 WITNESS HUTTON: I did not -- I did not focus  
15 on that as part of preparing for my testimony.

16 MS. DES JARDINS: And wasn't -- let's go back  
17 to Page 7 of your testimony, please. Excuse me,  
18 Page 10 of your testimony.

19 Doesn't this section of your testimony  
20 incorrectly characterize PCFFA-145 as representing very  
21 significant reductions in spring flow -- Delta outflow  
22 exists during all water year types, when in fact it's  
23 talking about flows into the Delta, flows at Verona?

24 WITNESS HUTTON: My -- the statement I'm  
25 reading on sentence two is "very significant reductions

1 in spring flows." So it's -- I didn't specify  
2 outflows, inflows, or anything. It's a general  
3 statement of just flows.

4 MS. DES JARDINS: Okay. Thank you.

5 Dr. Hutton -- I'd like to next go to  
6 Dr. Hutton's testimony.

7 CO-HEARING OFFICER DODUC: I'm sorry. You've  
8 been asking Dr. Hutton questions.

9 MS. DES JARDINS: Dr. Hanson's testimony. And  
10 I'd like to go to Page 4 and Line 12.

11 And Dr. Hanson, I apologize for getting your  
12 names mixed up.

13 You discuss here that the primary landscapes  
14 in the historical Delta included flood basins in the  
15 North Delta; is that correct?

16 WITNESS HANSON: That is correct.

17 MS. DES JARDINS: And in your opinion, is  
18 access to floodplain habitats important for salmonids?

19 WITNESS HANSON: It is.

20 MS. DES JARDINS: And was the Yolo Bypass an  
21 important flood basin in the North Delta?

22 WITNESS HANSON: It was one of the flood  
23 basins, yes.

24 MS. DES JARDINS: And has it been cut off by  
25 the Fremont and Sacramento Weirs?

1                   WITNESS HANSON: Access for juvenile salmonids  
2 has been reduced substantially by the weirs.

3                   MS. DES JARDINS: Are you aware of  
4 RPA Action 161 requiring that DWR and Reclamation  
5 provide significantly increased acreage of seasonal  
6 floodplain rearing habitat with biologically  
7 appropriate durations and magnitudes from December  
8 through April in the lower Sacramento River Basin?

9                   WITNESS HANSON: I'm aware that that was  
10 included in the Biological Opinion.

11                  MS. DES JARDINS: Do you think that's an  
12 important action?

13                  MR. MIZELL: Objection, it's not been  
14 established that Dr. Hanson has discussed the  
15 appropriateness of the '08-'09 BiOps in his testimony.  
16 If Ms. Des Jardins can point to where that is  
17 discussed, the question might be appropriate. But  
18 right now I believe it's out of scope.

19                  MS. DES JARDINS: Dr. Hanson is discussing  
20 changes that have impacted the ecology of the Delta and  
21 the abundance and survival of salmonids. And I think  
22 it's appropriate to ask him if increase -- if he  
23 believes increasing -- significantly increasing the  
24 acreage of seasonal floodplain rearing habitat is  
25 important.



1           MR. MIZELL: With that clarification, I'll  
2 withdraw my objection. The question, as I heard it,  
3 related to the appropriateness of the '08-'09 BiOps as  
4 it was applied to the Department and the Bureau of  
5 Reclamation. If its more general question is the  
6 appropriateness of floodplain habitat, I'll withdraw my  
7 objection.

8           CO-HEARING OFFICER DODUC: All right. Dr. --  
9 Dr. Hanson -- my turn now to get you mixed up.

10           Dr. Hanson, do you need to have the question  
11 repeated?

12           WITNESS HANSON: Let me answer it, and if I  
13 don't, we'll have it repeated.

14           Floodplain habitat is a growing area of  
15 interest in the Central Valley. There are floodplain  
16 restoration programs that are currently in the planning  
17 stage on the San Joaquin Basin.

18           On the Sacramento Basin, they're looking at  
19 the use of rice fields as seasonal floodplains. And  
20 there is an active program to modify the Fremont Weir  
21 to provide better and more frequent access for  
22 salmonids to the Yolo Bypass.

23           So it is an important element of an overall  
24 restoration program. And it is an important habitat  
25 feature for juvenile salmonid rearing.

1 MS. DES JARDINS: I'd like to go to your  
2 exhibit, Page 7 of your testimony at Line 20.

3 And you discuss Kimmerer's 2008 paper, that  
4 operations of the SWP and CVP export facilities  
5 indirectly affect the survival of juvenile salmon and  
6 steelhead, correct?

7 WITNESS HANSON: Correct.

8 MS. DES JARDINS: And I'd like to bring up  
9 that paper. It's CSPA-357.

10 Is this the paper you are referring to?

11 WITNESS HANSON: This is the paper I referred  
12 to.

13 MS. DES JARDINS: Can we go to Page 19 of the  
14 paper. And do you see, Dr. Hanson, on page right  
15 [sic], where it states that, "Confidence limits on  
16 proportional loss are large, but the uncertainty about  
17 pre-salvage survival means the constraints on the true  
18 value of proportional loss are weak"?

19 WITNESS HANSON: I do.

20 MS. DES JARDINS: Are you aware of this  
21 concern about uncertainty in pre-salvage survival?

22 WITNESS HANSON: Pre-salvage survival,  
23 specifically at the SWP with Clifton Court Forebay, has  
24 been an issue for several decades.

25 MS. DES JARDINS: And uncertainty in that

1 value?

2 WITNESS HANSON: There is -- in my opinion,  
3 there's greater uncertainty at the CVP because there's  
4 been fewer studies. But at the SWP, there have been  
5 studies on pre-salvage loss for both Chinook salmon as  
6 well as steelhead and striped bass and other species.  
7 But uncertainty is part of the factor.

8 MS. DES JARDINS: Can we go down to the  
9 Figure 10, please. Scroll down to the bottom of the  
10 page.

11 So, Dr. Hanson, this was Kimmerer's graph of  
12 percent lost during salvage. And is it not sensitive  
13 to the pre-salvage survival term?

14 WITNESS HANSON: It is sensitive to that term.

15 MS. DES JARDINS: And what -- what value of  
16 pre-screen losses did your calculations assume?

17 WITNESS HANSON: The standard calculation for  
18 salvage losses at the SWP assumes a 75 percent  
19 pre-salvage loss and a 15 percent pre-salvage loss at  
20 the CVP.

21 MS. DES JARDINS: I'd like to bring up Exhibit  
22 DDJ-327, please.

23 Are you familiar with this data?

24 WITNESS HANSON: I am familiar with it, but I  
25 frankly haven't looked at it in probably 15 or 20

1 years.

2 MS. DES JARDINS: I'd like to go to document  
3 Page 3, please. I believe that has the table. Scroll  
4 down. No.

5 Let's try document -- let's go to Page 11.  
6 Sorry. Page -- PDF Page 11, which is document Page 3.  
7 Scroll down.

8 Dr. Hanson, doesn't this show pre-screen  
9 losses of salmonids of up to 97 to 99 percent?

10 WITNESS HANSON: As well as as low as  
11 63 percent.

12 MS. DES JARDINS: But isn't there considerable  
13 variation in these values?

14 WITNESS HANSON: There is.

15 MS. DES JARDINS: So in using a value of  
16 75 percent, where did you obtain that estimate?

17 WITNESS HANSON: Back in I believe it was the  
18 1980s, DWR and Department of Fish and Game, at the  
19 time, were negotiating what was referred to as the  
20 two-pump agreement. And as part of that agreement,  
21 there needed to be some assumptions about pre-screen  
22 loss. And so the water community asked me to  
23 participate and Dan Odenweller to participate and to  
24 see if Dan and I could come to agreement about an  
25 assumed level of pre-screen loss for purposes of that

1 agreement.

2           We looked at the available data, and it was  
3 our judgment that a pre-screen salvage loss of 75  
4 percent was representative for the State Water Project  
5 given what we knew at the time.

6           We had no data for the CVP, but in the absence  
7 of the forebay, we thought it would be substantially  
8 lower, and we agreed on 15 percent as a placeholder.  
9 And it's been used ever since.

10           MS. DES JARDINS: So your estimate doesn't  
11 include any more recent mark-recapture experiment data?

12           WITNESS HANSON: I know there have been  
13 discussions -- I have not been part of them -- that  
14 actually use some of the more recent data. Kevin Clark  
15 and I and others did pre-salvage loss study for  
16 steelhead that was more current than this but showed, I  
17 think, basically 80 percent pre-screen loss.

18           MS. DES JARDINS: Okay right. Thank you. I'd  
19 like to now go back to your testimony, Exhibit  
20 DWR-1223. And I'd like to go to Page 5, please, at  
21 Line 22.

22           And here you refer to the SWRCB workshop on  
23 interior flows and related stressors at Line 22,  
24 correct? And the statement that the population  
25 declines are a result of multiple stressors?

1 WITNESS HANSON: Correct.

2 MS. DES JARDINS: I'd like to pull up  
3 Exhibit SWRCB-56, please, at Page 43. And -- excuse  
4 me.

5 I'm sorry. I apologize. It's Page 45.

6 And down at the bottom. It's PDF -- excuse me  
7 PDF Page 45, which is document Page 43. There we go.  
8 Okay. Yes. Excuse me.

9 And do you see at the last -- can you read the  
10 last paragraph beginning with "Migration routes through  
11 the interior Delta."

12 So, Dr. Hanson --

13 CO-HEARING OFFICER DODUC: I'm sorry. Could  
14 we confirm from Dr. Hanson --

15 WITNESS HANSON: I have read it.

16 CO-HEARING OFFICER DODUC: -- that he's read  
17 it?

18 Okay.

19 MS. DES JARDINS: Yeah. Dr. Hanson, isn't  
20 the -- isn't it true that the migration route through  
21 the -- that the workshop considered that migration  
22 routes through the interior Delta are -- have higher  
23 mortality than other routes?

24 WITNESS HANSON: Two clarifications, please.  
25 One is you said "migration rate" --

1 MS. DES JARDINS: Routes.

2 WITNESS HANSON: -- and I think it's "routes."

3 MS. DES JARDINS: "Routes" through the  
4 interior Delta.

5 WITNESS HANSON: And are you limiting that to  
6 only routes that are associated with the Sacramento  
7 River?

8 MS. DES JARDINS: This specific passage talks  
9 about migration routes through the interior Delta  
10 posing a higher mortality risk to juvenile salmonids,  
11 correct?

12 WITNESS HANSON: Correct.

13 MS. DES JARDINS: And that management actions  
14 that minimize migration through the Delta and decrease  
15 predation pressure and reduce the likelihood of  
16 entrainment should result in higher survival of smolts,  
17 correct?

18 WITNESS HANSON: That's what this paragraph  
19 states, yes.

20 MS. DES JARDINS: So isn't it true here that  
21 there's more mortality associated with routes through  
22 the interior Delta? Isn't that what this passage is  
23 referring to?

24 WITNESS HANSON: Let me condition my response  
25 and say -- let me try and limit this to just the

1 Sacramento River.

2 MS. DES JARDINS: Okay.

3 WITNESS HANSON: And there are two principal  
4 routes that allow salmonids to enter the interior Delta  
5 from the Sacramento. There's the Delta Cross Channel  
6 and Georgiana Slough. There have been studies that  
7 have shown mortality rates in those two routes is  
8 higher than if the fish had remained in the main stem  
9 Sacramento River.

10 To address that, several actions have been  
11 taken. One is the Delta Cross Channel gates are closed  
12 seasonally, in response to D1641 as well as the  
13 Biological Opinions, to limit that as a route for  
14 juvenile migration. So they close it during the late  
15 winter and spring. And that is a complete barrier.

16 At Georgiana Slough, there has not been a  
17 complete barrier primarily because it's a water  
18 conveyance facility for the interior Delta. But it's  
19 also used extensively by recreational boaters. And so  
20 at Georgiana Slough, the tests have focused on  
21 non-physical barriers, primarily a combination of  
22 lights, air bubbles, and sound.

23 And those studies began back in the mid 1990s.  
24 And I was the director of those studies. I did it for  
25 two years for DWR. And then, more recently, DWR has



1 also investigated experimentally the application of  
2 those behavioral barriers at Georgiana Slough.

3           And my understanding is they have been -- an  
4 acoustic barrier has been included as part of the  
5 salmon resiliency strategy. And I think it's an  
6 activity that I understand DWR is planning to pursue in  
7 the future, all to reduce mortality of fish that use  
8 that migration route.

9           MS. DES JARDINS: Yes, but Dr. Hanson, what I  
10 specifically requested that you address was that,  
11 when -- don't project operations affect whether salmon  
12 are drawn into the interior Delta?

13           WITNESS HANSON: The results of hydrodynamic  
14 simulation modeling -- and I'm not a modeler, but I'm  
15 going to just present what I understood to be the  
16 results, and these were presented to the State Board --  
17 is that water projects operations in the South Delta do  
18 not have an effect on hydrodynamic conditions in the  
19 Sacramento River or at the junction between the  
20 Sacramento River and Georgiana Slough. It's a tidally  
21 driven process at that location.

22           WITNESS HUTTON: And I would concur with that  
23 as well. The flow through Georgiana Slough and Delta  
24 Cross Channel is driven mainly by the volume of the  
25 Sacramento River flow.

1 MS. DES JARDINS: Excuse me. But isn't the  
2 Delta Cross Channel part of project operations?

3 WITNESS HANSON: It's part of the CVP  
4 facilities.

5 MS. DES JARDINS: Thank you.

6 I'd like to go to PDF Page 41, document  
7 Page 39.

8 And on the bottom, Dr. Hanson, can you please  
9 read this paragraph. It continues on the following  
10 page.

11 WITNESS HANSON: I've read this.

12 MS. DES JARDINS: Okay. Does this paragraph  
13 discuss the possibility that Chinook salmon smolts  
14 could be confused by reverse flows in OMR?

15 WITNESS HANSON: This paragraph does presume  
16 that as a hypotheses, yes.

17 MS. DES JARDINS: And that the smolts are  
18 likely to receive mixed signals from tidal flux as  
19 water could be moving towards the pumps on both flood  
20 and ebb tides?

21 WITNESS HANSON: The hydrodynamic conditions  
22 in this part of the Delta are very complex, and yes  
23 they could have mixed signals.

24 MS. DES JARDINS: And does it not say that, in  
25 this case, smolts may find themselves virtually trapped

1 within OMR over several tidal cycles and potentially  
2 attracted into CCF because of inappropriate signals  
3 from water chemistry and flow?

4 WITNESS HANSON: That is part of the  
5 hypothesis, yes.

6 MS. DES JARDINS: Are you aware of this  
7 hypothesis?

8 WITNESS HANSON: I am.

9 MS. DES JARDINS: Did you take it into account  
10 in your opinion?

11 WITNESS HANSON: I took it into account. I  
12 don't address it in any large extent, but this is part  
13 of what we refer to as indirect effects.

14 MS. DES JARDINS: Thank you. My next  
15 questions are for Dr. Acuna. And I'd like to go to  
16 DWR-1211, Page 5 at Line 10.

17 Dr. Acuna, here you discuss that -- at Line 13  
18 you discuss that current real-time operations have  
19 focused on avoiding the creation of a turbidity bridge  
20 that could draw Delta smelt into the South Delta  
21 towards existing pumping facilities; is that correct?

22 WITNESS ACUNA: Yes, in this section, I talk  
23 about the turbidity bridge.

24 MS. DES JARDINS: And how long has that been  
25 implemented?

1 WITNESS ACUNA: I'm not entirely certain.

2 MS. DES JARDINS: Do you know what year it  
3 started being implemented?

4 WITNESS ACUNA: No. I believe I already  
5 answered that question.

6 MS. DES JARDINS: Aren't Delta smelt at new  
7 record lows?

8 WITNESS ACUNA: "Record lows," are you -- low  
9 what? Are you talking about the indices, the index?

10 MS. DES JARDINS: Let's pull up  
11 Exhibit SJC-352, please.

12 Doesn't the Kodiak trawl show that Delta smelt  
13 are at new record lows?

14 SJC-352, San Joaquin County, in Group 24.

15 There appear to be two Group 24s. The County  
16 of San Joaquin, that one SJC-352, please. Scroll out,  
17 please.

18 Are you familiar with Kodiak trawl survey data  
19 for Delta smelt?

20 WITNESS ACUNA: I'm not sure if this is  
21 correct because this is from a blog. Do you have the  
22 official index values that you can refer to?

23 MS. DES JARDINS: I do have the values from  
24 the web page from the DFG database.

25 Let's pull up Exhibit DDJ-282.

1           Dr. Acuna, this is the fall midwater trawl  
2 Delta smelt annual abundance indices?

3           WITNESS ACUNA: It looks like it. I mean, you  
4 don't have, like, the website version of this or a  
5 cited --

6           MS. DES JARDINS: Yes, this is the website  
7 version, and it was verified by Randy Baxter on  
8 cross-examination.

9           WITNESS ACUNA: All right. Based on the  
10 indices here, their period of record, the numbers are  
11 low on that indice [sic]. But the indice does not have  
12 any sort of error around it, so it's difficult to tell  
13 whether it is a record low.

14           All you can say is that the estimated index,  
15 without error, that was conducted at those more recent  
16 periods is lower than other. But that's not accounting  
17 for error in the estimate.

18           MS. DES JARDINS: Dr. Acuna, are you aware  
19 that no Delta smelt were captured in the 20 millimeter  
20 survey in April and May of this year?

21           WITNESS ACUNA: I'm not quite aware of that  
22 particular part. There's been a number of other  
23 surveys that have collected Delta smelt, the --

24           MS. DES JARDINS: Was it in those months --

25           (Reporter interruption)

1 MS. DES JARDINS: Was it in those months?

2 WITNESS ACUNA: I can't recall very well, so  
3 unfortunately, I can't verify or confirm your request.

4 MS. DES JARDINS: Do you have any awareness of  
5 the 2018 Kodiak trawl or --

6 WITNESS ACUNA: I have some awareness of it.  
7 I believe it caught a few fish in the 2018 Kodiak  
8 trawl.

9 MS. DES JARDINS: But wasn't it at -- wasn't  
10 it at record lows?

11 WITNESS ACUNA: Once again, those values are  
12 based on an index; that index has no error. The record  
13 is based on taking the discrete value that was  
14 calculated and comparing it between other discrete  
15 values.

16 The error between those values has not been  
17 shown. Therefore, it's difficult to actually show  
18 whether this is an actual record low.

19 MS. DES JARDINS: Dr. Acuna, how do you  
20 evaluate the effectiveness of the turbidity bridge  
21 action if you don't follow the survey data?

22 CO-HEARING OFFICER DODUC: Ms. Sheehan.

23 MS. SHEEHAN: Object, misrepresents his  
24 testimony. He just testified to his knowledge of the  
25 survey data.

1 CO-HEARING OFFICER DODUC: Perhaps we might  
2 focus on the first part of Ms. Des Jardins's question  
3 about the effectiveness of the -- was it -- bridge?

4 MS. DES JARDINS: Yes, the turbidity bridge  
5 action.

6 How do you evaluate the effectiveness of the  
7 turbidity bridge action?

8 WITNESS ACUNA: On the salvage data.

9 MS. DES JARDINS: So you don't actually look  
10 at the -- the survey data to evaluate the  
11 effectiveness?

12 WITNESS ACUNA: The survey data is generally  
13 considered when attempting to create the turbidity  
14 bridge. But also other information is used, such as  
15 tracking -- I believe it's called, like, a turbidity  
16 slug or sediment slug that's coming down the Sacramento  
17 that is also being tracked.

18 And it's discussed at the Delta Condition  
19 Team. I have attended those, and I've heard the  
20 discussions about the turbidity bridge as well as  
21 directing what is known as a preemptive action in  
22 regards to that data --

23 (Reporter interruption)

24 WITNESS ACUNA: -- a preemptive action in  
25 regards to those -- that data.

1 MS. DES JARDINS: Dr. Acuna, isn't one of the  
2 entrainment concerns for Delta smelt also for Delta  
3 smelt eggs?

4 WITNESS ACUNA: I believe in the Biological  
5 Opinion it does reference all life stages as being  
6 considered for entrainment.

7 MS. DES JARDINS: Does the turbidity bridge  
8 address the risk of entrainment of Delta smelt eggs?

9 WITNESS ACUNA: Well, eggs are a particle. So  
10 if I can elaborate. As a particle, much like  
11 turbidity -- turbidity is a measurement of the  
12 sediments or the clarity of the water, which is related  
13 to the amount of particles in that water.

14 If you were to prevent that sediment to go  
15 into the South Delta forming that bridge and into the  
16 water projects, those particles, much like potentially  
17 eggs, would also not be able to do that.

18 It is not known at this time where those eggs  
19 are being spawned specifically as, once again, as I  
20 mentioned yesterday, that has not been recorded in the  
21 wild. It's just been assumed.

22 MS. DES JARDINS: So are you asserting that  
23 Delta smelt eggs are only associated with turbidity?

24 WITNESS ACUNA: No, that is not what I am  
25 asserting. One other thing I'd like to remind



1 everybody is that the eggs are adhesive, so they tend  
2 to stick to substrate, less likely to be mobilized and  
3 move downstream.

4 MS. DES JARDINS: Are you aware of particle  
5 tracking model simulations of entrainment of Delta  
6 smelt eggs in studies by Kimmerer, et al.?

7 WITNESS ACUNA: I don't recall a any study led  
8 by Kimmerer on particle tracking for eggs. I think  
9 you're referring to the Nobriga paper.

10 MS. DES JARDINS: That could be.

11 WITNESS ACUNA: Yes, the assumption is  
12 free-floating egg -- which, as I mentioned before, they  
13 are adhesive. That's less likely to occur.

14 MS. DES JARDINS: So you disagree with the  
15 Nobriga paper and conclusions that -- and concerns that  
16 Delta smelt eggs could be entrained?

17 CO-HEARING OFFICER DODUC: All right,  
18 Ms. Sheehan.

19 MS. SHEEHAN: Could you please bring up the  
20 paper you're referring to? It's unclear, and you  
21 didn't provide a date. If you have that paper, could  
22 you please show what you're referencing?

23 MS. DES JARDINS: Yes. Dr. Acuna, do you  
24 reference any of the research by Nobriga, et al. in any  
25 of your testimony?

1           WITNESS ACUNA: I don't recall doing so.  
2    You're still -- could I get a clarification on which  
3    document you're talking about for Nobriga, sorry,  
4    before I fully answer that?

5           And a quick review of my citations, I don't  
6    have any paper that's Nobriga as a lead author.

7           MS. DES JARDINS: All right. Let me see. And  
8    then I had another question on your opinion on Page 10.  
9    Exhibit DWR-1223, Page 10 at Line 4 to 7.

10          WITNESS ACUNA: Are you referring to my  
11    testimony or someone else's?

12          MS. DES JARDINS: I'm sorry. At 1211,  
13    DWR-1211, Page 10, Line 4 to 7.

14          CO-HEARING OFFICER DODUC: There is no  
15    Line 47.

16          MS. DES JARDINS: 4 to 7.

17          CO-HEARING OFFICER DODUC: Ah, 4 to 7.

18          MS. DES JARDINS: My apologies.

19          At Line 5, you discuss contaminants in the  
20    Delta, Dr. Acuna, and you cite multiple exhibits.

21          Dr. Acuna, what testimony is this section  
22    rebutting?

23          WITNESS ACUNA: This section is in reference  
24    to increasing flows being -- not assuming that water is  
25    just water. And I'm pointing out that water contains

1 many factors within it.

2           There are previous citations, as I mentioned  
3 before, by Rosenfeld suggesting that flow would help  
4 benefit Delta smelt. I'm trying to add context that  
5 flow comes with added issues; it's not just water.

6           MS. DES JARDINS: But there was no specific  
7 testimony by any of the witnesses that you refer to on  
8 contaminants?

9           WITNESS ACUNA: Actually, I believe  
10 contaminants were referred to by Randy Baxter in his  
11 testimony. But he was actually also adding that  
12 context into the discussion. I can't point to that,  
13 unfortunately, because I'm not rebutting his section  
14 there. I actually agree with his section.

15           MS. DES JARDINS: And I'd like to go to your  
16 opinion, Page 12, at 5 to 6, where it states, "Factors  
17 that affect Delta smelt population dynamics have been  
18 studied for decades." What witness's testimony was  
19 this section rebutting?

20           WITNESS ACUNA: This is a conclusion document.  
21 It is not part of the rebuttal. I'm trying to make a  
22 conclusion on my testimony prior to this section.

23           MS. DES JARDINS: But this is not rebutting  
24 any particular testimony?

25           WITNESS ACUNA: The paper --

1 MR. BERLINER: Objection, asked and answered.

2 CO-HEARING OFFICER DODUC: Sustained.

3 MS. DES JARDINS: Okay. I would like to renew  
4 my motion to strike this -- the sentence at 5 to 6.

5 CO-HEARING OFFICER DODUC: Goes to weight.

6 MS. DES JARDINS: Thank you. That concludes  
7 my cross-examination.

8 CO-HEARING OFFICER DODUC: Thank you. Let's  
9 take a short break. We will return at 12:10.

10 (Recess taken at 12:04)

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1 (Proceedings resumed at 12:11 p.m.):

2 CO-HEARING OFFICER DODUC: All right. Please  
3 take your seats.

4 Clifton Court had requested 10 minutes for  
5 cross but I don't see Miss Womack or Mr. Emrick here,  
6 so Miss Meserve, then, will be our last cross-examiner  
7 for this panel.

8 Before we get to Miss Meserve, though, with  
9 Miss Morris and Mr. Herrick here, I'm going to ask the  
10 two of you to come up.

11 And, Miss Morris, have you had a chance to  
12 take a look at the e-mail from Mr. Ruiz?

13 MS. MORRIS: (Nodding head.)

14 CO-HEARING OFFICER DODUC: So, help me  
15 understand again why you believe additional  
16 cross-examination is necessary.

17 MS. MORRIS: Sure.

18 If you could pull up SDWA-323-Revised.

19 So, essentially, what that's going to show is  
20 a map of the cross-sections -- the 2018 cross-sections.  
21 It does not show the DSM-2 node or the DSM-2  
22 cross-sections anywhere on that map.

23 When I asked Mr. Burke during  
24 cross-examination if he could provide me the channel  
25 locations and the DS2 -- DSM-2 nodes, he said that he

1 could not and, therefore, I could not look at the  
2 underlying data from the DSM-2 inputs for that  
3 location.

4 In fact, on that channel, Channel 126, there's  
5 three different bathymetry sections that he could have  
6 used.

7 So what was provided to me -- and if you could  
8 pull up -- Skip that other one.

9 On the information I gave you in the folder  
10 that said "Burke bathymetry."

11 And then if you could pull up the one that  
12 says "cross-section low" that -- CWF Middle River  
13 access.

14 (Exhibit displayed on screen.)

15 MS. MORRIS: Yes. What was provided yesterday  
16 morning was --

17 If you could blow it up.

18 (Exhibit enlarged on screen.)

19 MS. MORRIS: -- was this document by  
20 Mr. Burke. And that -- You can see it shows DSM-2  
21 nodes 105 and 104.

22 Well, that still doesn't tell me which one he  
23 used.

24 So when Mr. Ruiz sent this to me, I asked if  
25 he could please circle, then, which bathymetry section

1 he's using based on that node.

2           And then if you could go back to the folder.

3           And then he provided me with the memo which,  
4 again, doesn't say what information he's using.

5           And if you pull up DWR Exhibit YYYY.

6           (Exhibit displayed on screen.)

7           MS. MORRIS: Right.

8           So, if you could pull those -- the two  
9 cross-sections next to each other.

10           The yell -- The -- You can tell that even  
11 Mr. Burke's map that he provided in the morning with  
12 the nodes -- which still doesn't tell me which  
13 bathymetry information he was using --

14           Sorry. I'll wait till he pulls them the maps  
15 side-by-side.

16           CO-HEARING OFFICER DODUC: Yes, let's, please.

17           (Exhibit displayed on screen.)

18           MS. MORRIS: So you recall in cross when I  
19 asked for the information, Mr. Burke said it was a  
20 simple map.

21           But that's not accurate. It's not a simple  
22 map of a DSM-2 node. The cross-section bathymetry are  
23 not in the exact section.

24           You're going to have to blow up that bottom  
25 one so people can see it.

1 (Exhibit enlarged on screen.)

2 MS. MORRIS: All right. And, then, if you  
3 could scroll down.

4 (Scrolling through document.)

5 MS. MORRIS: If we could just orient ourselves  
6 for a minute.

7 You can see -- Can you go back up a little  
8 bit.

9 (Scrolling through document.)

10 MS. MORRIS: The cross-sections --  
11 Right there.

12 -- are not even in -- The DSM-2 nodes are not  
13 even in the same place as Mr. Burke put on this map.

14 You can see on the bottom, Figure 104, is at  
15 that bend on the river on the bottom sort of centered.

16 And if you go up to Mr. Burke's map, that  
17 DSM-2 nod -- nodule -- node is actually much further  
18 down the river in a separate bin.

19 So I need to cross-examine him on the specific  
20 locations of the DSM-2 bathymetry data he was comparing  
21 in his -- to his 2018 data.

22 And I was not able, nor could I have been  
23 able, to, do that, because the information on  
24 SDWA-23 -- whatever it is -- Revised did not even  
25 include the DSM-2 nodes. And when I asked him on



1 cross, he also could not provide it.

2           And, again, in the alternative, if we can't  
3 bring him back, I would make a Motion to Strike because  
4 the testimony is unreliable given that we cannot see  
5 what he's actually comparing it to.

6           CO-HEARING OFFICER DODUC: Response,  
7 Mr. Herrick.

8           MR. HERRICK: Thank you.

9           John Herrick for South Delta parties.

10           I'm not sure what the confusion is without  
11 going into a description of DSM-2 and the model, which  
12 I believe Mr. Burke did.

13           DSM-2 doesn't have hundreds of cross-sections  
14 in each node. It has one or two cross-sections in each  
15 node. And those cross-sections are identified by the  
16 number that Mr. Burke used, and that number says, you  
17 know, .67, that means it's .67 from the beginning of  
18 the node to the end of the node. So those are  
19 specifically identified.

20           Mr. Burke's new data from the soundings are  
21 actual cross-sections and places.

22           So take Middle River there. When he has -- I  
23 can't -- excuse me -- you know, six or seven  
24 cross-sections there, those are all compared to the one  
25 or two nodes that are -- one or two cross-sections

1 DSM-2 has in the node.

2 DSM-2 just makes up -- Withdraw that.

3 DSM-2 just connects different cross-sections  
4 so it has two that it draws a straight line from that  
5 bottom to that bottom. That's how it appears. It  
6 doesn't have different cross-sections that can be  
7 matched to this.

8 So the cross-section in DSM-2 -- or  
9 cross-sections -- they're being compared to his  
10 soundings cross-sections. That tells you everything  
11 you need to know.

12 I don't want to be flippant about this but  
13 Parviz or Tara, any one of the DS -- anyone in the DWR  
14 monitoring, easily matched these to the DSM-2  
15 cross-sections that DSM-2 thinks this is.

16 CO-HEARING OFFICER DODUC: But you still  
17 oppose Miss Morris' motion --

18 MR. HERRICK: Yes. I think it -- I think --

19 CO-HEARING OFFICER DODUC: -- Motion to Strike  
20 as well as a request to bring Mr. Burke back.

21 MR. HERRICK: Yes, I'm sorry.

22 I don't -- I don't think it would be  
23 productive. Mr. Burke was available to answer any  
24 questions about what DSM-2 had in it, or where his  
25 things were, whether he said this matches that one,

1 because -- I didn't listen to all his testimony.

2 I don't think it's necessarily a gain, but  
3 that's our position.

4 CO-HEARING OFFICER DODUC: Final remarks,  
5 Miss Morris.

6 MS. MORRIS: Yes.

7 In fact -- And, again, this is not testimony.  
8 It's explaining so you can understand the motion, and  
9 no one can cite to it so it's not testimony.

10 DSM-2 bathymetry does not do what Mr. Herrick  
11 says. There's several cross-sections and it fits the  
12 cross-section using software and is drawn by somebody.

13 These are the questions I was trying to ask.  
14 And it's true, when I had the nodes yesterday morning,  
15 I did have DWR technical staff pull up this  
16 information, and now I've narrowed it to one of two  
17 locations that Mr. Burke used. And that's why I would  
18 like to cross-examine him on it.

19 If he had included the nodes that he used,  
20 then I would have been able to cross-examine him. Or  
21 if he would have been able to answer the question in  
22 cross-exam, then I also would have been able to  
23 continue my cross-examination.

24 But it's not correct to say that I could have  
25 cross-examined him based on information that was not

1 provided in his testimony, and he couldn't answer  
2 during cross-exam.

3 CO-HEARING OFFICER DODUC: All right. Thank  
4 you.

5 We will take that under consideration, give  
6 you a ruling after the lunch break.

7 If we find it necessary, Mr. Burke would have  
8 to return tomorrow, so just a heads-up. But we will  
9 consider that in issuing our ruling.

10 Now we will turn to Miss Meserve.

11 MS. MESERVE: Good afternoon. Osha Meserve  
12 for Friends of Stone Lakes and LAND, the parties.

13 I have questions for the three witnesses.

14 Before I go into that, Mr. Keeling had asked  
15 me to clarify one item from his Motion to Strike  
16 yesterday that related to Dr. Hanson. If I might do  
17 that first.

18 He had intended -- If -- Dr. Hanson, which is  
19 DWR-1223-Revised, has, looks like, four bullet points  
20 on Page 3. And those are basically repeated on the  
21 last page of his testimony, on Page 27 before he gets  
22 into the literature cited.

23 And so the only clarification was that that  
24 Motion to Strike would apply to the first and fifth  
25 bullets on Page 27, just the same as he had articulated

1 yesterday the first and fifth bullets on Page 3.

2 (Pause in proceedings.)

3 CO-HEARING OFFICER DODUC: Thank you,  
4 Miss Meserve.

5 MS. MESERVE: Thank you.

6 And the questions generally follow the  
7 testimony with respect to Hudson and focused a little  
8 more on some of the -- how the testimony was developed  
9 and what he cited to in rebuttal.

10 And, then, with respect to Dr. Acuña, with  
11 respect to the operational flexibility that he's  
12 referenced and the locations of Delta Smelt.

13 And, then, with Dr. Hanson . . .

14 CO-HEARING OFFICER DODUC: You already  
15 mentioned Dr. Hanson.

16 (Pause in proceedings.)

17 CO-HEARING OFFICER DODUC: Oh. I'm not sure  
18 we have, but --

19 MS. MESERVE: Maybe it was in error.

20 CO-HEARING OFFICER DODUC: -- the Dr. Hs,  
21 which would be --

22 MS. MESERVE: Seems to be getting us all a  
23 little flubbed (sic).

24 The first person -- I should have had said  
25 Dr. Hutton to begin with.

1 CO-HEARING OFFICER DODUC: Ah.

2 MS. MESERVE: And, then, thirdly, with respect  
3 to Dr. Hanson, I have questions regarding to the  
4 mortality of different diversions and with OMR.

5 CO-HEARING OFFICER DODUC: Okay.  
6 Miss Meserve, does it matter which order in which you  
7 conduct cross of these witnesses?

8 MS. MESERVE: Not particularly. I had  
9 intended to do it in that order but . . .

10 CO-HEARING OFFICER DODUC: Well, the reason  
11 I'm asking is: I don't know if Mr. Mizell is going to  
12 request redirect for all the witnesses or just some.

13 And if there are any to whom he is not going  
14 to be requesting redirect, perhaps their cross could be  
15 conducted first so that they could leave for lunch and  
16 the rest of their lives.

17 (Laughter.)

18 CO-HEARING OFFICER DODUC: Mr. Mizell.

19 MR. MIZELL: Yes.

20 Redirect will depend entirely on  
21 Miss Meserve's questioning. At this point in time, we  
22 have no redirect.

23 CO-HEARING OFFICER DODUC: Oh, okay. Well,  
24 then, Miss Meserve --

25 MS. MESERVE: Okay.

1 CO-HEARING OFFICER DODUC: -- you may ask  
2 questions in whatever order you wish.

3 MS. MESERVE: Thank you.

4 CROSS-EXAMINATION BY

5 MS. MESERVE: So, starting with Dr. Hutton.

6 You're currently a Principal Engineer at Tetra  
7 Tech?

8 WITNESS HUTTON: Yes.

9 MS. MESERVE: And did you begin that  
10 position -- And I'm -- with respect to your Statement  
11 of Qualifications.

12 And that position began in -- Was that January  
13 of 2017?

14 WITNESS HUTTON: Yes.

15 MS. MESERVE: And prior to that, you were a  
16 Principal Engineer at the Metropolitan Water District?

17 WITNESS HUTTON: Yes.

18 MS. MESERVE: And prior to that, from 1990 to  
19 2002, you held various positions at DWR, who are the  
20 Petitioners in this hearing; correct?

21 WITNESS HUTTON: Yes.

22 MS. MESERVE: For the testimony that you  
23 presented here, DWR-1224-Revised, during what time  
24 period did you begin writing this testimony?

25 WITNESS HUTTON: Oh. Oh, this testimony.

1 MS. MESERVE: DWR-1224-Revised.

2 WITNESS HUTTON: Within . . . Within the last  
3 few months, I guess, when the -- The dates escape me,  
4 but whenever -- whenever this -- the rebuttal hearing  
5 was -- was first scheduled -- or I should -- Rather, I  
6 should say whenever the issue of existing conditions  
7 came up, so it's been a -- a few months.

8 MS. MESERVE: When you say that the issue of  
9 existing conditions came up, what do you mean?

10 WITNESS HUTTON: My understanding from the  
11 attorney team was that -- that the -- the issue of  
12 existing conditions came up based on . . . the -- the  
13 testimony of CSPA-202.

14 MS. MESERVE: I'll get to a couple questions  
15 about that in a minute.

16 But when you mentioned the attorney team, who  
17 is that?

18 WITNESS HUTTON: The DWR team that we see  
19 here. Mr. Mizell.

20 MS. MESERVE: Any other attorneys?

21 Mr. Berliner?

22 WITNESS HUTTON: Mr. Berliner, Miss Sheehan,  
23 and Miss Morris.

24 MS. MESERVE: And is that the only attorneys?

25 WITNESS HUTTON: Yes.



1 MS. MESERVE: And when you provided this  
2 testimony to the attorney team for review -- Or did you  
3 provide it to them for review?

4 WITNESS HUTTON: Yes, I did.

5 MS. MESERVE: And did they make changes to  
6 your testimony?

7 WITNESS HUTTON: Of an editorial nature.

8 MS. MESERVE: And the citations you provide  
9 and that you just referenced toward the beginning of  
10 your testimony to which it allegedly rebuts, were those  
11 citations that were provided to you by the attorney  
12 team?

13 WITNESS HUTTON: These were . . .

14 Not the specific page numbers but the . . .  
15 the original -- the -- the . . . the exhibits  
16 themselves were -- were pointed out to me as exhibits  
17 that I should be reviewing in terms of preparing my  
18 testimony.

19 MS. MESERVE: On Page 2 of your testimony,  
20 you -- on Lines 25 through 26 --

21 (Exhibit displayed on screen.)

22 MS. MESERVE: -- you mention that it's  
23 "intended to identify new information." And then you  
24 list several studies that you relied upon on Page 3.

25 (Exhibit displayed on screen.)

1 MS. MESERVE: Just taking those studies as a  
2 group, those were all prepared while you were employed  
3 by the Metropolitan Water District? Or published, I  
4 should say.

5 WITNESS HUTTON: Well . . . So, they were all  
6 being prepared during that time.

7 So, the ones that were actually published in  
8 2017, I had -- I had already retired from Metropolitan  
9 Water District.

10 MS. MESERVE: And, again, just for sake of  
11 brevity, although we can look at them individually if  
12 you'd like:

13 Each one of those publications that's listed  
14 there includes a . . . a Declaration of Interest  
15 referring to your employment with Metropolitan Water  
16 District; does it not?

17 WITNESS HUTTON: I'm not sure I understand the  
18 question.

19 MS. MESERVE: Let's just look at one. It's a  
20 relatively small point.

21 DWR-1270 or -- I'm sorry -- 1285, I think, is  
22 the first one that you list on Page 3.

23 (Exhibit displayed on screen.)

24 MS. MESERVE: And then if you see, your name  
25 has a little Footnote 1 next to it, and then it says

1 "Metropolitan Water District."

2 WITNESS HUTTON: Yes.

3 MS. MESERVE: Is that a required Declaration  
4 of Interest that's required by journals typically?

5 WITNESS HUTTON: Yes.

6 MS. MESERVE: And do you know why that's  
7 required?

8 WITNESS HUTTON: I suspect there are several  
9 reasons, but certainly reviewers will want to know  
10 if -- if there is any conflict of interest when -- when  
11 a -- a scientist or -- is preparing a document for peer  
12 review.

13 MS. MESERVE: What do you mean by "conflict of  
14 interest"?

15 WITNESS HUTTON: If they -- If there would be  
16 any reason that their -- their opinions are being  
17 compromised for one reason or another.

18 MS. MESERVE: Would an author's opinion be  
19 compromised by having employment at a certain agency?

20 WITNESS HUTTON: Mine wasn't.

21 MS. MESERVE: Was writing reports for  
22 publications, such as this one we're looking at,  
23 DWR-1285, part of your job as a Principal Engineer at  
24 Metropolitan?

25 WITNESS HUTTON: Yes, it was.

1 MS. MESERVE: Well, let's move back to your  
2 testimony, if we could, or -- Well, just to clarify  
3 on -- Rather than going through each of the cited new  
4 works on Page 3, is it -- I think you weren't sure when  
5 I first asked, so I'll just ask it again.

6 Each one of these was prepared, at least in  
7 part, while you were employed at Metropolitan and would  
8 include that same disclosure; is that right?

9 WITNESS HUTTON: Yes.

10 MS. MESERVE: Now, going to Page 2 of your  
11 testimony, which is DWR-1224-Revised, and starting at  
12 Lines 10 and going through Line 16.

13 (Exhibit displayed on screen.)

14 MS. MESERVE: You identify testimony that you  
15 respond to.

16 And then . . . Let's see.

17 You also mention -- Oh, I'm sorry.

18 And then you summarize your bullet points on  
19 the following Page 3 in 8 points; correct?

20 That would be on Page 4, rather.

21 (Exhibit displayed on screen.)

22 WITNESS HUTTON: Yes.

23 MS. MESERVE: And then with respect to the  
24 CSPA -- Going back to Page 2 and the indented material,  
25 you cite to CSPA-202, Page 2, and you quote something

1 in that testimony that discusses evaluation of all  
2 conditions -- or conditions for all aspects of CVP and  
3 SWP operation.

4 You see that language?

5 WITNESS HUTTON: Yes.

6 MS. MESERVE: Can you identify for me where in  
7 your testimony that that statement is rebutted?

8 WITNESS HUTTON: This isn't a rebuttal. This  
9 is a -- This is a motivation for why I was providing  
10 testimony with respect to existing conditions.

11 As I've testified here already today, I have  
12 not been involved with the Cal WaterFix, per se, and  
13 none of my testimony refers to Cal WaterFix.

14 But what my testimony does refer to are  
15 existing conditions. And that's what my understanding  
16 of this section is bringing -- is bringing out the  
17 issue of: What's the guideline conditions for all  
18 aspects of SWP and CVP operations?

19 MS. MESERVE: So, then, do you agree with this  
20 statement, then, that all aspects of the operations  
21 should be addressed?

22 MR. MIZELL: Objection: Relevance.

23 Whether or not he agrees with the intent of  
24 the statement by a CSPA witness is -- is irrelevant.  
25 He's responding to the statement.

1 CO-HEARING OFFICER DODUC: Sustained.

2 (Pause in proceedings.)

3 MS. MESERVE: Okay. So, just to be clear:

4 There's nothing in your testimony that rebuts  
5 the statement shown on Lines 10 through 12 of your  
6 testimony on Page 2?

7 CO-HEARING OFFICER DODUC: Let me jump in  
8 here, because it's something I actually learned  
9 recently, because I did not go to law school, that  
10 proper rebuttal testimony does not have to agree or  
11 disagree. It just has to be responsive in some way to  
12 case in chief testimony.

13 It could be providing additional context,  
14 providing additional background, providing a different  
15 aspect to it, but it doesn't necessarily have to  
16 directly oppose or -- well, even support, for that  
17 matter, a particular testimony in case in chief.

18 Now, I'm sure I didn't say that the way a  
19 lawyer would, but did I capture that correctly?

20 MR. DEERINGER: You said it better than I  
21 would have.

22 (Laughter.)

23 MS. MESERVE: I think you may be headed for an  
24 honorgarian (sic) -- honorary J.D. at some point here.

25 CO-HEARING OFFICER DODUC: So I -- I wanted to

1 take an opportunity and share my recently acquired  
2 knowledge.

3 CO-HEARING OFFICER MARCUS: Thank you,  
4 Dr. Doduc.

5 (Pause in proceedings.)

6 MS. MESERVE: Okay. Just looking quickly,  
7 then, to the citation to NRDC-58-Errata.

8 Could you identify in that document what you  
9 are responding to.

10 If we could look at that document.

11 WITNESS HUTTON: Yes. If we can pull that up,  
12 Page 4.

13 (Exhibit displayed on screen.)

14 WITNESS HUTTON: And then . . .

15 I'll refer to Lines 3 through 5.

16 So this is the first place. It says

17 (reading):

18 "Indeed, in a typical year, more  
19 than 50 percent of the freshwater runoff  
20 destined for the Bay during the  
21 ecologically critical winter and spring  
22 months is diverted before it reaches the  
23 Bay."

24 This statement implies that this is  
25 something -- that there was no such water diversion

1 prior to development whereas in my testimony where I  
2 talk about natural flow, there -- there were -- there  
3 were diversions and water use of freshwater runoff  
4 before it reached the Delta. It didn't -- And this  
5 occurred through natural overbanking of the rivers --  
6 of the river --

7 MS. MESERVE: Excuse me.

8 WITNESS HUTTON: -- levees --

9 MS. MESERVE: I don't mean to be rude, but I  
10 think he answered my question already. He identified  
11 the sentence.

12 CO-HEARING OFFICER DODUC: All right. Then  
13 let's move on.

14 MS. MESERVE: On Page 10 -- back on your  
15 testimony, Dr. Hutton -- on Pages -- Lines 5 and 6 of  
16 that page, you mention --

17 (Exhibit displayed on screen.)

18 MS. MESERVE: -- that (reading):

19 ". . . Trends are . . . more nuanced and  
20 best evaluated on a month-by-month  
21 basis."

22 Are you aware of anything you've cited as  
23 rebutting that is stating otherwise; for instance, that  
24 it shouldn't -- that month by month wouldn't be  
25 important?



1           WITNESS HUTTON: Not that it said month by  
2 month wasn't important, but off in -- in several of  
3 the -- the -- In several of the documents that I refer  
4 to, trends are talked about in very broad terms, and  
5 they may talk about spring, fall, and -- or annual.  
6 It's just . . .

7           The point of my sentence here is that -- that  
8 a lot of statements about trends, existing conditions,  
9 are very -- often are very loosely stated.

10           And in -- in my testimony and in the exhibits  
11 that I present, I -- I tried to be very systematic  
12 about that. And I thought that would be very important  
13 information for the Board in their considerations.

14           MS. MESERVE: But, for instance, PCFFA-145  
15 cited just above there, that doesn't say anything about  
16 not looking at month by month, for instance; does it?

17           WITNESS HUTTON: No. To my knowledge, none of  
18 these documents say that a scientist should not look at  
19 a month-by-month analysis.

20           My -- What I'm -- What I'm -- What my  
21 testimony is saying, that often it wasn't done to that  
22 degree.

23           MS. MESERVE: And, so, your opinion that each  
24 month is important, that would go toward -- You think  
25 that is broadly applicable for any kind of analysis of

1 water quality or other conditions generally?

2 WITNESS HUTTON: That was a -- I'm not even  
3 sure where to begin to answer. That sounded like a  
4 very -- If you could be more specific, I think I could  
5 answer the question.

6 MS. MESERVE: Would you think that month by  
7 month would be important also when looking at water  
8 quality or other issues besides the flow issues that  
9 you were discussing here?

10 MR. BERLINER: Objection: Vague; overbroad  
11 with respect what aspect of water quality and what  
12 context, et cetera.

13 MS. MESERVE: I'll move on.

14 CO-HEARING OFFICER DODUC: Um-hmm.

15 MS. MESERVE: And Miss Des Jardins walked over  
16 with you this inflows at Verona citation -- or quote,  
17 rather, at the top of Page 10.

18 But just to clarify: Inflow at Verona would  
19 be a lot different than Delta outflow; wouldn't it?

20 WITNESS HUTTON: Yes.

21 MS. MESERVE: And inflow at Verona wouldn't  
22 include a number of major rivers and other bodies of  
23 water that ultimately may flow out to the Bay; correct?

24 WITNESS HUTTON: Yes.

25 (Pause in proceedings.)

1 MS. MESERVE: I don't have further questions  
2 for Dr. Hutton.

3 I do believe that the reference to the PCFFA  
4 report at the top of Page 10 is in error and not . . .  
5 would not be a basis for any kind of response or  
6 rebuttal.

7 So, I would move to strike that sentence,  
8 beginning with "Testimony in PCFFA" and then ending on  
9 Line 3, "may."

10 CO-HEARING OFFICER DODUC: Help me understand  
11 here, Miss Meserve.

12 Or perhaps, Mr. Hutton, if you could point to  
13 where in PCFFA-145 you obtained that text which you put  
14 in quotes, which I've assumed to be directly from  
15 PCFFA's exhibit and not your characterization of that  
16 exhibit.

17 Is that the objection?

18 MS. MESERVE: I'm trying not to repeat ground  
19 that Miss Des Jardins went -- already went over, and so  
20 I skipped over the questions I had about identifying  
21 the language on Page 6, which was limited to the issue  
22 of -- It's -- It has a statement about reductions in  
23 spring flows with respect to Verona again which, as  
24 we've just gone over, is just one input that would  
25 be -- comprise the overall Delta outflow that the

1 following sentences refer to.

2 WITNESS HUTTON: If I may add: Another aspect  
3 of this sentence, which has -- has not been asked of me  
4 but I will point out, is the term "very significant  
5 reductions."

6 The PCFFA does not actually do a statistical  
7 analysis, so to use a word like "significant," this is  
8 again a broader context of what I was trying to do as  
9 a -- Whereas a lot of the analyses were very broad, I  
10 was trying to be -- I was trying to be very systematic  
11 in my analysis.

12 CO-HEARING OFFICER DODUC: Thank you. That is  
13 helpful.

14 Motion is denied, Miss Meserve.

15 MS. MESERVE: I have a couple of questions for  
16 Dr. Acuña.

17 Would you agree, Dr. Acuña, that there is the  
18 potential for the Delta -- Delta Smelt to occur in the  
19 vicinity of the North Delta diversions, which is  
20 reflected in the Final EIR and the Biological  
21 Assessment as well?

22 WITNESS ACUÑA: Can you give me context as to  
23 what time period you're talking about?

24 MS. MESERVE: To simplify it, let's just say  
25 during at least one month of the year.

1 WITNESS ACUÑA: So you mean, at any time of  
2 the year, would they be present?

3 MS. MESERVE: They could be present, yes.

4 WITNESS ACUÑA: And you're referring to in the  
5 vicinity of the salvage facilities?

6 (Pause in proceedings.)

7 MS. MESERVE: I'm going to actually start with  
8 a different question. I think I went into the wrong  
9 question, so we'll get to that, if you don't mind.  
10 Sorry about that.

11 Looking at your testimony on -- which is  
12 1271-Revised (sic). On Page 5, you refer to -- and  
13 Lines 19 through 21, you mention additional operational  
14 flexibility through the CWF.

15 Oops. Sorry. Do you have that in front of  
16 you?

17 WITNESS ACUÑA: Yes, I do.

18 MS. MESERVE: And by "CWF," do you mean the  
19 California WaterFix in that line on Page 5?

20 WITNESS ACUÑA: Yes.

21 (Exhibit displayed on screen.)

22 MS. MESERVE: And you mention the  
23 "stabilization of water supplies" at the end of that  
24 sentence as well?

25 WITNESS ACUÑA: I'm referring to the previous

1 part of that sentence, not necessarily Cal WaterFix.

2 MS. MESERVE: Do you have any expertise with  
3 respect to water supplies?

4 WITNESS ACUÑA: No.

5 MS. MESERVE: Do you base that statement on  
6 any reference?

7 WITNESS ACUÑA: I base that statement on  
8 references. I have been part of discussions at the  
9 Delta Condition Team, to evaluate stable --  
10 stabilization of water supplies.

11 MR. DEERINGER: Pardon me for interrupting.

12 Can the record reflect that this is  
13 DWR-1211-Revised.

14 CO-HEARING OFFICER DODUC: Mr. Long.

15 MR. DEERINGER: Rather than 1271.

16 CO-HEARING OFFICER DODUC: Okay.

17 MS. MESERVE: Okay.

18 Let's see. And then . . .

19 (Pause in proceedings.)

20 MS. MESERVE: Looking at your -- Let's see.

21 Well, with respect to your -- the statement  
22 regarding operational flexibility, does that refer to  
23 the ability to divert water in the Northern Delta in  
24 addition to the Southern Delta if the Project was built  
25 and operated?

1           WITNESS ACUÑA: I'm referring to flexibility  
2 in management. This has been found to be a more  
3 appropriate way to manage things.

4           As adaptive management, as has been mentioned  
5 before, when managing a project or trying to understand  
6 things, it's best to do things with flexibility. And  
7 I'm mostly referring to that in general.

8           The reference to Cal WaterFix is an example in  
9 that case.

10          MS. MESERVE: When you refer to the CWF in  
11 that sentence, are you referring to the ability to  
12 divert water from that proposed facility?

13          WITNESS ACUÑA: In general, I'm referring to  
14 Cal WaterFix.

15          I believe they have also guidelines in the  
16 South Delta, but I'm not fully versed in how  
17 Cal WaterFix is going to be worked. But I do know  
18 that, at Cal WaterFix, it suggests flexibility in  
19 operations.

20          MS. MESERVE: And, so, are you really  
21 talking -- And you mentioned adaptive management just  
22 now.

23          So, are you talking about if the facility was  
24 built and then the management could be adapted?

25          WITNESS ACUÑA: I am speaking in general, not

1 necessarily the facility.

2           Once again, I use the facility as a -- I mean,  
3 the Cal WaterFix as a -- an example of what has been  
4 suggested as flexible operations.

5           MS. MESERVE: On Page 3, Opinion 3, going back  
6 to your summary --

7           (Exhibit displayed on screen.)

8           MS. MESERVE: -- you state that . . . you  
9 disagree with -- Let's see. Let me get back to that.

10           Your second opinion is that (reading):

11           ". . . Proportional entrainment at the .  
12 . . South Delta . . . facilities is low."

13           Thinking about the statement we just looked at  
14 on Page 5, if entrainment in the South Delta facilities  
15 was really low, wouldn't there be less need for the  
16 operational flexibility that you reference on Page 5  
17 that you allege is associated with the CWF?

18           WITNESS ACUÑA: Well, I think when you first  
19 started talking, you were talking about Opinion 2; is  
20 that correct?

21           MS. MESERVE: Yes.

22           WITNESS ACUÑA: Not Opinion 3?

23           MS. MESERVE: You're correct. I'm sorry.

24           WITNESS ACUÑA: I believe operational  
25 flexibility within the BiOp is already present, such as



1 the Fall X2 RPA has adaptive management detailed within  
2 its RPA.

3 MS. MESERVE: I'm going to ask my question  
4 again --

5 WITNESS ACUÑA: Okay.

6 MS. MESERVE: -- if that's all right, and I --  
7 it's probably my fault for not stating it clearly.

8 Under Opinion 2, you opine that the  
9 proportional entrainment of the existing South Delta  
10 pumps is low.

11 If that was really true, wouldn't there be  
12 less need for the operational flexibility that you  
13 reference on Page 5 being attributable, at least in  
14 part, to CWF?

15 WITNESS ACUÑA: Need for operational  
16 flexibility is useful for all manner of operational  
17 needs.

18 Just picking one factor, I don't think that  
19 would be enough to warrant just that kind of  
20 discussion. I think you need to talk about all the  
21 things that could be helped with flexible operations.

22 MS. MESERVE: And when you say "flexible  
23 operations," do you mean the ability to use new  
24 diversions in a different location?

25 WITNESS ACUÑA: I'm not suggesting what those

1 flexible operations are. What I am really wanting to  
2 get at is that flexible operations are probably more  
3 ideal than more rigid ones.

4           As we are learning more and more information  
5 about Delta Smelt, we've learned a lot more about their  
6 life history, a resident life history in the fresh  
7 water. An action that would help the migratory life  
8 history that goes into low-salinity zone may not  
9 appropriate for the fresh water. So flexibility is  
10 useful in this context.

11           MS. MESERVE: Just taking an example of  
12 flexibility that's been proposed both in the context of  
13 CWF as well as existing conditions.

14           Wouldn't it be in the interest of your  
15 employer to reduce spring outflow, for instance? So  
16 when you say "operational flexibility," you really mean  
17 reduce regulatory requirements?

18           MR. BERLINER: Objection: Relevance.

19           CO-HEARING OFFICER DODUC: Miss Meserve.

20           MS. MESERVE: Going back to the statement on  
21 Page 5 and what we've heard from the witness just now,  
22 he's referencing operational flexibility.

23           And I guess what I'm trying to understand is  
24 what he means by "operational flexibility" and whether  
25 that encompasses becoming more restrictive as well as

1 less restrictive or just one?

2 CO-HEARING OFFICER DODUC: All right.

3 Proceed.

4 WITNESS ACUÑA: I'm not recommending any  
5 particular operation.

6 MS. MESERVE: So, in your view, operational  
7 flexibility could mean increasing regulatory  
8 requirements if warranted; is that correct?

9 Just using the example of spring outflow.

10 WITNESS ACUÑA: Then can you say that again?

11 You -- You -- Sorry. You averted my thought.

12 MS. MESERVE: With respect to the operational  
13 flexibility that you promote, would that include making  
14 changes due to -- that may further restrict operations  
15 if the data shows that it would be necessary, for  
16 instance, with respect to spring outflow?

17 WITNESS ACUÑA: I'm not really recommending  
18 any particular operation. What I'm speaking to is  
19 having flexibility in taking the information.

20 If you're speaking to how would you evaluate  
21 new information, help you to recommend operations, I  
22 would agree with that.

23 You would need to be able to take in new  
24 information, such as the data that I reported in my  
25 testimony, incorporate that into your management

1 decisions, and use that to help inform what is the best  
2 Operational Criteria.

3           And to add flexibility. Because, as -- as I  
4 mentioned before, we're having a lot of new information  
5 has come out, pretty exciting stuff, on life history,  
6 whether, I believe, U.S. Fish and Wildlife Service has  
7 a life cycle model they're still developing, and that  
8 we learned a lot more about how the environment  
9 responds to different factors, including temperature  
10 and flow and habitat complex -- complexity.

11           MS. MESERVE: In your current position -- and  
12 I think you mentioned that you . . . you work as a  
13 member of several Technical Teams -- have you ever  
14 advocated for reduced pumping in order to protect Delta  
15 Smelt, for instance?

16           WITNESS ACUÑA: No.

17           Well, what I've actually advocated is for a  
18 wide array of potential actions you could evaluate.

19           For example, at the structure decision-making,  
20 I recommended a variety of X2 locations for modeling  
21 and expressed the -- those opinions by NGOs that  
22 weren't present.

23           I know that they would have advocated for  
24 those X2, so I made sure that those were included to  
25 make sure that we're inclusive in our analysis of the

1 structure decision-making.

2 MS. MESERVE: Earlier, you mentioned adaptive  
3 management.

4 And in terms of the structure decision-making  
5 applicable to CWF, are you aware of any NGO  
6 participation planned for -- for that process?

7 WITNESS ACUÑA: I'm not fully aware on  
8 Cal WaterFix particulars.

9 MS. MESERVE: Thank you.

10 I'll move on to Dr. Hanson.

11 So that's DWR-1223-Revised.

12 (Exhibit displayed on screen.)

13 MS. MESERVE: And I would like to go to  
14 Page 7, please.

15 (Exhibit displayed on screen.)

16 MS. MESERVE: And in that -- If we look on  
17 Line 11, you're mentioning migration and, in  
18 particular, you refer to entrainment and unscreened  
19 agricultural, municipal and industrial water  
20 diversions.

21 Do you see that?

22 WITNESS HANSON: I do.

23 MS. MESERVE: And why do you believe that  
24 unscreened diversions are a problem?

25 WITNESS HANSON: Juvenile Salmonids, when

1 they're migrating down the river, are drawn by higher  
2 velocities through unscreened diversions, a process  
3 referred to as entrainment, and they're lost from the  
4 system.

5 MS. MESERVE: And, Dr. Hanson, isn't the  
6 intake at the Clifton Court Forebay the largest  
7 diversion in the South and Central Delta?

8 WITNESS HANSON: I believe it is.

9 MS. MESERVE: And is the intake at Clifton  
10 Court Forebay screened?

11 WITNESS HANSON: The radial gates that enter  
12 Clifton Court Forebay are not screened.

13 Downstream of those gates and behind Clifton  
14 Court Forebay are the louver systems that are providing  
15 a behavioral guidance system that guides Salmon into  
16 holding tanks where they can then be transported back  
17 to the Delta and released.

18 MS. MESERVE: Dr. Hanson, do you think that  
19 mortality of resident and migrating fish could be  
20 greatly reduced by screening the inlet to Clifton Court  
21 Forebay?

22 WITNESS HANSON: It would depend a lot on a  
23 couple of factors.

24 One is: The effectiveness of intake screening  
25 is, to a large extent, a function of approach velocity.

1 And approach velocity is a function of the volume of  
2 water,  $Q$ , passing through the square foot cross-section  
3 of the opening.

4           So, in order to get a low approach velocity at  
5 Clifton Court Forebay, you'd have to have a humongous  
6 screen. And because it's located in a tidally  
7 influenced area, you don't have a consistent sweeping  
8 velocity that moves fish down away from that location.

9           It's been talked about for decades. And there  
10 are huge challenges from an engineering and from a  
11 biological perspective of functionally screening  
12 Clifton Court Forebay.

13           Now, one of the things that was talked about  
14 earlier is that, if you were able to have alternative  
15 locations of diversion, the flexible operation that  
16 Shawn described, then maybe you could reduce the volume  
17 of water passing through the South Delta, and at that  
18 point in time, then, consideration of alternatives  
19 might come up.

20           But those are all in the future and they're  
21 all speculative in terms of how that might work.

22           MS. MESERVE: Isn't it true that the 2009  
23 Biological Opinion required work toward screening the  
24 Clifton Court Forebay?

25           WITNESS HANSON: There is an RPA in the

1 Biological Opinion from NMFS that requires  
2 consideration and evaluation of engineering  
3 alternatives to reduce fish losses.

4           It wasn't restricted to Clifton Court Forebay.  
5 The Georgiana Slough Acoustic Barrier Study is part of  
6 that. And DWR has completed several reports looking at  
7 alternatives at different locations.

8           MS. MESERVE: And how many years has it been  
9 since that?

10          WITNESS HANSON: The Georgiana Slough test?

11          MS. MESERVE: The 2009.

12          WITNESS HANSON: How many years since 2009?

13 Nine years.

14          MS. MESERVE: And, earlier, you said -- I  
15 think you said that consideration of improvements at  
16 Clifton Court would be something to consider in the  
17 future.

18          Why wouldn't that be worthy of consideration  
19 now?

20          WITNESS HANSON: It is being considered now.

21          MS. MESERVE: Can you tell me how it's being  
22 considered now?

23          WITNESS HANSON: Sure. There's several  
24 things.

25          One is, DWR has pretty much a continuous



1 program of maintenance and looking at engineering  
2 fixes, improvements and modifications to the fish  
3 salvage facilities.

4 MS. MESERVE: But that -- Excuse me.

5 In terms of the screening of Clifton Court  
6 Forebay, or something similar to that, is that actively  
7 under consideration now?

8 WITNESS HANSON: I don't know whether  
9 screening is under active consideration. I know  
10 predation control is.

11 MS. MESERVE: And is there any reason that  
12 that couldn't be undertaken now?

13 You had referenced that it should be after the  
14 North Delta diversions were constructed. Why -- Why  
15 would that be?

16 WITNESS HANSON: There has been consideration  
17 and engineering studies already of whether Clifton  
18 Court Forebay in its current configuration can be  
19 effectively screened.

20 And it was determined through those studies  
21 that it really was a -- an engineering challenge and  
22 may not be feasible.

23 My comment about in the future is that if  
24 changes are made in the way the South Delta exports are  
25 operated, to make it a different engineering challenge,

1 then maybe a screen could be possible.

2 I'm just not taking it off the table because I  
3 don't know.

4 MS. MESERVE: And would one of those studies  
5 on the engineering for Clifton Court Forebay -- Or  
6 would that be the 2009 Conceptual Engineering Report  
7 study? Are you familiar with that?

8 WITNESS HANSON: I'm generally familiar with  
9 that. That's one in a series of reports that DWR has  
10 prepared. The Tracy Fish Facility has also prepared  
11 reports.

12 MS. MESERVE: And is it your opinion that none  
13 of those are worthy of implementation now under the  
14 current con -- current pumping regime?

15 WITNESS HANSON: No. Some of the  
16 recommendations have already been implemented and some  
17 are in the planning stages.

18 So it just depends on the specifics of the  
19 engineering element, the modifications, their  
20 feasibility, and how effective we think they would be  
21 biologically.

22 MS. MESERVE: Going back to your statement  
23 about unscreened diversions.

24 When you put that in your testimony, were you  
25 also referring to agricultural diversions in the Delta?

1 WITNESS HANSON: I was.

2 You know, the estimate is that there are about  
3 3,000 individual diversions from the Delta and the  
4 tributaries. Many of those are agricultural irrigation  
5 diversions. They're relatively small, and they don't,  
6 for the most part, have positive barrier fish screens.

7 But many of the studies that have been done  
8 have shown that the numbers of Salmonids that are  
9 entrained at those diversions is relatively low.

10 And so --

11 MS. MESERVE: Excuse me. I --

12 WITNESS HANSON: Oh.

13 MS. MESERVE: I think -- I want to ask --

14 WITNESS HANSON: Okay.

15 MS. MESERVE: -- a question about that.

16 So, could we have FSL-61, please, which is on  
17 the thumb drive.

18 And this may be what you're referring to, just  
19 to clarify things.

20 Are you familiar -- Let's see. It's going to  
21 be in DWR. Look for date modified. I'm sorry.

22 (Exhibit displayed on screen.)

23 MS. MESERVE: Yes.

24 Are you familiar with this ERP Report from  
25 2014? Just, have you seen that before?

1 WITNESS HANSON: I'm familiar with it. I  
2 haven't read it in quite awhile.

3 MS. MESERVE: Yeah. If we could go to Page 56  
4 and 57 of that document. And maybe -- It's kind of on  
5 both pages.

6 (Exhibit displayed on screen.)

7 MS. MESERVE: It's going to be the actual page  
8 numbers.

9 (Scrolling through document.)

10 MS. MESERVE: And this paragraph in here  
11 refers to the diversions that you just mentioned,  
12 Dr. Hanson.

13 (Pause in proceedings.)

14 MS. MESERVE: It's . . . Let's see.

15 It may be up a page. I may have gotten my  
16 page wrong. I'm sorry.

17 (Scrolling through document.)

18 MS. MESERVE: Go up a little bit.

19 (Scrolling through document.)

20 MS. MESERVE: Let me . . .

21 (Pause in proceedings.)

22 MS. MESERVE: It's at the bottom of my  
23 Page 57.

24 (Scrolling through document.)

25 MS. MESERVE: Oh, there you go.

1           If you can scroll up a little bit, then we can  
2 see the whole paragraph --

3           (Exhibit displayed on screen.)

4           MS. MESERVE: -- on to the -- I'm sorry. Down  
5 to include 58 as well.

6           (Scrolling through document.)

7           MS. MESERVE: A little more.

8           (Scrolling through document.)

9           MS. MESERVE: There you go.

10          So this -- this ERP Report from 2014 -- If  
11 you'd maybe take a look at that paragraph.

12          (Pause in proceedings.)

13          WITNESS ACUÑA: Thank you. I'm familiar with  
14 this.

15          MS. MESERVE: And, then, do you agree that the  
16 report indicates that only intakes of 250 cfs or  
17 greater would be prioritized for the screening program  
18 that it mentions there in the end of the paragraph?

19          WITNESS ACUÑA: The Anadromous Fish Screening  
20 Program, part of the CVPIA, was charged with installing  
21 positive barrier fish screens. And there were so many  
22 of them, that they needed to establish a structure for  
23 how to prioritize.

24          And what they did was, they said, let's start  
25 with the biggest ones first, and let's start with the

1 biggest ones that are in the areas where Juvenile  
2 Salmonids and other sensitive fish either rear or  
3 migrate.

4           And they have been following that paradigm,  
5 and the 250 cfs was one of the criteria that they had  
6 selected.

7           MS. MESERVE: And looking at the upper part of  
8 that paragraph, isn't it true that the Nobriga 2004  
9 report is cited to include -- conclude that the effect  
10 on fish mortality of these types of diversions was  
11 unclear.

12           WITNESS HANSON: It was unclear. And, in many  
13 cases, very few Salmonids were actually collected in  
14 that study, that Nobriga study.

15           And so it raised the question of cost benefit.  
16 And that was part of the framework for deciding how to  
17 prioritize screens.

18           You wanted to get the biggest bang for your  
19 buck. And so you looked at the ones that had the  
20 greatest risk of fish for the best cost.

21           MS. MESERVE: And both of the State and  
22 Federal Water Project diversions are larger than 250  
23 cfs; aren't they?

24           WITNESS HANSON: They are both larger.

25           MS. MESERVE: If we could go back to your

1 testimony, please, Dr. Hanson, and I think I have six  
2 related lawyer questions.

3           So I may need five minutes if that would be  
4 all right.

5           CO-HEARING OFFICER DODUC: Yes. We'll go  
6 ahead --

7           MS. MESERVE: Thank you.

8           CO-HEARING OFFICER DODUC: -- and give you  
9 that time to finish up, Miss Meserve.

10           MS. MESERVE: So, I want to refer to your  
11 testimony on Page 9 --

12           (Exhibit displayed on screen.)

13           MS. MESERVE: -- and Figure 2.

14           WITNESS HANSON: Yes.

15           MS. MESERVE: And your analysis of factors  
16 affecting the percentage of salvage at the existing  
17 export pumps is what we're showing here, I think.

18           Is that correct?

19           WITNESS HANSON: That is correct.

20           MS. MESERVE: And then if we could go to  
21 Page 18, Line 4, of your testimony now, please.

22           (Exhibit displayed on screen.)

23           MS. MESERVE: And I'm focusing on the  
24 paragraph that be -- or the bullet with the OMR reverse  
25 flows.

1 WITNESS HANSON: Okay. I've read that.

2 MS. MESERVE: And then the last sentence  
3 refers to the relationship between OMR reverse flows.

4 And you mentioned that they could be tested?

5 WITNESS HANSON: They can be tested now that  
6 we have the acoustic tag technology.

7 MS. MESERVE: And this was a -- You mentioned  
8 on -- back on Page 16 that this was a conclusion from  
9 the Collaborative Adaptive Management Team as well,  
10 that they could be tested?

11 WITNESS HANSON: It was a conclusion and a  
12 recommendation from the Salmon Scoping Team, which is a  
13 subset of the CAMT.

14 MS. MESERVE: And why didn't you test and  
15 present the relationships between OMR, reverse flows,  
16 and migration route and migration rate in survival in  
17 your testimony?

18 WITNESS HANSON: For a couple of reasons.

19 One, I was the Co-Chair of the Salmon Scoping  
20 Team that prepared that report, and so I was familiar  
21 with the recommendations. We had prepared a proposal  
22 that we submitted for funding to do exactly this set of  
23 tests.

24 But to even take it a step farther, because we  
25 were going to overlay the acoustic-tagged data with the



1 three-dimensional hydrodynamic simulation models so  
2 that we could actually look at how the flow vectors and  
3 the flow directions were changing relative to the  
4 migration rate and route for the Salmon.

5 We submitted that proposal as a collaborative  
6 to be funded through the CVPIA, and the funding was  
7 denied.

8 And I have -- We proceeded but we haven't been  
9 funded yet for that. We'll be resubmitting again.

10 MS. MESERVE: And, so, no other entities that  
11 benefit from the export of water from the South Delta  
12 have offered to fund that study?

13 WITNESS HANSON: They have not.

14 MS. MESERVE: And would such a study provide a  
15 better correlation between salvage and OMR, in your  
16 opinion?

17 WITNESS HANSON: It would provide better  
18 information on how these Juvenile Salmonids, when  
19 they're migrating through that area, respond to  
20 different levels of OMR, how that changes their  
21 migration rate or route selection, how it changes their  
22 risk in vulnerability to salvage.

23 So I think it would be a beneficial kind of a  
24 study to do.

25 Part of the problem is that, when you do an

1 acoustic tag study, the data that you collect depends a  
2 lot on how you deploy your detectors. And the detector  
3 array in this area hasn't been particularly rich.

4 And so it's a question of whether or not the  
5 existing data would be robust and adequate to do the  
6 tests, or whether or not there would need to be a  
7 recom -- recommendation for a new study specifically  
8 focused on this issue that would deploy detectors and  
9 array better able to actually monitor and manage this.

10 And we're having that discussion in a pretty  
11 open forum.

12 MS. MESERVE: But you have no idea when this  
13 would be funded.

14 WITNESS HANSON: I personally don't.

15 MS. MESERVE: I don't have any further  
16 questions for -- for this panel.

17 I would like to clarify one point from my  
18 Motion to Strike the reference to the PCFFA site and  
19 sentence from Dr. Hutton's testimony, is that I would  
20 suggest that the citation to --

21 CO-HEARING OFFICER DODUC: I'm sorry. Let's  
22 wait, Miss Meserve, until we get there.

23 MS. MESERVE: Oh, I'm sorry.

24 (Exhibit displayed on screen.)

25 MS. MESERVE: I was just -- The PCFFA site

1 also is mentioned on Page 2 of his testimony.

2 So if the Hearing Officers were to strike the  
3 reference on Page 10, it should also be stricken from  
4 Page 2.

5 (Exhibit displayed on screen.)

6 CO-HEARING OFFICER DODUC: I thought I ruled  
7 against that motion.

8 I'm pretty sure I did, Miss Meserve.

9 MS. MESERVE: I think you did, too.

10 CO-HEARING OFFICER DODUC: But we'll note for  
11 the record your motion included the citation on Page 2  
12 as well.

13 MS. MESERVE: Thank you.

14 CO-HEARING OFFICER DODUC: And it is also  
15 denied.

16 All right. Thank you all.

17 Mr. Mizell, are you still saying no redirect,  
18 or have you changed your mind?

19 MR. MIZELL: The Department would request 27  
20 hours of redirect.

21 (Laughter.)

22 MR. MIZELL: No.

23 Yes, we -- we are keeping with our original  
24 request of zero redirect questions.

25 CO-HEARING OFFICER DODUC: Actually, I'm going

1 to give you and demand that you do 27 hours of  
2 redirect.

3 (Laughter.)

4 CO-HEARING OFFICER DODUC: And then open it up  
5 for recross, which I'm sure will take at least three  
6 times that.

7 Are you sure?

8 MR. MIZELL: Lesson learned never to try and  
9 attempt lawyer's humor.

10 CO-HEARING OFFICER DODUC: Was that 27 lawyer  
11 hours or --

12 (Laughter.)

13 CO-HEARING OFFICER DODUC: All right. At this  
14 time, I believe that concludes Petitioners' rebuttal  
15 case.

16 Do you wish to move your exhibits into the  
17 record?

18 MR. MIZELL: Yes. I would like to request  
19 that Exhibits: DWR-1200 through 1210, 1211-Revised,  
20 1212-Revised Second, 1213, 1215, 1217 through 1222,  
21 1223-Revised, 1224-Revised, 1225, 1227 through 1321,  
22 1322-Errata, 1323, 1324a, 1324b, 1325 through 1344,  
23 1345a, 1345b, 1345c, 1345d, 1346 through 1386, 1387a,  
24 1387b, 1388, 1389, 1390; State Water Resources Control  
25 Board 102, State Water Resource Control Board 105

1 through 113; DWR-1400 through 1405.

2 And, then, on behalf of the Department of  
3 Interior Bureau of Reclamation, DOI-42, 43, 43a, b, c,  
4 d, e and f and DOI-44 be entered into evidence.

5 (DWR counsel confer.)

6 MS. MESERVE: The only question I had --

7 CO-HEARING OFFICER DODUC: Hold on. They are  
8 conferring. I didn't know if there was something else  
9 they need to add.

10 MS. MESERVE: While they think about it, I  
11 don't think you ruled on Mr. Kill yen's --

12 CO-HEARING OFFICER DODUC: I'm getting to  
13 that, Miss Meserve.

14 MS. MESERVE: Okay.

15 (Pause in proceedings.)

16 CO-HEARING OFFICER DODUC: Was that all,  
17 Mr. Mizell?

18 MR. MIZELL: I believe I have an NRDC cross  
19 exhibit I'd like to enter as well. I just have not  
20 denoted that on my --

21 CO-HEARING OFFICER DODUC: I'm sorry. You  
22 want to enter an NRDC cross exhibit?

23 MR. MIZELL: Into the evidentiary record,  
24 that's correct.

25 I'm not sure that Mr. Obegi entered it, so I

1 would do that to be safe that it makes it into the  
2 record. I just don't have that particular citation  
3 handy at the moment.

4 MR. DEERINGER: Just to be clear: This was a  
5 Part 2 Rebuttal cross exhibit?

6 MR. MIZELL: That's correct.

7 MR. DEERINGER: Okay.

8 CO-HEARING OFFICER DODUC: And how should we  
9 reference it in your motion and in the record?

10 MR. MIZELL: It would be NRDC and then the  
11 exhibit number when I can pull it up.

12 CO-HEARING OFFICER DODUC: Okay. Are you  
13 pulling it up now?

14 MR. MIZELL: I am.

15 CO-HEARING OFFICER DODUC: Okay.

16 (Pause in proceedings.)

17 CO-HEARING OFFICER DODUC: Mr. Mizell, I think  
18 we have a solution for you.

19 I'm told that you are allowed to move another  
20 party's cross exhibit when we ask you to move your  
21 cross exhibit into the record.

22 MR. MIZELL: Okay. Well, then, to be clear,  
23 for the list that I -- that I previously read, DWR-1400  
24 through 1405 are -- are cross-examination exhibits.

25 CO-HEARING OFFICER DODUC: All right. So --

1 MR. MIZELL: I will enter those at a different  
2 time when you request it.

3 CO-HEARING OFFICER DODUC: All right. So any  
4 objections to the rest of the exhibits?

5 Not seeing any, those exhibits are in the  
6 record.

7 (Petitioner Department of Water Resources' Exhibits  
8 1200 through 1210, 1211-Revised, 1212-Revised Second,  
9 1213, 1215, 1217 through 1222, 1223-Revised,  
10 1224-Revised, 1225, 1227 through 1321, 1322-Errata,  
11 1323, 1324a, 1324b, 1325 through 1344, 1345a, 1345b,  
12 1345d, 1345d, 1346 through 1386, 1387a, 1387b, 1388,  
13 1389 & 1390 received in evidence)

14 (State Water Resources Control Board's Exhibits 102,  
15 105, 106, 107, 108, 109, 110, 111, 112 & 113 received  
16 in evidence)

17 (Petitioner Department of the Interior Bureau of  
18 Reclamation's Exhibits DOI-42, 43, 43a, 43b, 43c, 43d,  
19 43e and 43f and 44 received in evidence)

20 CO-HEARING OFFICER DODUC: And speaking of  
21 cross exhibits, at this time, we have completed the  
22 rebuttal phase of Part 2.

23 Parties may have until 5 p.m. -- I'm sorry,  
24 that's not true. I still have a ruling to issue.

25 Okay. I'm sorry, Miss Morris.

1           Well, let me do this: The parties will  
2 have -- It's not concluded yet, but parties will have  
3 until 5 p.m. on Monday to submit your cross-examination  
4 exhibits, and Mr. Mizell and everyone else, that may  
5 include exhibits used by a different party in  
6 conducting their cross-examination.

7           If there are any objections to those  
8 cross-examination exhibits, you may have until  
9 Wednesday, 5 p.m., to file those objections.

10           And I have -- Oh. Mr. Herrick.

11           MR. HERRICK: Many of us will be working  
12 Monday, but Monday is Labor Day or something? Do you  
13 want to make it different than that?

14           CO-HEARING OFFICER DODUC: Oh. It's a  
15 holiday. Okay.

16           MR. HERRICK: Not for everybody.

17           CO-HEARING OFFICER DODUC: All right. Change  
18 that to 5 p.m. Tuesday for submission of your cross  
19 exhibits, and 5 p.m. Thursday for any objections to  
20 those exhibits.

21           We're going to take a break so that we can  
22 discuss both Mr. Keeling's outstanding motion as well  
23 as Miss Morris' outstanding request/motion.

24           And we need food and I think you do as well.  
25 So why don't we plan on returning at . . . 1:45.



1           And I would ask that, obviously, Miss Morris  
2 and Mr. Herrick be here in case there are any followup  
3 questions, but I think the rest of you may leave if you  
4 so wish.

5           And in that case, again, thank you, the four  
6 doctors, for your assistance.

7           And we are taking a break until 1:45.

8                   (Lunch recess at 1:20 p.m.)

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1 Thursday, August 30, 2018 2:00 p.m.

2 PROCEEDINGS

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4 (Proceedings resumed at 2:00 p.m.):

5 CO-HEARING OFFICER DODUC: All right. It is  
6 2 o'clock. We are resuming for what I hope will be a  
7 very, very short period of time.

8 We have two outstanding motion that we need to  
9 address.

10 First of all is Mr. Keeling's Motion to Strike  
11 the citations at the bottom of Page 2 and also some  
12 bullet points on Page 3 and Page 27. Those -- That  
13 motion is denied.

14 We find that Dr. Hanson was able to articulate  
15 a sufficient connection between the cites and his  
16 opinion testimony and, therefore, we are allowing that  
17 to remain.

18 The second motion is with respect to --  
19 request is with respect Ms. Morris' cross-examination  
20 of Mr. Burke. That request is granted.

21 We are directing Mr. Burke to appear tomorrow  
22 when Miss Morris might complete her testimony -- her  
23 cross-examination.

24 Reminder that we will begin at 10 o'clock  
25 tomorrow. We will begin by hearing from the parties,

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1 their requests with respect to surrebuttal.

2           They are expected to articulate their request  
3 by identifying: The specific topics and issues they  
4 would like to address; the specific testimony in  
5 rebuttal that they are proposing to respond to.

6           And it would be extremely helpful if they're  
7 also able to articulate the rationale and importance in  
8 addressing that issue in surrebuttal, in particular  
9 focusing on the key issues for Part 2 as well as the  
10 other purpose, or the other scope the other party --  
11 the scope for Part 2, which is the Supplemental  
12 Administrative Draft EIR/EIS Supplemental.

13           So, with that, are there any other questions?

14           MS. MESERVE: Quick question that relates to  
15 the surrebuttal requests for tomorrow.

16           Does anyone know when the transcripts from  
17 Part 2 rebuttal would be available?

18           CO-HEARING OFFICER DODUC: Not at this time.  
19 We will find out and give you an estimate tomorrow.

20           All right. Anything, Mr. Berliner?

21           MR. BERLINER: If you do allow surrebuttal,  
22 when would it occur?

23           CO-HEARING OFFICER DODUC: We will let you  
24 know that as well. We will let you know that as well.

25           MR. BERLINER: Okay. Thank you.

1 CO-HEARING OFFICER DODUC: All right. Thank  
2 you all. We'll see you 10 o'clock tomorrow.

3 (Proceedings adjourned at 2:03 p.m.)

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1 State of California )  
 )  
2 County of Sacramento )

3 I, Candace L. Yount, Certified Shorthand Reporter  
4 for the State of California, County of Sacramento, do  
5 hereby certify:

6 That I was present at the time of the above  
7 proceedings;

8 That I took down in machine shorthand notes all  
9 proceedings had and testimony given;

10 That I thereafter transcribed said shorthand notes  
11 with the aid of a computer;

12 That the above and foregoing is a full, true, and  
13 correct transcription of Pages 87 - 142, and a full,  
14 true and correct transcript of all proceedings had and  
15 testimony taken;

16 That I am not a party to the action or related to  
17 a party or counsel;

18 That I have no financial or other interest in the  
19 outcome of the action.

20

21 Dated: September 7, 2018

22

23

24 Candace L. Yount, CSR No. 2737

25

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 1  
 6 through 86) 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 7th day of September, 2018.

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DEBORAH FUQUA  
 CSR NO. 12948