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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
BYRON SHER AUDITORIUM
1001 I STREET
SECOND FLOOR
SACRAMENTO CALIFORNIA

PART 2

Wednesday, February 28, 2018

9:30 A.M.

VOLUME 7

Pages 1 - 255

Reported By: Deborah Fuqua, CSR No. 1248

Computerized Transcription by ProCAT

1 APPEARANCES:
2 CALIFORNIA WATER RESOURCES BOARD
3 Division of Water Rights
4 Board Members Present
5 Tam Doduc, Co-Hearing Officer:
6 Felicia Marcus, Chair and Co-Hearing Officer:
7 Dorene D'Adamo, Board Member
8 Staff Present
9 Andrew Deeringer, Staff Attorney
10 Conny Mitterhofer, Senior Water Resources Control Engr.
11 Jean McCue, Staff
12 For California Department of Water Resources
13 Tripp Mizell, Senior Attorney
14 Duane Morris, LLP
15 By: Thomas Martin Berliner, Attorney at Law
16 By: Jolie-Anne Ansley, Attorney at Law
17 U.S. Department of the Interior, Bureau of Reclamation,
18 and Fish and Wildlife Service
19 Amy Aufdemberge, Assistant Regional Solicitor
20 State Water Contractors
21 Stefanie Morris
22 Adam Kear
23 Becky Sheehan
24 Cities of Folsom and Roseville, San Juan Water
25 District, and Sacramento Suburban Water District
Ryan Bezerra
(Continued)

1	APPEARANCES (continued)
2	Pacific Coast Federation of Fishermen's Associations and Institute for Fisheries Resources
3	Tom Stokely
4	
5	Local Agencies of the North Delta Osha Meserve
6	
7	California Sportfishing Protection Alliance, California Water Impact Network, AquAlliance Michael Jackson
8	Chris Shutes
9	Tehama-Colusa Canal Authority & water service contractors in its area
10	Meredith Nikkel
11	County of San Joaquin, San Joaquin County Flood Control and Water Conservation District and Mokelumne River Water and Power Authority Thomas H. Keeling
12	
13	San Luis and Delta-Mendota Water Authority
14	Daniel O'Hanlon
15	
16	Deirdre Des Jardins Deirdre Des Jardins
17	
18	Grassland Water District Ellie Wehr
19	
20	Natural Resources Defense Council Doug Obegi
21	Clifton Court Forebay Suzanne Womack
22	
23	---
24	
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I N D E X

PAGE

Opening Remarks 1
by Co-Hearing Officer Doduc

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WITNESSES CALLED BY PETITIONER

PANEL 2: HARRY OHLENDORF, MIKE BRYAN,
ELLEN PREECE, AARON MILLER,
MARIN GREENWOOD, RICK WILDER,
ERIK REYES, TARA SMITH,
EN CHING HSU, MARIANNE GUERIN
NANCY PARKER, KRISTIN WHITE

CROSS-EXAMINATION BY: PAGE

Mr. Shutes 9
Mr. Jackson 36
Mr. Obeji 101

---o0o---

1 Wednesday, February 22, 2019 9:30 a.m.

2 PROCEEDINGS

3 ---000---

4 CO-HEARING OFFICER DODUC: Good morning,
5 everyone. It is 9:30. Welcome back to the California
6 WaterFix Water Right Change Petition Hearing.

7 I am still Tam Doduc. To my right, Board
8 Chair and Co-Hearing Officer Felicia Marcus. To the
9 Chair's right, Board Member DeeDee D'Adamo. To my left
10 are Andrew Deeringer, Conny Mittenhofer, and
11 Jean McCue. We are being assisted today by -- not in
12 order; they're switching name tags on me -- Mr. Hunt,
13 Ms. Perry, and Mr. Baker.

14 Usual announcements, since I do see what looks
15 to be new faces: Please take a moment and identify the
16 exits closest to you. In the event of an emergency, an
17 alarm will sound. Please vacate this room, taking the
18 stairs down to the first floor and meet up in the park
19 across the street.

20 If you're not able to use the stairs, please
21 flag one of many orange -- fluorescent
22 orange-colored-wearing people that you'll see in the
23 hallway, and they'll direct you into a protective area.

24 Second announcement: As always, this is being
25 webcasted, recorded, so please speak into the

1 microphone. And begin by stating your name and
2 affiliation. Our court reporter has returned.

3 Thank you, Debbie.

4 And she will be providing us with the
5 transcripts. And we will note that we will post that
6 at the conclusion of Part 2. If you wish to have it
7 sooner, please make your arrangements directly with
8 her.

9 And for the newbies as well as the oldies, the
10 most important announcement is please take a moment
11 right now and put all your noise-making devices to
12 silent, vibrate, do not disturb. Please check, as I
13 am.

14 All right. A couple of housekeeping items
15 before we begin. First of all, I've got a couple of
16 rulings I need to issue. First of all, when we resumed
17 on February 22nd, Mr. Bezerra voiced an oral -- I
18 believe it was motion for reconsideration of our
19 February 21st ruling.

20 He stated that all of petitioner's technical
21 evidence is based on 2025 through 2030, I believe --
22 not '13 -- climate change projections. And DWR's
23 executive director said -- I think she's the director,
24 not the executive director -- said that the WaterFix
25 project will be built in stages, and the second stage

1 won't be built by 2025. And I believe that was the
2 grounds for his motion for reconsideration.

3 The motion is denied for the reasons given in
4 our February 21st ruling. The parties will have -- and
5 for the reasons we discussed at length yesterday.

6 The parties will have an opportunity to test
7 petitioners' technical evidence concerning staged
8 implementation and will present their own evidence on
9 staged implementation if and when we convene in Part 3
10 of this hearing.

11 We also -- this is not a ruling, but this is a
12 reminder, I believe. On February 22nd, NRDC introduced
13 NRDC-100 and NRDC-102 during cross-examination of DWR
14 witness Gwen Buchholz. After cross-examination, NRDC
15 moved those exhibits into evidence. DWR filed a
16 written objection on February 23rd, and NRDC filed a
17 written opposition to DWR's objection on February 26th.

18 We've also received several joinders from some
19 of the parties. We will rule on the admissibility of
20 NRDC-100 and 102 at a later date.

21 From this point forward, the parties are
22 directed to wait until the conclusion of all the Part 2
23 cases in chief before offering into evidence any
24 exhibits that are introduced during cross-examination.
25 When it becomes more certain when the cases in chief

1 are likely to be completed, we will set a deadline for
2 the parties to offer any cross-examination exhibits
3 into evidence and a deadline for any objection to those
4 exhibits. This is a practice that we instituted during
5 the rebuttal phase of Part 1 of the hearing, and we
6 found it to be more efficient and less confusing than
7 allowing the parties to offer their cross-examination
8 exhibits into evidence at different times during the
9 course of the hearing.

10 Again, we will rule on the admissibility of
11 NRDC-100 and NRDC-102 together with any other
12 cross-examination exhibits offered into evidence by the
13 parties after the Part 2 cases in chief have been
14 completed.

15 The other housekeeping matter I have is I'm
16 looking -- turning to Mr. Shutes. During your
17 cross-examination yesterday, you had made a request to
18 petitioners, perhaps to DWR, but to petitioners
19 regarding providing I believe it was a table of
20 operating criteria.

21 I don't think we addressed that issue. So at
22 this time, I'm going to ask you to restate or re --
23 repeat the request that you made, and I would like to
24 hear from petitioners on the feasibility of providing
25 that information.

1 MR. SHUTES: Very good. Chris Shutes for
2 California Sport Fishing Protection Alliance.
3 Yesterday I made a request that a table be provided
4 that shows not just the modeling constraints but the
5 actual rules that defined CWF H3+.

6 Mr. Miller did direct me to the Biological
7 Assessment Pages 3-86 and following pages which, in
8 part, satisfies the need for that. I have some
9 questions related to that table today. And one of
10 those issues that I have is whether -- the source of
11 the different rules for each of the columns is not
12 indicated in that table. I think it would be much more
13 convenient and useful to the parties to this hearing --

14 CO-HEARING OFFICER DODUC: And to the Hearing
15 Officer.

16 MR. SHUTES: -- if the source were indicated
17 in such a table. So -- and there are also some
18 editorial issues with that table.

19 CO-HEARING OFFICER DODUC: So let's do this.
20 Let's keep in mind your request. And as you pursue
21 your cross-examination and the questions that you've
22 just outlined, if we need to revisit that request
23 before you -- at the end of your cross-examination,
24 let's do so.

25 And let's get some clarification from the

1 witnesses, if they can, or else a commitment from DWR
2 as to when -- well, to the feasibility and when they
3 might be able to produce such a table if it is still
4 needed upon the conclusion of your cross-examination.

5 MR. SHUTES: Thank you.

6 CO-HEARING OFFICER DODUC: All right. Are
7 there --

8 MR. MIZELL: Hearing Officer Doduc?

9 CO-HEARING OFFICER DODUC: Yes?

10 MR. MIZELL: If I might provide a little bit
11 of additional information at this time?

12 CO-HEARING OFFICER DODUC: Okay.

13 MR. MIZELL: The table --

14 CO-HEARING OFFICER DODUC: Hold on, before you
15 do that.

16 I assume you have other housekeeping matters?

17 MR. STOKELY: Yes.

18 CO-HEARING OFFICER DODUC: Please sit down.
19 I'll get to you.

20 MR. STOKELY: Okay. Thank you.

21 CO-HEARING OFFICER DODUC: Mr. Mizell?

22 MR. MIZELL: The table that Mr. Miller brought
23 up the other day was in the Revised BA. I should also
24 note that a similar table of the project description
25 operating criteria can be found in SWRCB-105, 106, and

1 107. Those are the BOs and the ITP. So there is a
2 table of operating criteria in a number of the
3 different documents that have been provided for this
4 project.

5 CO-HEARING OFFICER DODUC: And they are the
6 same table that reflects -- yes.

7 MR. MIZELL: The Revised BA is the
8 application, so that it was the project description and
9 operating criteria provided by the Department to the
10 fishery agencies.

11 The tables in the BOs are the project
12 description and criteria tables permitted by each of
13 the federal fish agencies, and the project criteria
14 table in the ITP was the project that was permitted by
15 the California Department of Fish and Wildlife. So any
16 changes that were put in place by those permits would
17 be reflected in those operating criteria tables.

18 CO-HEARING OFFICER DODUC: Is there one table
19 that shows all of that?

20 MR. MIZELL: The latest table chronologically
21 would be the ITP table, and I would expect that to
22 incorporate the changes from the BOs as well as the
23 changes imposed by the California Fish and Wildlife.

24 CO-HEARING OFFICER DODUC: Mr. Shutes, does
25 that clarify matters?

1 MR. SHUTES: It helps clarify. Does -- I
2 haven't reviewed the -- at least recently, the specific
3 table in the ITP. Does that table in the ITP indicate
4 the source of the requirements that are given in -- for
5 each particular rule or constraint? And if not, I
6 believe there's value in having that.

7 CO-HEARING OFFICER DODUC: So why don't we let
8 you pursue that when you resume your cross-examination.

9 MR. SHUTES: Very well.

10 CO-HEARING OFFICER DODUC: In the meantime,
11 there was another housekeeping item?

12 And people, so you know, I will begin the day
13 with housekeeping. There is no need to line up and
14 draw my ire. Thank you.

15 MR. STOKELY: Thank you, Hearing Officer.

16 CO-HEARING OFFICER DODUC: Your microphone is
17 not on.

18 MR. STOKELY: How's that?

19 CO-HEARING OFFICER DODUC: Much better.

20 MR. STOKELY: Okay. I'm Tom Stokely,
21 representing Pacific Coast Federation of Fishermen's
22 Associations and Institute for Fisheries Resources,
23 Group No. 38.

24 I have a request to swap cross-examination
25 times with Group 37, Deirdre Des Jardins.

1 CO-HEARING OFFICER DODUC: We have that
2 request. She e-mailed it in to us yesterday.

3 MR. STOKELY: Okay.

4 CO-HEARING OFFICER DODUC: She is scheduled to
5 go after NRDC, who is scheduled to go after CSPA, I
6 believe.

7 MR. STOKELY: So is that okay?

8 CO-HEARING OFFICER DODUC: It is okay. I'm
9 not guaranteeing you a time certain. I don't --

10 MR. STOKELY: I know.

11 CO-HEARING OFFICER DODUC: -- know that we'll
12 get to you today.

13 MR. STOKELY: Thank you very much.

14 CO-HEARING OFFICER DODUC: Are there any
15 other -- Ms. Debbie?

16 (Discussion off the record)

17 (Recess taken)

18 CO-HEARING OFFICER DODUC: All right. Okay.
19 We've been given permission by the court reporter to
20 resume.

21 So, Mr. Shutes?

22 CROSS-EXAMINATION BY MR. SHUTES

23 MR. SHUTES: Very good. Chris Shutes
24 California Sport Fishing Protection Alliance.

25 Good morning. Mr. Miller, yesterday in your

1 testimony, you indicated that Table 3.3-1 the Revised
2 Biological Assessment contains the constraints for
3 CWF H3+ plus. Last night I reviewed that part of that
4 Biological Assessment, and I wonder if we could please
5 pull up DWR-1142, Chapter 3. And when we get there,
6 I'd like to look at Page 68.

7 And if you scroll up, please. Very good.

8 So this is the beginning of a table, and it's
9 titled "New and Existing Water Operations Flow Criteria
10 and Relationship to Assumptions in CalSim 2 modeling."

11 So these are the criteria, as I read this,
12 that are actually part of the proposed project; is that
13 correct, Mr. Miller?

14 WITNESS MILLER: That is my understanding.
15 However, my expertise is primarily on real-time
16 operations and how to operationalize certain criteria
17 and give you some examples. Ms. Buchholz was really
18 focused in on the project description.

19 MR. SHUTES: But in order to operationalize
20 the project, you need to know what the project is;
21 isn't that correct?

22 WITNESS MILLER: Yes, individual criteria,
23 sure.

24 MR. SHUTES: Thank you. Could we please turn
25 to Page 98? Just scroll down. Here we are.

1 So this table is also labeled "Table 3.3-1,"
2 and it is titled, "Proposed Action, CalSim 2 Criteria
3 and Modeling Assumptions."

4 I believe this should be labeled Table 3.3-2.
5 I looked at the following table and it was -3. This is
6 not the criteria for the project itself. These are the
7 modeling assumptions; isn't that correct Mr. Miller?

8 WITNESS MILLER: When I was referring to
9 Table 3.3-1, I was referring to the prior table.

10 MR. SHUTES: Thank you.

11 Mr. Reyes, in your Exhibit DWR-1069, you
12 included this table, did you not?

13 WITNESS REYES: Yes, I believe so.

14 MR. SHUTES: And these are the modeling
15 assumptions that you included in your exhibit, correct?

16 WITNESS REYES: That's correct.

17 MR. SHUTES: But did you not include the prior
18 table; is that correct?

19 WITNESS REYES: That's correct. I'm only
20 representing the modeling.

21 MR. SHUTES: Thank you. Could we go back to
22 Page 86, please.

23 I think you could just type in "86." It's the
24 same pdf pagination. And scroll down one more page,
25 please.

1 Mr. Miller, isn't it true that the source of
2 each criterion or set of criteria is not referenced as
3 to document or page number in this table?

4 WITNESS MILLER: I don't think I understand
5 your question.

6 MR. SHUTES: So where the rule comes from,
7 whether it's in one of the biological opinions or the
8 ITP or in D1641 or whatever governing regulatory
9 requirement governs for that particular rule is not
10 indicated in the table; is that correct?

11 WITNESS MILLER: I don't see where it would be
12 referenced. But that might be a better question for
13 Ms. Buchholz.

14 MR. SHUTES: Thank you.

15 Could we go down to Page 89 and look at
16 Footnote 32, please? It's the bottom of Page 89. And
17 maybe we could focus in on that. Thank you.

18 So I'm having a little trouble understanding
19 this, but as I read this, what it seems to suggest is
20 that the modeling for November and October that was
21 actually run is different than the actual proposed
22 project.

23 Mr. Reyes, if you would take a moment and
24 review this footnote, I think it would be helpful to us
25 to understand whether this is another discrepancy

1 between the modeling and the proposed project.

2 WITNESS REYES: Okay. Let me take some time
3 to read that footnote, please.

4 MR. SHUTES: Thank you.

5 WITNESS REYES: Okay. Yeah, I read through
6 that. Could you -- did you have a question about that?
7 Sorry.

8 MR. SHUTES: Is there a discrepancy between
9 the proposed project CWF H3+ and the way you modeled it
10 for CWF H3+? Or does this footnote refer to a
11 different model run, such as BA H3+?

12 WITNESS REYES: So I believe this --

13 WITNESS GREENWOOD: I think I could provide an
14 answer to this, if I may.

15 MR. SHUTES: Sure.

16 WITNESS GREENWOOD: I think this is trying to
17 address the issue of the modeling in the BA, largely
18 being based on the BA H3+ scenario, which included the
19 Old and Middle River October-November restrictions, but
20 the proposed action described, which is CWF H3+, an
21 operational scenario, doesn't actually include those
22 October-November restrictions.

23 But the model results, as it notes there
24 provided to Fish and Wildlife Service, indicated that
25 these updated operational criteria -- meaning not

1 including October-November or Old and Middle River flow
2 criteria -- are consistent with the effects analyzed in
3 the BA.

4 So although the proposed action doesn't
5 include the October-November criteria, the effects of
6 not having those criteria are consistent with the
7 effects analyzed in the BA, which are based on the
8 BA H3+ scenario for the biological modeling. They were
9 still consistent. I think that's what that's trying to
10 capture.

11 So maybe if we could go up in the table to
12 where the Footnote 32 is actually initially referenced.

13 I think it's down -- down a bit there.

14 So that's -- the right column is the CalSim
15 modeling assumption, correct? And then the left column
16 would be the actual?

17 MR. SHUTES: Right. So my question simply is
18 is what's stated in the table correct? Is it a
19 reflection of CWF H3+, the proposed project, or does it
20 need to be corrected?

21 WITNESS GREENWOOD: Sorry. I'm just reading
22 it to verify that. It should capture the idea that the
23 Old and Middle River flows October-November are the
24 same criteria as the No Action Alternative, apply.

25 MR. SHUTES: All right. I don't think we need

1 to take more time on this particular issue, but I'd
2 like to flag it as something that needs to be
3 investigated, and someone needs to -- we need to know
4 whether this table is accurate, number one, and, number
5 two, whether what's in the table and what's in the
6 proposed project were modeled in the model run for
7 CWF H3+ or whether there's a discrepancy between the
8 model run and the proposed project.

9 CO-HEARING OFFICER DODUC: Before we flag it,
10 though, I thought I understood Dr. Greenwood's
11 explanation to say that, while the modeling included
12 the OMR restrictions for October-November --

13 WITNESS GREENWOOD: For BA H3+.

14 CO-HEARING OFFICER DODUC: Yes, which is not
15 in CWF H3+, correct?

16 WITNESS GREENWOOD: The October-November is
17 not in CWF H3+.

18 CO-HEARING OFFICER DODUC: However, your
19 assertion is that the modeling results are consistent
20 and that that did not make a difference, whether the
21 OMR restriction in October-November was modeled or not
22 didn't make a difference in the outcome, and therefore
23 you did not revise the modeling, but you added the
24 footnote to acknowledge that, while the modeling
25 included the OMR restriction, the outcome would have

1 been the same if it had not.

2 WITNESS GREENWOOD: I wouldn't say the same,
3 but that the -- if we could go back down to the
4 footnote, it characterizes it as "consistent with." So
5 there are -- it's not the same; there are differences,
6 but that the effects -- the conclusions based on the
7 modeling run that was included would be -- were
8 consistent. So maybe if we --

9 CO-HEARING OFFICER DODUC: And what does
10 "consistent" mean?

11 WITNESS GREENWOOD: That the ultimate
12 conclusions regarding the effects on the species would
13 remain the same, although there are differences in the
14 modeling. In my summary testimony, I'd shown from
15 the -- the developments after final publication
16 document, I'd shown those several different graphs that
17 compared the No Action to the BA H3+ to the CWF H3+, if
18 you recall. And I was comparing those for -- could we
19 bring it up? It might help just to refresh our
20 memories where we initially had provided --

21 CO-HEARING OFFICER DODUC: I would like to do
22 so, to the extent that we can address your concern now
23 rather than flagging it and revisiting it later.

24 MR. SHUTES: That's fine. I am not
25 questioning whether the effects are the same. I'm

1 simply questioning whether what's stated in the table
2 is accurate. That is my issue.

3 CO-HEARING OFFICER DODUC: Got it.

4 MR. SHUTES: And if there are -- if there
5 needs to be a change in the table, it ought to be made.

6 CO-HEARING OFFICER DODUC: Does anyone know at
7 this time whether there needs to be a change in the
8 table? Is it something that you need to get back to us
9 later this week, like tomorrow?

10 WITNESS GREENWOOD: I think it would be worth
11 verifying whether the table needs to be changed. I
12 would suggest a cleaner table would be -- as Mr. Mizell
13 indicated, the ITP -- the incidental take permit that
14 was issued has a similar table. But I would suggest a
15 cleaner table might be better.

16 CO-HEARING OFFICER DODUC: Al right. We will
17 then revisit that tomorrow as part of housekeeping or
18 whatever.

19 MR. SHUTES: Thank you. Let's go on.

20 Mr. Miller, do you know when DWR-1142 was
21 submitted as an exhibit?

22 WITNESS MILLER: No.

23 MR. SHUTES: I don't see it in the latest
24 exhibit list of DWR dated 12/4/17. Can I presume that
25 it was submitted after 12/4/17?

1 WITNESS MILLER: I don't know when it was
2 submitted.

3 MR. SHUTES: Thank you. Does your testimony
4 refer at any time to DWR-1142?

5 WITNESS MILLER: That was a correction I made.
6 I initially -- on Page 9 of my testimony, Line 19, I
7 initially had Exhibit SWRCB-104.

8 MR. SHUTES. Thank you.

9 MR. MIZELL: And to clarify on the record,
10 DWR-1142 was submitted timely with the rest of our case
11 in chief. It was inadvertently left off the index of
12 exhibits. However, State Water Board staff confirmed
13 that they did receive it and asked that we revise our
14 index to reflect the fact we submitted DWR-1142.

15 MR. SHUTES: Thank you.

16 So going back to either -- well, let's go back
17 to DWR-1142 Page 398, please -- 3-98, Page 98.

18 So, again, this is the modeling assumptions.
19 And these, as I understand it, Mr. Miller, are -- are
20 simply modeling assumptions. They are not part of the
21 proposed project as such; is that correct?

22 MS. ANSLEY: Objection, asked and answered.

23 CO-HEARING OFFICER DODUC: It would help me if
24 he answers it again.

25 WITNESS MILLER: So the reference I made

1 yesterday was the table labeled 3.3-1 that is above
2 this table.

3 MR. SHUTES: Understood.

4 I could ask the same question of Mr. Reyes.

5 WITNESS REYES: Could you ask the question
6 again, please?

7 MR. SHUTES: These are simply modeling
8 assumptions, and that's all that it indicates. It does
9 not indicate that this, which is also what you list on
10 Page 13 to 17 of your DWR-1069 exhibit, those are
11 modeling assumptions and not necessarily part of the
12 proposed project; is that correct?

13 WITNESS REYES: I can confirm that they're the
14 modeling assumptions, yes.

15 MR. SHUTES: So either Mr. Reyes or Mr. Miller
16 could answer this question. Would it be fair to say
17 that the analysis of Dr. Greenwood and Dr. Wilder was
18 an analysis based on placeholders in modeling for the
19 bypass flows for the North Delta diversions?

20 MR. MIZELL: Objection, vague and ambiguous as
21 to what he means by "placeholders."

22 MR. SHUTES: That they are numbers that were
23 used for modeling, but they are not necessarily part of
24 the proposed project.

25 WITNESS REYES: I would say that these

1 modeling assumptions were derived from the criteria
2 that Mr. Miller referenced, and they're meant to be
3 representative of those criteria except for there are
4 simplifications that had to be made for the model
5 purpose.

6 MR. SHUTES: I understand that. But isn't it
7 true that, in fact --

8 If you'd scroll down one more page, please?

9 -- that the values on this table and the
10 subsequent pages, which are also included in DWR-1069,
11 are values that are actually, in reality, yet to be
12 determined and that these were used for modeling but
13 these numbers -- none of these values for bypass flows
14 are actually specifically for part of the proposed
15 project CWF H3+; is that correct?

16 MR. MIZELL: Objection, Mr. Shutes went over
17 this same question yesterday. This is simply
18 repetitive.

19 CO-HEARING OFFICER DODUC: It's helping me, so
20 overruled.

21 WITNESS MILLER: So my understanding of this
22 table is that the values -- so it'd be the bypass flows
23 specified in this table which are based -- well, that
24 allowable diversions, which are based on the bypass
25 flows specified in this table are part of the project

1 but what is yet to be determined, is how you go from
2 Level 1 to Level 2 to Level 3.

3 MR. SHUTES: Can you tell me where it states
4 in any document that these are part of the project and
5 not simply modeling values?

6 MR. MIZELL: Objection, this was a question
7 that should have been addressed to Ms. Buchholz, not to
8 Mr. Miller. It goes directly to the project
9 description. We had a witness and an entire panel that
10 could answer those questions.

11 Mr. Shutes apparently missed his opportunity,
12 and he's trying to get it in at this point under
13 operations.

14 CO-HEARING OFFICER DODUC: Overruled, to the
15 extent that Mr. Miller is able to answer the question.

16 And if you do not know, then...

17 WITNESS MILLER: I don't know where that would
18 be stated.

19 MR. SHUTES: Thank you.

20 WITNESS GREENWOOD: If I may suggest, we could
21 look at the incidental take permit conditions. It
22 would be towards the end of that document.

23 So if you move up, please.

24 MR. SHUTES: I think you went too far.

25 WITNESS GREENWOOD: Down to the start of the

1 table.

2 "New and existing water operations flow
3 criteria," and then please move down. Keep going until
4 you get to the table that has similar information to
5 what we were just looking at.

6 So this is post pulse operations for North
7 Delta diversion intake bypass flows.

8 MR. SHUTES: Can you scroll down to the bottom
9 of that, please -- and keep going.

10 I will review, but I believe there's a caveat
11 that says that these are numbers that are subject to
12 change in the interim, between now and the operation of
13 the -- the actual commencement of operation.

14 MR. MIZELL: Objection, no question pending,
15 assumes facts not in evidence. The questioner is
16 testifying.

17 CO-HEARING OFFICER DODUC: Do any of the
18 witnesses know whether those flow values are subject to
19 change?

20 WITNESS GREENWOOD: Tough to verify regarding
21 the actual values. But as Mr. Miller indicated during
22 the test period that I discussed, the -- there is the
23 potential for refinement of the switching between the
24 different levels. And I would have to verify whether
25 that also includes the actual values or not.

1 CO-HEARING OFFICER DODUC: Thank you.

2 MR. SHUTES: Very good. Let's move on.

3 On Page 3-91 of the Biological Assessment, the
4 table suggests that management of the Head of Old River
5 Gate operations will take place, and it suggests that
6 there will be monitoring protocols developed for Head
7 of Old River. Mr. Miller, who will pay for that
8 monitoring?

9 WITNESS MILLER: I'm not sure.

10 MR. SHUTES: Mr. Miller, last night I reviewed
11 your response regarding Page 66 of the ITP and willing
12 sellers, and I'm still trying to understand your
13 response and the clarification memo and how that
14 applies.

15 Can I try to -- let me see if I understand you
16 correctly. Would it be correct to say that DWR could
17 avoid having to pay for water by reducing the
18 outflow -- by reducing its diversions to 1500 -- it's
19 exports, total exports to 1500 cfs in order to meet the
20 outflow criteria for March through May? Is that the
21 substance of your response?

22 WITNESS MILLER: I'm sorry. Can you repeat
23 that?

24 MR. SHUTES: Do I understand you correctly to
25 say that, rather than purchasing water from willing

1 sellers, DWR could avoid noncompliance with the outflow
2 criteria for March through May by reducing exports to
3 1500 cfs? Is that the thrust of your comment
4 yesterday?

5 WITNESS MILLER: No.

6 MR. SHUTES: Can you clarify your comment,
7 please?

8 WITNESS MILLER: I could reread the
9 clarification letter if that helps.

10 MR. SHUTES: I don't think it does because I
11 don't understand how it relates to the willing sellers
12 aspect. Are you suggesting that the entire reference
13 to willing sellers is no longer valid because of that
14 clarification in the memo?

15 WITNESS MILLER: The clarification in the memo
16 lists the need to only reduce exports down -- total
17 exports down to 1500 cfs in meeting the spring outflow
18 target.

19 MR. SHUTES: Would there be other ways to meet
20 the outflow criteria in March, such as purchasing
21 water, allowing greater exports according to the March
22 rules?

23 MS. ANSLEY: Objection, vague and ambiguous.
24 Does he mean pursuant to the ITP permit and the
25 subsequent clarification letter? Is he asking for that

1 source?

2 MR. SHUTES: Yes.

3 WITNESS MILLER: Can you repeat your question,
4 please.

5 MR. SHUTES: Would there be other ways to meet
6 the outflow criteria in March -- the outflow criteria
7 under the ITP in March such as purchasing water to
8 allow greater exports according to the March rules?

9 WITNESS MILLER: I would imagine there are
10 potentials but the clarification memo does not speak of
11 transfers or purchases. It speaks only of exports.

12 MR. SHUTES: If DWR or the Bureau elected to
13 purchase water or to see that water was purchased in
14 order to increase -- in order to enable greater exports
15 who would pay for that water?

16 CO-HEARING OFFICER DODUC: Do you know the
17 answer, Mr. Miller?

18 WITNESS MILLER: I -- I don't.

19 MR. SHUTES: So I have the same question for
20 the outflow criteria in April and May, such as
21 purchasing water for -- to allow greater exports by
22 increasing the flow in the San Joaquin River. Let me
23 back up one step.

24 The April and May flow under the outflow
25 criteria under the ITP are governed by the

1 inflow-export ratio in the San Joaquin River, correct?

2 WITNESS MILLER: So in the example that I
3 provided, that was correct; however, the ITP uses a
4 slightly different method for determining the spring
5 outflow target.

6 MR. SHUTES: So isn't it possible that some
7 entities could purchase water in order to allow greater
8 exports according to the inflow -- San Joaquin
9 inflow-export rule?

10 MR. MIZELL: Objection, incomplete
11 hypothetical. There are a number of other conditions
12 that we need to know about the hydrology to determine
13 that.

14 CO-HEARING OFFICER DODUC: Mr. Shutes?

15 MR. SHUTES: I'm not sure what part is
16 incomplete.

17 I would simply ask if there would be ways to
18 meet the outflow criteria under the ITP in April and
19 May by purchasing water under any hydrological
20 scenarios.

21 MS. ANSLEY: Objection, vague and ambiguous
22 overbroad. Do we mean purchases by the DWR? Earlier
23 he said some parties -- you know, if the witness knows,
24 but that lacks a lot of specificity.

25 CO-HEARING OFFICER DODUC: Mr. Miller, do you

1 have any knowledge about this to which you can answer
2 Mr. Shutes' question?

3 WITNESS MILLER: Based on the ITP, no, I --
4 I'm a little confused. And I don't think I can answer
5 that question.

6 MR. SHUTES: Okay. Let's go back to your
7 response regarding the other conditions that need to be
8 met under the ITP for April and May outflow.

9 I asked you -- I asked if the April and May
10 outflow requirement was governed by the San Joaquin
11 River inflow-to-export ratio. And you said that that
12 was only partly true, that there were other
13 requirements. Could you tell me what those
14 requirements are, please?

15 WITNESS MILLER: I believe that was
16 Mr. Mizell.

17 CO-HEARING OFFICER DODUC: Who is not supposed
18 to testify.

19 Mr. Miller, do you agree with that comment?
20 Is it correct?

21 WITNESS MILLER: So are we talking about the
22 ITP permit, or are we talking about the ITP
23 application?

24 MR. SHUTES: What I'm really talking about and
25 trying to get to is what the proposed project is. And

1 since I don't know the exact -- so what I understood
2 you to say yesterday and the day before regarding the
3 outflow criteria in April and May was that it was
4 governed by the San Joaquin River inflow-to-export
5 ratio unless there was a certain threshold achieved, in
6 which case, it no longer applied.

7 Is that an accurate characterization of the
8 April and May outflow requirements under CWF H3+?

9 WITNESS MILLER: Well, what I provided was an
10 example of how the spring outflow target could be
11 operationalized and implemented in 2016 based on the
12 criteria listed in the ITP application.

13 MR. SHUTES: The ITP application?

14 WITNESS MILLER: Yes.

15 MR. SHUTES: So you don't know what the
16 requirement is under the proposed project CWF H3+?

17 WITNESS MILLER: The ITP -- the permit that we
18 got from DFW has a different outflow mechanism for
19 determining the outflow target.

20 MR. SHUTES: In April and May?

21 WITNESS MILLER: In April and May.

22 MR. SHUTES: Can you explain that to us,
23 please?

24 WITNESS MILLER: I think the exhibit that
25 Dr. Greenwood was just looking at, which was 107,

1 SWRCB-107.

2 I'm going to guess that may be above this. I
3 think right there, Mr. Hunt. Thank you.

4 So Section 9.9.4.3 describes the methodology.

5 MR. SHUTES: And if we scroll down, please,
6 because this goes -- okay. Stop.

7 And all right. Very well. I'm going to move
8 on.

9 WITNESS MILLER: And then just to clarify that
10 the clarification memo -- clarification letter is
11 clarifying this section here.

12 MR. SHUTES: So does this -- this does not
13 appear in the Biological Assessment table; is that
14 correct?

15 WITNESS MILLER: I would have to look through
16 it to answer that one.

17 MR. SHUTES: All right. Let's move on, I have
18 a few different questions.

19 Mr. Miller on Page 5, Lines 1 to 4 of your
20 testimony --

21 That's DWR-1011, if you could bring that up,
22 please?

23 You talk about the water operations management
24 team or WOMT. And I believe you or one of your
25 colleagues yesterday described the role of State Board

1 staff in WOMT. Could you review that please? What is
2 that role?

3 CO-HEARING OFFICER DODUC: I'm sorry. I don't
4 recall that part.

5 MR. SHUTES: One of the witnesses yesterday
6 mentioned -- I believe it was on cross-examination by
7 Ms. Meserve, that the Water Operations Management Team,
8 it's listed here in Mr. Miller's testimony, consists of
9 Reclamation, DWR, and the three fisheries agencies but
10 that the State Board staff often, I believe the term
11 was "sits in" on the Water Operations Management Team
12 meetings.

13 I wondered if he could clarify what that role
14 is within the Water Operations Management Team.

15 CO-HEARING OFFICER DODUC: Thank you for
16 refreshing my memory.

17 WITNESS MILLER: I think I mentioned that they
18 monitored.

19 MR. SHUTES: Does that mean they attend the
20 meetings?

21 WITNESS MILLER: They call in. I mean, these
22 are mostly conference calls.

23 MR. SHUTES: And are they strictly listening,
24 or are they offering comments or recommendations?

25 WITNESS MILLER: They are asked if they have

1 anything to add.

2 MR. SHUTES: Thank you. Can we scroll down to
3 Page 7, please. And it may be that some of this -- is
4 it your testimony, Mr. Miller, that it's no longer the
5 case that the San Joaquin River inflow-export ratio has
6 any role in the outflow criteria now that the ITP has
7 superceded it? Or does it have some role?

8 WITNESS MILLER: The ITP does not list the
9 San Joaquin I/E as a method for determining the spring
10 outflow target. However, in my testimony, I was
11 showing an example of how the spring outflow target
12 could be met or could be determined.

13 And that's what I provided in my testimony.
14 That's consistent with our -- our Final EIR/EIS.

15 MR. SHUTES: I see. So the example now would
16 have to be different based on the ITP; is that correct?

17 WITNESS PARKER: It -- I looked at it, and the
18 results, at least in my analysis, are substantially the
19 same.

20 MR. SHUTES: I understand, but the analysis
21 would be different, would it not?

22 MR. MIZELL: Objection, asked and answered.

23 MR. SHUTES: All right.

24 Mr. Miller, we heard yesterday that the
25 minimum sweeping velocity for the North Delta diversion

1 intakes is 0.4 feet per second. I believe

2 Dr. Greenwood provided that information.

3 My question is, if the sweeping velocity is
4 moving upstream rather than downstream, will DWR
5 operate to divert water at the NDD as long as the
6 upstream velocity exceeds 0.4 feet per second?

7 MR. MIZELL: Objection, misstates the
8 testimony. It was repeatedly referenced yesterday and
9 days prior to that as 0.2.

10 MR. SHUTES: Excuse me. The approach
11 velocity, as I understand, it was referenced as 0.2.
12 The sweeping velocity needed to be at least double the
13 approach velocity, and therefore, it would be 0.4. And
14 so I --

15 CO-HEARING OFFICER DODUC: Dr. Greenwood or
16 Mr. Miller or somebody?

17 WITNESS GREENWOOD: So the question was if
18 sweeping velocity was moving upstream. I don't think
19 it's specifically stated, but I think it's safe to
20 assume that sweeping velocity means downstream 0.4 feet
21 per second.

22 MR. SHUTES: And on a spring tide, there are
23 no cases when the sweeping velocity would be moving
24 upstream?

25 WITNESS GREENWOOD: It may be, but as I said,

1 my understanding is that the sweeping velocity would be
2 for downstream -- downstream passage, given that the
3 intent is to protect downstream migrating juvenile
4 salmonids, for example, passing the screen.

5 MR. SHUTES: And if smelt were moving
6 upstream, wouldn't part of the interest in maintaining
7 the sweeping velocity also be to protect smelt?

8 WITNESS GREENWOOD: The downstream sweeping
9 velocity or --

10 MR. SHUTES: Any sweeping velocity.

11 WITNESS GREENWOOD: Sweeping velocity is
12 primarily for fish moving downstream. So -- and
13 largely focused on juvenile salmonids, as I mentioned,
14 so.

15 MR. SHUTES: Okay. I understand --

16 WITNESS GREENWOOD: The approach velocity is
17 the criteria, and that's primarily intended to protect
18 Delta smelt.

19 MR. SHUTES: Thank you.

20 Mr. Miller, you stated yesterday that the
21 minimum total North Delta and South Delta diversions
22 under March to May outflow requirements is 1500 cfs.
23 Is that value an instantaneous value, or is that an
24 equivalent value for diversions that are averaged over
25 a day?

1 WITNESS MILLER: So that 1500 cfs is I think,
2 as we discussed yesterday, assuming that no other
3 constraints are -- there are no other reasons for
4 producing further, for example, for water quality,
5 correct?

6 MR. SHUTES: I'm sorry. I didn't -- I didn't
7 hear a direct answer to the question.

8 WITNESS MILLER: It wasn't a direct answer.
9 I'm sorry. I was trying to caveat that the 1500 that
10 we talked about yesterday was for -- specifically for
11 reductions due to meeting the spring outflow target.

12 And so, based on that, can you ask your
13 question again?

14 MR. SHUTES: Yes.

15 MR. JACKSON: Before he asks the question
16 again, and I don't mean -- I just watched me lose an
17 hour on that clock.

18 CO-HEARING OFFICER DODUC: Yes, I asked staff
19 to make the correction. You had requested three hours,
20 and that's how they initially set the clock. But I
21 will remind all the parties that we are allowing two
22 hours to cross-examination and additional time upon
23 offer of proof.

24 So when we get down to that, you may flag me
25 with your topics that you need additional time for, and

1 I will issue that decision then.

2 MR. JACKSON: All right. I just wanted to
3 make sure that I do get a chance to -- I've got two
4 witnesses that I want to cross.

5 CO-HEARING OFFICER DODUC: And you will have
6 to convince me in terms of the relatively of the issues
7 that you want to cover with them. The rule will apply
8 to everybody, not just you, Mr. Jackson.

9 MR. SHUTES: The question was is the 1500 cfs
10 value an instantaneous value, or is it a value for
11 equivalent -- the equivalent value averaged over a day?

12 WITNESS MILLER: It would be the daily
13 average.

14 MR. SHUTES: Thank you. That's all I have.

15 CO-HEARING OFFICER DODUC: Thank you,
16 Mr. Shutes.

17 MR. JACKSON: My questions will be of
18 Dr. Wilder and Dr. Greenwood and in regard to their
19 testimony 1012 and 1013 signed.

20 CO-HEARING OFFICER DODUC: What in particular
21 in their testimony?

22 MR. JACKSON: The questions for Mr. Wilder
23 will include questions in his executive level overview,
24 his analytical approach, the summary of his
25 conclusions, the biology of salmonids, his definitions

1 of terms like "minor," "reasonable," "moderate," his
2 comparisons, his conclusion about reasonable
3 protection, modeled reservoir storage volume, flows,
4 water temperatures, the use of the SacEFT, the use of
5 the -- of salmonid -- or SALMOD, which is another
6 measuring device, I guess, questions in regard to his
7 conclusions about the Sacramento River, the Feather
8 River, the American River, the Trinity River and Clear
9 Creek, and his lifecycle sections.

10 For Mr. Greenwood, they will deal with his
11 executive level overview, his overview of his testimony
12 and opinions, discussions of Delta smelt, longfin
13 smelt, unlisted species, salmonid effects at the -- at
14 the diversion -- at the new diversions, and his
15 definition of "reasonable protection."

16 CO-HEARING OFFICER DODUC: All right. Please
17 proceed.

18 And I encourage everyone to listen carefully
19 to Mr. Jackson's cross-examination. Sounds like he
20 intends to cover a lot of ground with respect to the
21 testimony of these two witness, and I do not want a
22 repeat.

23 CROSS-EXAMINATION BY MR. JACKSON

24 MR. JACKSON: I guess the first question I've
25 got is a general question. Would -- would the group

1 here lined up indicate how many of you work for DWR
2 just by raising your hand?

3 CO-HEARING OFFICER DODUC: And we note the
4 results for the record, since the showing of hands --
5 Dr. Hsu, Ms. Smith, Mr. Reyes, Mr. Miller.

6 How many of you work for the Bureau?

7 So Ms. Parker and Ms. White.

8 And how many of you are consultants?

9 Dr. Guerin, Dr. Greenwood, Dr. Wilder,
10 Dr. Bryan, Dr. Preece, and Dr. Ohlendorf.

11 Okay. Thank you.

12 Dr. Greenwood, who employs you?

13 MR. MIZELL: Objection, relevance.

14 MR. JACKSON: The relevance is that the -- it
15 goes to the weight of the testimony, the bias, the
16 potential influences of expert witnesses. It's a
17 standard question in court.

18 CO-HEARING OFFICER DODUC: Overruled. It's --
19 Mr. Mizell, to the extent that it will help speed
20 things along, when basic questions are asked, let's
21 just go ahead and let them be asked and answered. Save
22 your objections for when they really count.

23 Mr. Jackson -- you're confusing me with the
24 name tags. I keep wanting to call you Mr. Shutes, and
25 I know you're Mr. Jackson.

1 WITNESS GREENWOOD: I work for ICF.

2 MR. JACKSON: And ICF is employed by whom?

3 WITNESS GREENWOOD: Department of Water
4 Resources.

5 MR. JACKSON: Okay. Dr. Wilder? Who do you
6 work for?

7 WITNESS WILDER: Oh, ICF.

8 MR. JACKSON: And you're also employed by DWR?

9 WITNESS WILDER: Yes.

10 MR. JACKSON: Through ICF?

11 WITNESS WILDER: Right.

12 MR. JACKSON: Dr. Wilder, on Page 2 of your
13 testimony, you indicate that --

14 Would you put up 1013 signed?

15 The first part of the questions will be for
16 Dr. Wilder on the upstream portion.

17 The second part of what I had proposed to do
18 was the -- was Dr. Greenwood and the Delta.

19 On Line 8, you indicate that upstream changes
20 described in your testimony indicate that, under CWF H3
21 there would potentially -- the program would
22 potentially cause degraded conditions relative to the
23 NAA for these species.

24 What degraded conditions potentially do you
25 expect to be -- of the CWF cause primary management

1 concerns?

2 WITNESS WILDER: What I said here is that
3 there are potentially a couple degraded conditions that
4 would -- that could cause -- that would not have or not
5 likely to have a biological effect on the species that
6 I analyzed.

7 Those degraded conditions include things like
8 flows and water temperatures primarily.

9 MR. JACKSON: All right. And when you say
10 that -- that these flows and water temperature
11 conditions on rivers upstream of the Delta could
12 potentially cause degraded conditions, are you talking
13 about conditions in the future, or are you simply
14 comparing it to the present NAA?

15 WITNESS WILDER: The latter. All my analyses
16 are CWF H3+ versus the No Action Alternative.

17 MR. JACKSON: We're in a hearing that's
18 talking about a change of point of diversion from the
19 South Delta to the North Delta; is that correct?

20 WITNESS WILDER: Yeah. There's the addition
21 of a new point of diversion in the North Delta,
22 correct.

23 MR. JACKSON: Or three new points of
24 diversion, correct? Those points of diversion don't
25 exist in the NAA, do they?

1 WITNESS WILDER: That's correct.

2 MR. JACKSON: Why are you comparing them to
3 the NAA rather than taking a look at how the new points
4 of diversion affect the estuary?

5 MR. MIZELL: Objection, assumes facts not in
6 evidence. Also vague and ambiguous.

7 The questioner asserts that the comparison
8 doesn't analyze the effects to the estuary. I don't
9 believe that's anywhere in the record, or
10 alternatively, I didn't understand his question because
11 it's vague and ambiguous.

12 CO-HEARING OFFICER DODUC: I think I could
13 also use clarification, Mr. Jackson.

14 MR. JACKSON: Sure. The comparison of CWF H3+
15 is to a condition in which we have three diversions in
16 H3+, none in NAA at a location in which there has been
17 no underlying analysis of whether or not that change in
18 point of diversion is reasonable.

19 CO-HEARING OFFICER DODUC: I think you've lost
20 me.

21 MR. JACKSON: All right.

22 There are -- why did you pick a comparison
23 between the NAA instead of looking -- with NAA instead
24 of looking at the effect of the CWF on the biology of
25 the Delta?

1 WITNESS WILDER: I must admit, I'm confused,
2 too. But let me just specify that, if you want to know
3 the effect of something -- in this case, CWF H3+ -- you
4 need to analyze with and without CWF H3+. And that's
5 what I did.

6 MR. JACKSON: Isn't that a NEPA or CEQA
7 analysis rather than an analysis under the Water Code?

8 WITNESS WILDER: I'm not a policy expert.
9 I -- we did that analysis for the NEPA analysis but we
10 also do it for other -- other parts of the regulations.

11 MR. JACKSON: Do you know what the Water Code
12 says is the standard for a change in point of
13 diversion?

14 MR. MIZELL: Objection, calls for a legal
15 conclusion.

16 CO-HEARING OFFICER DODUC: He may answer he
17 does not know.

18 MR. JACKSON: Right.

19 WITNESS WILDER: I do not know.

20 MR. JACKSON: Dr. Greenwood, do you know?

21 WITNESS GREENWOOD: I don't know.

22 MR. JACKSON: If the NAA itself is
23 unreasonable, does the comparison between the H3 F --
24 or H3+ mean anything as to what the conditions in the
25 estuary will look like after you build the project?

1 MR. MIZELL: Objection, assumes facts not in
2 evidence, that the NAA is unreasonable. If the
3 questioner would like to rephrase in a hypothetical,
4 I'll remove my objection.

5 CO-HEARING OFFICER DODUC: Hypothetically.

6 MR. JACKSON: Hypothetically.

7 WITNESS WILDER: I'm sorry. Can you repeat
8 the question?

9 MR. JACKSON: Sure. Does a comparison --
10 hypothetically, does a comparison with the NAA have any
11 relevance for existing degraded conditions in the
12 Delta?

13 WITNESS WILDER: Again, if you want to know
14 effects of a project, you need to analyze the effects
15 by determining what it looks like with and without the
16 project. And that's what I did.

17 WITNESS GREENWOOD: And I would emphasize, our
18 focus in all of these opinions is the incremental
19 effect of the California WaterFix CWF H3+ relative to
20 the project No Action Alternative.

21 MR. JACKSON: So again, to Dr. Miller first
22 and then to Dr. Greenwood, as you considered these
23 things, you assumed that the NAA was reasonable in
24 terms of protection of the rivers in the estuary?

25 WITNESS WILDER: I'm assuming you meant

1 Dr. Wilder instead of --

2 MR. JACKSON: Dr. Wilder, I'm sorry.

3 WITNESS WILDER: No, I didn't assume anything
4 related to NAA. It was simply a comparison of the NAA
5 to the CWF H3+ and, as Dr. Greenwood said, looking at
6 the incremental difference between the two.

7 MR. JACKSON: So if the NAA did not meet the
8 Water Code standards for a change in point of
9 diversion, your testimony doesn't address that problem?

10 WITNESS WILDER: My testimony looks at the
11 biological effects of upstream species.

12 MR. JACKSON: And are you aware that the
13 upstream species you're looking at have declined over
14 time by approximately 90 percent?

15 WITNESS WILDER: Yes.

16 MR. JACKSON: So --

17 WITNESS WILDER: Some, at least.

18 MR. JACKSON: In every place that you compare
19 the CWF H3+ to a degraded system for the species, are
20 you actually looking at whether or not we could change
21 a point of diversion under Water Code rules?

22 WITNESS WILDER: Again, I -- I need to say
23 that the analysis I did compared a with and without
24 project only.

25 MR. JACKSON: Dr. Greenwood, would the same be

1 true for you?

2 WITNESS GREENWOOD: That's right, the
3 incremental effect relative to a No Action Alternative,
4 which includes things such as the criteria from the
5 2008, 2009 Biological Opinions and the Water Quality
6 Control Plan criteria, for example.

7 MR. JACKSON: Now, if the Water Quality
8 Control Plan changed in the 14 or 15 years,
9 hypothetically -- changed in the 14 or 15 years before
10 build-out, would any of your conclusions be likely to
11 be still valid?

12 MR. MIZELL: Objection, calls for extreme
13 speculation.

14 CO-HEARING OFFICER DODUC: Mr. Mizell, they
15 can answer that.

16 WITNESS WILDER: Yeah, I --

17 CO-HEARING OFFICER DODUC: There's no way to
18 know because you don't know what the changes might be.

19 WITNESS WILDER: Thank you.

20 MR. JACKSON: Same answer, Dr. Greenwood?

21 WITNESS GREENWOOD: Yes, same answer.

22 MR. JACKSON: Is the purpose of the -- I'm
23 trying to go fast because the clock is still ticking,
24 and I want to entice you.

25 Is the -- Dr. Wilder, let's take an example,

1 and we'll start with Shasta Reservoir. Shasta
2 Reservoir has certain effects on fish species, does it
3 not, downstream?

4 WITNESS WILDER: Are you referring to the
5 operations of Shasta Reservoir?

6 MR. JACKSON: Its existence, first.
7 Winter-run don't go to McCloud anymore; they go to
8 Redding?

9 WITNESS WILDER: Yeah, and that would be
10 upstream of Shasta.

11 MR. JACKSON: And the same thing would be true
12 in the Feather River, they don't go home to Quincy with
13 me; they hang around in the low flow section of the
14 Feather River?

15 WITNESS WILDER: That's correct.

16 MR. JACKSON: And the same thing is true on
17 each main stem tributary?

18 WITNESS WILDER: With a reservoir, yes.

19 MR. JACKSON: And most of those reservoirs
20 belong to the Bureau?

21 WITNESS WILDER: I haven't enumerated them.

22 MR. JACKSON: Shasta belongs to the Bureau?

23 WITNESS WILDER: Yes.

24 MR. JACKSON: Friant belongs to the Bureau?

25 WITNESS WILDER: Yes.

1 MR. JACKSON: New Melones belongs to the
2 Bureau?

3 WITNESS WILDER: Yes.

4 MR. JACKSON: Folsom belongs to the Bureau?

5 WITNESS WILDER: Yes.

6 MR. JACKSON: And DWR has one facility on the
7 Feather River called Oroville, correct?

8 WITNESS WILDER: Yes, DWR owns Oroville.

9 MR. JACKSON: So because those species can no
10 longer move above, the operation of those reservoirs
11 becomes more critical than -- to the species than
12 probably anything else on the river, correct?

13 MR. MIZELL: Objection, at this point, we've
14 gone -- we've humored Mr. Jackson in going well beyond
15 the scope of this hearing. He's spent the last 20
16 minutes asking questions as to the existing facilities,
17 the existing dams, the impacts of what the State and
18 Federal projects do or do not do today.

19 That's not what we're hearing to discuss.
20 We're here to discuss the California WaterFix. The
21 California WaterFix doesn't --

22 CO-HEARING OFFICER DODUC: Isn't the
23 operations today part of the NAA?

24 MR. MIZELL: The existence of the dams will
25 not change with or without the California WaterFix.

1 CO-HEARING OFFICER DODUC: But it's part of
2 the NAA. Overruled.

3 WITNESS WILDER: I believe your question was
4 about how important the operation of upstream
5 reservoirs was to the species. I'm not sure if you
6 referred to specific species.

7 It's one of many factors that's important to
8 these species.

9 WITNESS WHITE: This is Kristen White with the
10 Bureau of Reclamation. I just want to add that one of
11 the assumptions in moving forward is that the existing
12 2008, 2009 --

13 CO-HEARING OFFICER DODUC: Ms. White, please
14 slow down. I have to keep up.

15 WITNESS WHITE: Sorry. 2008 -- we say these
16 words so often. The 2008, 2009 NMFS -- or sorry, Fish
17 and Wildlife Service and NMFS Biological Opinions still
18 abide, and those RPAs are still moving forward, which
19 includes studying whether or not fish passage is
20 feasible.

21 And so we need to be considering that fact
22 that fish passage at the time this project is
23 constructed will be an active thought. It's based on a
24 feasibility study, but it's something that is moving
25 forward.

1 MR. JACKSON: Well, thank you, because that
2 was one of the places I was going forward. And I'll
3 move back to Dr. Greenwood at this point.

4 Dr. Greenwood, there's already a -- a screen
5 diversion in the Delta in the NAA has been part and
6 parcel of the problem for fish for 50 years at the
7 South Delta pumps, correct?

8 WITNESS GREENWOOD: There is a -- there is a
9 diversion in the South Delta, yes.

10 MR. JACKSON: Have you reviewed the Public --
11 2010 Public Trust Workshop that was part of -- that the
12 Board did that was part of the requirements of the
13 Delta Reform Act?

14 MS. ANSLEY: Objection --

15 CO-HEARING OFFICER DODUC: Do you mean the
16 2010 Flow Criteria Report?

17 MR. JACKSON: I mean the 2010 Public Trust
18 Analysis that was required --

19 CO-HEARING OFFICER DODUC: That would be the
20 flow criteria.

21 MR. JACKSON: Okay, right.

22 WITNESS GREENWOOD: I've -- I've seen it.
23 I've read it, parts of it.

24 CO-HEARING OFFICER DODUC: You haven't
25 memorized it, enshrined it?

1 WITNESS GREENWOOD: I've seen it, yes.

2 MR. JACKSON: Did that identify problems with
3 the -- with the South Delta pumps for listed species?

4 WITNESS GREENWOOD: I can't recall
5 specifically if it did.

6 MR. JACKSON: So insofar as there was a
7 finding that, in order to protect -- if you wanted to
8 protect the Estuary, the Delta, and the Bay during the
9 months of January to June, there was a recommendation
10 by the Board that 75 percent of inflow, unimpaired
11 inflow would do the best job of recovering the Delta...

12 MS. ANSLEY: Is that a question?

13 WITNESS GREENWOOD: I don't believe that this
14 was a recommendation by the Board. I believe that was
15 essentially a staff report.

16 MR. JACKSON: Boy, we spent a lot of time in
17 hearing with -- so for the record, I'm going ask you
18 again, what makes you think that that wasn't a Board
19 product?

20 MS. ANSLEY: Objection, misstates testimony.

21 WITNESS GREENWOOD: I would have to -- I would
22 have to check that again. But -- and I think the --
23 the report -- it's noted in that report that the
24 75 percent is considering only essentially fish that
25 were analyzed, not considering all of the needs for

1 water, not just fish based. So -- and that's an
2 important consideration.

3 MR. JACKSON: So did you do a public trust
4 analysis in this case at all?

5 WITNESS GREENWOOD: Sorry, which case?

6 MR. JACKSON: In this hearing, in your
7 testimony?

8 WITNESS GREENWOOD: I'm providing an opinion
9 regarding reasonable protection based on the
10 incremental effect of the California WaterFix H3+ in
11 relation to the No Action Alternative. That's my main
12 focus.

13 MR. JACKSON: Were you asked to do a public
14 trust analysis of what the Delta needed to recover?

15 MS. ANSLEY: I'm going to object. Perhaps he
16 can define exactly what he means by "public trust."
17 Dr. Greenwood did indeed look at biological impacts,
18 which he's already stated. If there's some wider
19 analysis, you know, in terms of the same definition
20 that the Board uses or something like that -- I think
21 Dr. Greenwood has clearly stated what exactly he
22 already did.

23 CO-HEARING OFFICER DODUC: Mr. Jackson?

24 MR. JACKSON: There were three requirements
25 that were identified for the Board's consideration by

1 your original notice, which was we were to determine
2 whether or not this was in the public interest; we were
3 to determine whether or not this satisfied the public
4 trust; and we were to determine whether or not the
5 change in point of diversion would cause an
6 unreasonable effect on fish and wildlife.

7 CO-HEARING OFFICER DODUC: Yes, those are all
8 of our responsibilities.

9 MR. JACKSON: Right. And I just want to make
10 sure -- what it sounds like this might be offered --
11 his testimony might be offered to cover one of them.

12 MS. ANSLEY: I believe that's been asked and
13 answered. He's clearly stated what his testimony
14 covers. How Mr. Jackson wants to categorize it, that's
15 fine. I think the witness has clearly stated what he
16 actually did. He's here to answer questions about what
17 he did.

18 CO-HEARING OFFICER DODUC: Sustained.

19 MR. JACKSON: So when you use the term
20 "unreasonable effects on fish and wildlife," you are
21 not considering the effects on phytoplankton, the
22 effects on salinity, the effects of all of these
23 things, on the whole suite of -- for want of a better
24 word -- the components of the ecosystem in the Delta
25 and the Bay; is that correct?

1 WITNESS GREENWOOD: I've analyzed the
2 components that are considered, I think, important to
3 the different focal species that were included in the
4 analysis. So in some cases, those do include features
5 such as you mentioned, like salinity, phytoplankton,
6 carbon, as I mentioned in my written testimony, my
7 summary of that testimony. These are things that were
8 considered.

9 You said the word "whole." I mean we've --

10 MR. JACKSON: Excuse me.

11 WITNESS GREENWOOD: We've analyzed the factors
12 of potential importance to the species that I'm
13 considering in the testimony.

14 MR. JACKSON: So insofar as your testimony
15 does not mention other species, you did not address the
16 effects on those species, their food, the food web, and
17 the rest of the components of the ecosystem of the
18 largest estuary on the west coast of the Americas?

19 MS. ANSLEY: Objection, misstates the
20 testimony. Dr. Greenwood testified that he did look at
21 underlying components, which would include food webs
22 and other species to the extent, at the end of the day,
23 it affects local species. So I think that misstates
24 what he just said.

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

1 wish to rephrase?

2 MR. JACKSON: I'm tempted not to, but I'll
3 try.

4 CO-HEARING OFFICER DODUC: As you're thinking
5 about that rephrase, perhaps we could take a break now
6 to let you think about it. I do need to give the court
7 reporter -- she's been very, very --

8 MR. JACKSON: Am I going to get more time?

9 CO-HEARING OFFICER DODUC: You are going to
10 get more time.

11 MR. JACKSON: Then I'd be glad to take a
12 break.

13 CO-HEARING OFFICER DODUC: Let's go ahead and
14 take our break now, and we will return at 11:15.

15 (Recess taken)

16 CO-HEARING OFFICER DODUC: All right. It's
17 11:15. We're back in session.

18 If Mr. Hunt or Mr. Baker will add 30 minutes
19 to the clock -- so far Mr. Jackson's cross-examination
20 is going very smoothly. We'll revisit the time.

21 MR. JACKSON: Thank you.

22 CO-HEARING OFFICER DODUC: Okay.

23 MR. JACKSON: Dr. Wilder, in your testimony,
24 you indicated that you --

25 On Page -- Dr. Wilder's testimony, 1013

1 signed, Page 4.

2 You indicate that, in your opinion, the only
3 mechanism by which CWF can affect waterways upstream of
4 the Delta is through changes in CVP and SWP reservoir
5 operations caused by the project; is that correct, that
6 that's the only effect?

7 WITNESS WILDER: Yeah, I clarified this
8 yesterday, that by "waterways upstream" I mean physical
9 effects to those waterways upstream.

10 MR. JACKSON: So you indicate some rivers that
11 you looked at, the Sacramento on Line 22 -- the
12 Sacramento, the Trinity, the American, the Feather, and
13 Clear Creek. Why did you not list the San Joaquin
14 portion of the upstream waterways?

15 WITNESS WILDER: As I answered yesterday, it
16 was determined during the first part of these hearings
17 that San Joaquin system is unaffected by WaterFix, and
18 therefore I did not essentially want the take up more
19 paper and people's time by including it in.

20 MR. JACKSON: And when was that decided, and
21 by whom?

22 WITNESS WILDER: When was what decided?

23 MR. JACKSON: When was exclusion of the
24 upstream portion of San Joaquin decided not to be
25 relevant to this hearing and by whom?

1 WITNESS WILDER: I never said it was excluded.
2 I simply said that I didn't include it in my written
3 testimony. However, it's throughout the FEIR/EIS; the
4 entire analysis is there.

5 MR. JACKSON: Isn't one of the purposes for
6 the change in point of diversion to take a portion of
7 the Sacramento River underneath the Delta, and mightn't
8 that require more water to come out of the San Joaquin?

9 MS. ANSLEY: It's vague and ambiguous as to
10 "water underneath the Delta."

11 MR. JACKSON: In tunnels.

12 CO-HEARING OFFICER DODUC: Oh, that's what you
13 meant. Okay. Sorry.

14 MR. JACKSON: I don't --

15 WITNESS WILDER: Yes. The project proposes to
16 move water from the Sacramento into -- as part of
17 exports. However, if you look at any of the modeling
18 in the San Joaquin system, it's very clear that there
19 is no effect on any of the flows and rivers.

20 MR. JACKSON: I move to strike that. I mean,
21 it's not in his testimony, and now it's surprise
22 testimony.

23 CO-HEARING OFFICER DODUC: Well, you asked him
24 a question that wasn't in his testimony.

25 MR. JACKSON: I asked him why -- I was trying

1 to find out who told him not to include it in his
2 testimony.

3 CO-HEARING OFFICER DODUC: And Dr. Wilder
4 answered that he just didn't include it.

5 WITNESS WILDER: That's right. It's -- I
6 decided that there was no need to include it. I don't
7 include everything in the EIR in my testimony, it would
8 have been an equally long document if I had.

9 MR. JACKSON: At Line 24, you talk about what
10 you did include and indicate that changes to reservoir
11 operations influence in-stream flows and water
12 temperature in waterways downstream of the reservoir.

13 Wouldn't changes to flows and water
14 temperatures downstream of the reservoir potentially be
15 changed by other -- by the inputs in the San Joaquin?

16 WITNESS WILDER: They could, but if you look
17 at the physical modeling results, there were no changes
18 to reservoir operations in the San Joaquin system.

19 MR. JACKSON: And is there any -- is there any
20 instruction that you've got not to include the
21 San Joaquin? Or it was just your decision that the
22 change in the point of diversion would not affect the
23 operation of the San Joaquin?

24 CO-HEARING OFFICER DODUC: The objection is
25 asked and answered, and it is sustained.

1 MR. JACKSON: In regard to the Trinity River,
2 what analysis did you perform about the operations at
3 Trinity in comparison to -- in comparison to the CWF
4 and the existing situation, existing condition on the
5 Trinity?

6 WITNESS WILDER: In the Trinity River, we look
7 at flows and water temperatures and reservoir storage.

8 MR. JACKSON: Did you look at the record of
9 decision on the Trinity to see, in the event of
10 effects, which system would be favored?

11 MS. ANSLEY: Vague and ambiguous as to "record
12 of decision." Does he mean record of decision as to
13 CWF or FEIR?

14 CO-HEARING OFFICER DODUC: Mr. Jackson?

15 MR. JACKSON: The CWF potentially can change
16 flows or temperatures. And I'm trying to find out, if
17 in fact it does change flows and temperatures, is it
18 allowed to because of the existing record of decision
19 on the Trinity.

20 CO-HEARING OFFICER DODUC: She's asking for
21 clarification on what that record of decision is.

22 MR. JACKSON: Oh, that Trinity Record of
23 Decision of the Bureau of Reclamation that controls
24 operation of the facilities of Trinity, on Trinity
25 Reservoir, Lewiston --

1 MS. ANSLEY: So not --

2 MR. JACKSON: -- and downstream areas. Think
3 Hoopa or the Pacific salmon.

4 MS. ANSLEY: I guess I'm still a little
5 confused of which record of decision. I take it what
6 we're not talking about is the CWF record of decision
7 issued by the DWR in July of 2017. I take it we're
8 talking about Trinity Record of Decision specific to --

9 CO-HEARING OFFICER DODUC: And to the extent
10 that, Dr. Wilder, are you familiar with that record of
11 decision, and can you answer whether or not you
12 reviewed it?

13 WITNESS WILDER: I have seen it. I wouldn't
14 say I'm overly familiar with it.

15 CO-HEARING OFFICER DODUC: Did you consider
16 it, as Mr. Jackson asked?

17 WITNESS WILDER: Let me back up a minute. In
18 my review of flows and water temperatures in the
19 Trinity River, I found no reason to consider it because
20 the effects were not anything short of negligible -- or
21 anything larger than negligible.

22 MR. JACKSON: Under the proposed CWF H3, is
23 there a cold water pool number for Trinity Reservoir at
24 end of September?

25 WITNESS WILDER: And I don't know if our

1 physical modelers know. I'd appreciate if they could
2 tell us.

3 WITNESS REYES: I'm not sure what you mean by
4 "a cold water pool number." That's unclear what you
5 mean by that.

6 MR. JACKSON: Well, isn't there a required
7 end-of-September storage number in the CWF program at,
8 say, Shasta or Oroville?

9 WITNESS REYES: I may refer that question to
10 Ms. White; she can answer.

11 WITNESS WHITE: I'm still very confused of
12 which we're talking about with regards to end of
13 September.

14 I do want to add, though, that the Trinity ROD
15 for the Trinity River Restoration Program was an
16 assumption and included in all modeling, so the No
17 Action as well as the CWF H3+ and the BA H3+ and every
18 model that's been run in recent history.

19 MR. JACKSON: But you are using this in a
20 comparative sense. And what I'm asking at is the
21 Trinity River storage protected in any way by any
22 criteria if you build a CWF H- -- if you build the
23 WaterFix diversions?

24 WITNESS WHITE: Are you asking if the Trinity
25 ROD still applies under CWF H3+?

1 MR. JACKSON: I'm asking -- first of all, I
2 assumed that the Trinity ROD still applies. What I'm
3 asking is do you know how much water you can get out in
4 the flow -- in the times of flow that comes out of
5 Trinity under the ROD. It's an inter-basin transfer.

6 WITNESS WHITE: The Trinity ROD, to my
7 knowledge -- and that was not a document I was involved
8 in developing -- it's doesn't -- it specifies
9 downstream Trinity River conditions. So I'm still
10 confused of what you're asking for.

11 MR. JACKSON: If there is a conflict under CWF
12 between the provisions of the Trinity River Record of
13 Decision and the -- and the flows or temperatures in
14 the water that's being transferred to Whiskeytown and
15 then to Keswick, which of the two takes priority?

16 WITNESS WHITE: I'm still rather confused.
17 But the Trinity River ROD, as you mentioned earlier,
18 would still be in place. So I'm not sure how there
19 will be a conflict if that's an underlying assumption.

20 MR. JACKSON: Is it -- are there -- you're
21 changing the assumptions from the NAA on a number of
22 rivers to help with the CWF.

23 CO-HEARING OFFICER DODUC: But -- I'm sorry.
24 If the underlying assumption is that the record of
25 decision still applies, then it is still there in the

1 modeling for CWF H3+?

2 WITNESS WHITE: That is correct. And I
3 believe it's stated -- and I don't remember if it's
4 Mr. Reyes' testimony or not, but that the upstream
5 criteria of all reservoirs don't change.

6 WITNESS REYES: I would like to add also that,
7 if you looked at -- I put up plots in my testimony that
8 show Trinity River storage at the end of May and end of
9 September. And, you know, compared to the No Action
10 case, it's relatively the same. I mean, the lines are
11 on top of each other, if you recall.

12 MR. JACKSON: And that's if there is no change
13 to take more water out of the Trinity for operational
14 purposes on the Sacramento, correct?

15 WITNESS REYES: It's comparing or looking at
16 the No Action case versus the Cal WaterFix H3+ case.
17 So the project is -- it is assumed in the
18 Cal WaterFix H3+.

19 And what I'm saying is, as far as the storage
20 is concerned, it doesn't seem to have an impact on the
21 storage.

22 MR. JACKSON: In regard to the Feather, as a
23 compare and contrast, there's an indication that
24 there's going to be a time period in the fall in which
25 the Feather flows drop substantially between CWF H3+

1 and NAA, correct?

2 WITNESS WILDER: Sorry. Are you asking me?

3 MR. JACKSON: Actually, Mr. Reyes was --

4 WITNESS REYES: I'm actually unaware of that.

5 But I think Dr. Wilder probably looked at the flows
6 closer than I did.

7 MR. JACKSON: So Dr. Wilder, don't you
8 indicate that in -- that there is a --

9 Could we go to Page 18 of Mr. Wilder's
10 testimony, Line 19.

11 And I'll move to -- first, Line 19 is the area
12 between Keswick and Red Bluff. You say, "the greatest
13 reduction in mean flows at these locations under BA H3+
14 is 26 percent in November"; is that correct?

15 WITNESS WILDER: I'm sorry. Were you
16 referring to the Feather River or the Sacramento River?

17 MR. JACKSON: Right now, I'm talking -- I'd
18 said Feather River, but right now I'm talking about the
19 Sacramento.

20 WITNESS WILDER: And I'm sorry. Could you
21 please repeat the question?

22 MR. JACKSON: Sure. Do you consider, when you
23 say at Line 19, "the greatest reduction in mean flows
24 at the locations between Keswick and Red Bluff under
25 H3+ is 26 percent in November"?

1 WITNESS WILDER: That's what it says.

2 MR. JACKSON: How is that protective of fish,
3 listed or otherwise, in the Sacramento River?

4 WITNESS WILDER: Let me back up a couple steps
5 because there's a lot more that needs to be explained
6 in this. You can't look at one single month and water
7 year type combination to draw conclusions about the
8 species. I need to know a lot more about the -- which
9 life stage is present and which months the difference
10 occurs in -- the difference may occur in, where in the
11 river it occurs.

12 So looking at this, I couldn't tell you
13 whether it's protective or not.

14 MR. JACKSON: Isn't Keswick -- the range
15 between Keswick and Red Bluff important for the listed
16 winter-run salmonid?

17 WITNESS WILDER: Yeah, it's closer to Keswick,
18 in fact, very close to it.

19 MR. JACKSON: Didn't used to be, right? It
20 used to be the -- a whole other river?

21 WITNESS WILDER: The spawning location has
22 been further upstream with climate change, yes.

23 MR. JACKSON: And with less need for spawning
24 habitat because you have -- the NAA has resulted in
25 substantially fewer winter-run over the last 30 or 40

1 years?

2 WITNESS WILDER: I'm a little confused why
3 we're talking about winter-run in November. That's
4 past the spawning period.

5 MR. JACKSON: Spring-run?

6 WITNESS WILDER: The spawning ranges, physical
7 ranges, are far different for spring-run. But in
8 general, they're between Keswick and some distance
9 downstream when they are there.

10 MR. JACKSON: So back to the question. And by
11 the way, during that period of time, the spawning and
12 immigration periods for most of these fish, salmonids,
13 on a bell curve have pretty wide distribution in terms
14 of when they emigrate, correct?

15 WITNESS WILDER: Yes.

16 MR. JACKSON: And so it's entirely conceivable
17 that there are winter-run as well as spring-run in that
18 reach in November?

19 WITNESS WILDER: I'm not sure about spring-run
20 because they don't show up very often, specially in
21 recent years. But winter-run are certainly --
22 certainly could be present during that period, not as
23 eggs.

24 MR. JACKSON: Right. Rearing.

25 WITNESS WILDER: Yes.

1 MR. JACKSON: So you indicate that there's a
2 26 percent decline in mean flows in that reach in
3 November.

4 WITNESS WILDER: No, I indicate that there is
5 a -- the greatest reduction of mean flows for all water
6 year types and months is 26 percent, and that occurs
7 during the month of November.

8 MR. JACKSON: Now, the fact that you didn't
9 say November in specific year types, does that mean
10 that this shows up in most of the year types?

11 WITNESS WILDER: I believe it's one water year
12 type. And I did not write it, but I should have.

13 MR. JACKSON: And are those dry years or
14 critically dry years or all years?

15 WITNESS WILDER: Well, we could pull up the
16 table if you'd like. Why don't we go to SWRCB-102.
17 Actually, I'm sorry. Why don't we go to SWRCB-104 and
18 Appendix -- I think it's 5.A.

19 MR. JACKSON: So before we look at
20 Appendix 5.A, when you wrote this in your testimony,
21 did you make any determination about what magnitude of
22 reduction on any of these rivers would be important?

23 WITNESS WILDER: It's -- making biological
24 determinations requires including a lot of factors, so
25 there's no single value that you can apply to -- to use

1 across all -- all conditions.

2 MR. JACKSON: You indicated that the only
3 upstream changes would be flow, which is what we're
4 talking about here, or temperature, which is somewhat
5 dependent upon flow, correct?

6 WITNESS WILDER: At times, yes.

7 MR. JACKSON: And this is a critical time of
8 year in many -- well, let me back up.

9 Did you take part in the TUCP hearings in '14
10 and '15?

11 WITNESS WILDER: No, I didn't.

12 MR. JACKSON: Did you use any of the TUCP data
13 in your testimony about flow?

14 WITNESS WILDER: No, I only evaluated the
15 California WaterFix.

16 MR. JACKSON: Is there something you want to
17 show me in Appendix 5.A?

18 WITNESS WILDER: Yeah. It may take a while to
19 find it, though. Maybe if I search --

20 MR. JACKSON: Okay. How about if you show it
21 to me somewhere else because I'm another 15 minutes.

22 CO-HEARING OFFICER DODUC: And I've forgotten
23 now. What question was it in response to?

24 MR. JACKSON: The question was in response to
25 his testimony

1 WITNESS WILDER: It's the same question, was
2 which water year type that reduction that I stated was
3 from in the month of November in the Sacramento River.

4 CO-HEARING OFFICER DODUC: You want an answer
5 to that, Mr. Jackson?

6 MR. JACKSON: I'll move on, given the time
7 frame and the time it will take us to find it.

8 In your testimony on Page 14 -- this is again
9 1013 signed -- at the top of the page on Line 1,
10 "...reductions in mean flows in the Feather River,
11 under H3+, up to 35 percent, were in September,"
12 correct?

13 WITNESS WILDER: Yes, that's what it says.

14 MR. JACKSON: Do you consider a reduction of
15 35 percent of the flow in a fall month like September
16 to be -- well, I'm going to use the word -- to be
17 reasonable?

18 WITNESS WILDER: It depends. It really
19 depends on the species that are present. It depends on
20 where in the river this occurs. And it also depends on
21 the specific aspect of the biology that we're looking
22 at. So I can't look at a percent difference and
23 absolutely say that there is or is not a reasonable
24 protection.

25 And the rest of my analyses attempt to go

1 beyond looking at just the mean flows because, as I
2 mentioned in my oral testimony, that is -- that makes a
3 huge assumption that an increase in flows always means
4 a benefit to the species and that a reduction in flows
5 always means an adverse effect to the species, and
6 that's not always true.

7 MR. JACKSON: All right. In the next -- well,
8 I'll do the other one.

9 On Page 11 -- or, excuse me -- on Line 11 of
10 Page 14, you indicate -- or on 13, excuse me, Line 13,
11 "Therefore, I conclude that no significant effects of
12 BA H3 [sic] were observed in any river for any upstream
13 salmonid life stage based on comparisons of mean
14 monthly flows."

15 If it serves as a basis for your testimony,
16 isn't it important?

17 WITNESS WILDER: Is the mean flow comparison
18 important; is that what you're asking?

19 MR. JACKSON: Yes.

20 WITNESS WILDER: It's one of many aspects to
21 arriving at my opinions. So it was certainly
22 considered, but again, it's -- there are -- there are
23 more biologically relevant analyses that one could
24 conduct, and I did, that give you much more information
25 than looking at differences in physical flows.

1 MR. JACKSON: Sir, am I misquoting what you
2 say in your sworn testimony, that your conclusion is
3 based upon the mean flows and nothing else?

4 CO-HEARING OFFICER DODUC: I'm sorry. Could
5 we scroll back to where that is? Mr. Jackson, it was
6 Line 13 --

7 MR. JACKSON: No, it's --

8 CO-HEARING OFFICER DODUC: Where is it?

9 MR. JACKSON: Yeah, starts on Line 13 and ends
10 on Line 15.

11 MS. ANSLEY: Can I -- this is also -- he's
12 answered the question. This also a bit badgering. You
13 know, this is a small section out of a larger section
14 of his testimony. So I think that he's pulling one
15 sentence -- certainly the witness can answer, but he's
16 tried to indicate a couple times that this is one
17 component of his analysis.

18 MR. JACKSON: But the rest of the components
19 of the analysis are not mentioned in his testimony.

20 CO-HEARING OFFICER DODUC: In the entirety of
21 his testimony?

22 MR. JACKSON: There are some -- there is some
23 temperature information, which I'm going to get to, on
24 the Feather River. But I'm just trying to get him to
25 confirm that, for this conclusion and this --

1 CO-HEARING OFFICER DODUC: Okay. Wait. Why
2 am I not seeing the conclusion?

3 MS. ANSLEY: Wrong page.

4 MR. JACKSON: On Page 13, "Therefore, I
5 conclude" -- on Line 13, "Therefore, I conclude" --

6 CO-HEARING OFFICER DODUC: There it is. Okay.

7 MR. JACKSON: He's been talking about
8 reductions in flow. From the beginning, he said that
9 reductions in flow and temperature were the only two
10 things that CWF could change from the NAA.

11 MS. ANSLEY: And Madam Officer, he's also
12 testified in a biological context that's not all that
13 he considered. So those two statements is apples and
14 oranges.

15 And I would point out, as I believe the
16 witness is trying to point out, that this is Section A
17 of a larger section of his testimony, so once sentence
18 on Line 13. And the witness has already been asked and
19 answered to clarify that sentence, and I believe he
20 has.

21 CO-HEARING OFFICER DODUC: Hold on a second.

22 Dr. Wilder please expand upon what you mean in
23 this sentence, starting on Line 13 ending on Line 14.
24 You have stated in answer to Mr. Jackson's questions
25 previously that the reduction in mean flow, mean

1 monthly flow in the months that you pointed out were
2 not the only thing you considered. Yet this sentence
3 seems to imply that those observed reductions
4 contributed to your conclusion of no significant
5 effects. I can see the confusion. So perhaps if you
6 could clarify.

7 WITNESS WILDER: Yeah, well, Ms. Ansley
8 actually was correct in that this is one of multiple
9 analyses. And if we can scroll up to Page 12, Line 13,
10 it says, "Three tools were used to evaluate
11 flow-related effects of the project on salmonids," and
12 I listed them there.

13 And we can scroll down to Line 24. "Because
14 the direction of a change in flow rate is not always
15 indicative of the direction of the effect on the
16 species," and some parentheticals, "the analysis of
17 mean monthly or mean daily modeled flow rate was less
18 preferred than SacEFT and SALMOD," the two other tools
19 that are listed in my previous sentence starting
20 Line 13.

21 MR. JACKSON: So may I --

22 CO-HEARING OFFICER DODUC: Please.

23 MR. JACKSON: -- Your Honor?

24 The salmonid [sic] doesn't affect the Feather
25 River, does it? I mean, that's not a tool for the

1 Feather.

2 WITNESS WILDER: That's right. If you go on
3 to --

4 MR. JACKSON: SALMOD.

5 WITNESS WILDER: SALMOD, yes -- at the top
6 of -- I knew what you were talking about.

7 The top of Line 13, "When" -- Line 1, "When
8 neither SacEFT nor SALMOD was available, the analysis
9 relied only on a comparison of mean flows," and it made
10 this assumption here.

11 MR. JACKSON: So we're back to mean flows.

12 WITNESS WILDER: Right. There were other
13 analyses that -- so this, what I'm referring to here,
14 starting on Page 12, Line 13, is the EIR/EIS, Final
15 EIR/EIS. The document goes on to discuss other
16 analyses that are done, but I'll focus on the -- your
17 original question, which is what is -- could you repeat
18 that question, just make sure we're all clear?

19 MR. JACKSON: Could you read it back?

20 CO-HEARING OFFICER DODUC: Let's stop the
21 clock while we do this so that Mr. Jackson doesn't run
22 out of time.

23 (Record read)

24 MR. JACKSON: SALMOD is only designed for the
25 Sacramento River from Keswick, I believe, to the Bend

1 Bridge; is that correct?

2 WITNESS WILDER: Red Bluff, but yes.

3 MR. JACKSON: So if 35 percent in the fall
4 there's less flow in the river and you indicate that
5 there are lesser amounts in other months, the CWF is
6 having a substantial effect in the fall on the
7 American, the Sacramento, and the Feather, is it not?

8 WITNESS WILDER: I never said that, no.

9 MR. JACKSON: So let's try the words that you
10 use.

11 What does, in your testimony, "minor effect"
12 mean quantitatively?

13 WITNESS WILDER: Like I previously said, it's
14 hard to assign values to biological effects due to
15 the -- just nature of biology it's highly variable.

16 MR. JACKSON: So when you use the word "minor"
17 throughout your testimony, what do you mean by it? Do
18 you have any quantitative -- any quantitative meaning
19 at all by the word, or just -- you're just using the
20 word?

21 WITNESS WILDER: There's no hard and fast rule
22 of thumb, but you know, in general, it's somewhere
23 between -- I don't know. I can't conjecture an actual
24 value because it would really depend on the life stage,
25 the location, and the time period.

1 MR. JACKSON: Well, aren't we talking about a
2 life stage, a time period in this analysis of your
3 testimony in regard to the Feather River in November?

4 WITNESS WILDER: Yes, and there's one thing
5 that I forgot to add, and that is the frequency of
6 that -- that reduction.

7 MR. JACKSON: Do you know what the reduction
8 is in September -- because it's not in this document.

9 WITNESS WILDER: On -- as a whole, across all
10 water types, no. I do know that this one water year
11 type out of five, it can be reduced by up to 35
12 percent.

13 MR. JACKSON: And October?

14 WITNESS WILDER: If you'd like to pull up the
15 figures -- the tables, we can look at it.

16 MR. JACKSON: Well, I'm asking you if you know
17 as you sit here. If we pull up tables, I'm going to
18 the hit with a gavel.

19 CO-HEARING OFFICER DODUC: I can't possibly
20 aim that well from here, so you're safe.

21 MR. JACKSON: You've got more gavels than one,
22 so -- I don't want Mr. Shutes to get hurt.

23 WITNESS WILDER: So, no, I can't recite every
24 model output for every month and water year type and
25 every river location.

1 MR. JACKSON: So it's fair to say that there
2 is less water under CWF than NAA in the fall on the
3 Trinity -- or excuse me -- on the Feather?

4 WITNESS WILDER: I think it's fair to say that
5 there's less -- that flow is lower in at least one
6 water year type in September on the Sacramento -- or
7 I'm sorry -- on the Feather. And I would need to look
8 at the water level outputs to tell you much more than
9 that.

10 MR. JACKSON: So if we went to Page 14 and the
11 top, in the Lower American -- you see on Line 2,
12 Page 14?

13 Do you see that it indicates on the American
14 about 22 percent of all the combination of months and
15 water year types had a mean flow reduction between NAA
16 and BA H3+ of greater than 5 percent? Do you see that?

17 WITNESS WILDER: Yes.

18 MR. JACKSON: And that's true, right?

19 WITNESS WILDER: If I did my calculations
20 correctly.

21 MR. JACKSON: Okay. Do you consider a greater
22 than 5 percent change in flow rate on the American
23 River to be a significant change?

24 WITNESS WILDER: As I mentioned, I couldn't
25 tell you the answer to that in this case.

1 I am trying to find -- if we can scroll to
2 Page 29, the footnote on the very bottom.

3 So 5 percent was used as a value simply to
4 characterize changes in flows. It was never meant to
5 be any sort of strict threshold. So that's what we
6 used in the characterization of the flows that I --
7 that you just cited.

8 MR. JACKSON: And that's the only quantitative
9 measurement you have, 5 out of the -- it's not a strict
10 threshold, and of course, 35 percent's a lot more than
11 that. I'm just trying to get an idea of what you
12 considered to be important biologically.

13 MS. ANSLEY: Madam Hearing Officer, if I might
14 say and object that he's leading -- he's asking
15 questions of the witness, who has offered to open up
16 the table and take a look -- he's asking him questions
17 off the top of his head when our witness has repeatedly
18 stated that he's happy to open up the analysis and
19 explain the bases.

20 So I feel that some of these questions are --
21 yeah, I feel that some of them are not only sort of
22 vague and ambiguous, but he's answered the question.
23 And what we're doing is confirming what he's written in
24 his testimony a lot of the ways.

25 CO-HEARING OFFICER DODUC: Well, what

1 Mr. Jackson -- or at least I -- based on his last
2 question, and I'm curious too, because we're seeing,
3 you know, 35 percent changes in the monthly mean. And
4 you determined, however, that there is not a
5 significant difference.

6 So I think Mr. Jackson is trying to ascertain
7 if you had a threshold that you would consider
8 significant.

9 Did I read that correctly, Mr. Jackson?

10 MR. JACKSON: Yes.

11 CO-HEARING OFFICER DODUC: And if opening up
12 the analysis is the way to answer that question, then
13 we will open up the analysis. But as someone who
14 conducted the analysis and provided the testimony,
15 what, if any threshold do you have in mind -- did you
16 have in mind?

17 WITNESS WILDER: And the answer is, again, it
18 depends on both the magnitude and the frequency of
19 any -- any differences between the two values. So I
20 don't have a strict threshold. It really depends on
21 the -- when the species is present in a given place,
22 that these -- the overlap of any changes in
23 temperatures -- or flows, in this case, changes in
24 flows when a species is present depends on the life
25 stage that's present at the time, and it depends on the

1 magnitude and the frequency of any changes that may
2 occur during that period.

3 CO-HEARING OFFICER DODUC: And your
4 conclusions are based on the myriad of those issues --

5 WITNESS WILDER: That's right.

6 CO-HEARING OFFICER DODUC: -- taken together?

7 WITNESS WILDER: That's right.

8 CO-HEARING OFFICER DODUC: Mr. Jackson?

9 MR. JACKSON: Yes, there is --

10 CO-HEARING OFFICER DODUC: Do you have further
11 questions for Dr. Wilder, or are we moving on to
12 Dr. Greenwood?

13 MR. JACKSON: I do. I'll try to hurry them up
14 because we've been through this. And then I have
15 questions for Dr. Greenwood.

16 And I am cognizant of the fact that I'm going
17 to be followed by environmental groups. And I do know
18 that some of the same territory would be covered by
19 them, and I will try not to duplicate that in the hopes
20 that -- well, in the knowledge that they will be
21 thorough.

22 But I would like another, perhaps, 40 minutes.

23 CO-HEARING OFFICER DODUC: Let's give you 30,
24 and we'll take our lunch break then.

25 MR. JACKSON: Okay.

1 CO-HEARING OFFICER DODUC: And you, I'm sure,
2 might want to seek out Mr. Obegi, who will be
3 conducting cross-examination after you. And you might
4 confer with him regarding any questions you are not
5 able to get to in the next 30 minutes.

6 MR. JACKSON: I seek out Mr. Obegi's help
7 often, and I will continue to do so.

8 CO-HEARING OFFICER DODUC: I'm sure that level
9 of coordination is not novel and is much appreciated.

10 MR. JACKSON: There is -- you have something
11 you wanted to --

12 MR. SHUTES: Yes. When we conclude, I would
13 like to get back to the table issue.

14 CO-HEARING OFFICER DODUC: Correct.

15 So Mr. Jackson could perhaps leave a few
16 minutes at the end for us to re-touch base with
17 Mr. Shutes regarding his request. But let's shoot for
18 12:30 so that we can take our lunch break then.

19 MR. JACKSON: Dr. Wilder, is your
20 conclusion -- and I'm going now to your -- to Page 6,
21 Line 20 to Page 7, the whole page. So I'm going to go
22 through some terms you use in your conclusions.

23 "CWF H3 [sic] will result in minor changes to
24 upstream flows and habitat suitability for upstream
25 life stages of winter-run, spring-run, and...late

1 fall-run Chinook salmon and CCV steelhead."

2 You indicate that it will result in minor
3 changes to upstream flows. Given the magnitude of the
4 reduction in flows in the fall, how could you come to
5 the conclusion that it's minor?

6 WITNESS WILDER: That looks across all water
7 year types and all months combined. And on the whole,
8 the effects are minor.

9 MR. JACKSON: And that's an 82-year period?

10 WITNESS WILDER: Yes, that's correct.

11 MR. JACKSON: For a -- I'm going to do
12 something kind of anthropocentric, but -- if I got the
13 term right.

14 If I were a salmon, I could die in three
15 months, right, from lack of water?

16 WITNESS WILDER: Yeah, that's correct.

17 MR. JACKSON: So from my point of view, the
18 effect would be unreasonable, wouldn't it?

19 MS. ANSLEY: Objection, assumes a lot of facts
20 not in evidence. That's a very incomplete hypothetical
21 as to why Mr. Jackson, the salmon, is dying at that
22 particular time.

23 CO-HEARING OFFICER DODUC: But, well, you can
24 see that, yeah, it's significant.

25 MR. JACKSON: Is that his answer or -- it's

1 better if it's yours, but I'd like to know if he agrees
2 with your --

3 MS. ANSLEY: I think there's --

4 MR. JACKSON: -- finding of significance.

5 MS. ANSLEY: I object that it's an incomplete
6 hypothetical, assumes a lot of facts in evidence.

7 CO-HEARING OFFICER DODUC: Sustained.

8 But I did have a pleasant thought of you being
9 a salmon.

10 MR. JACKSON: Yes, I know, particularly under
11 those circumstances.

12 CO-HEARING OFFICER DODUC: But not dying from
13 lack of water.

14 MR. JACKSON: You say, in coming to the
15 conclusion it's minor, that you're considering
16 operational criteria and real-time operational
17 adjustment; is that correct?

18 WITNESS WILDER: Yes, that's correct.

19 MR. JACKSON: What mechanism would the fish
20 use to force real-time operational adjustments?

21 MS. ANSLEY: Again, objection, vague and
22 ambiguous as to what mechanism the salmon would use to
23 force real-time operations. I think that could be
24 stated more clearly.

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

1 is a --

2 MR. JACKSON: Sure. Well, let me try it this
3 way.

4 In the NAA, there have been real-time
5 operational adjustments for 50 years, correct?

6 MS. ANSLEY: Objection, the NAA as an
7 operational scenario is not current existing
8 conditions. That said, I'd let the witness answer
9 about real-time operations now or, if he knows, in the
10 future.

11 CO-HEARING OFFICER DODUC: Yes.

12 MR. JACKSON: In terms of real-time
13 operations, do we have a real-time operational chart
14 that I could check?

15 WITNESS WILDER: Real-time operations
16 currently exist.

17 MR. JACKSON: And those real-time operations
18 have resulted in the condition of the salmon on most of
19 the rivers in the Central Valley; the steelhead, the
20 ones that you list right before this protection of
21 real-time adjustments, have declined by 90 percent or
22 more, correct?

23 MS. ANSLEY: Objection, assumes facts in
24 evidence.

25 CO-HEARING OFFICER DODUC: He asked --

1 MR. JACKSON: I don't know whether he's
2 reviewed our evidence or NRDC's evidence or anybody's
3 evidence, but that's what it says.

4 CO-HEARING OFFICER DODUC: Let's not argue --
5 let's not make those arguments now. Overruled.

6 Dr. Wilder, answer to the extent that you know
7 that information.

8 WITNESS WILDER: Yeah, I wouldn't attribute
9 the decline of the species solely due to one factor.
10 There are multiple factors going on that have led to
11 the decline of the species.

12 MR. JACKSON: But we're talking about water
13 flow and water temperature, correct? Those are the
14 only things you looked at for your testimony here?

15 WITNESS WILDER: Those are the two physical
16 force things that have driven the rest of my analysis,
17 yes.

18 MR. JACKSON: So is your -- given this
19 condition, is it your testimony that will real-time
20 operations in the past have reasonably protected these
21 species?

22 CO-HEARING OFFICER DODUC: Do you offer an
23 opinion on that, Mr. Wilder -- Dr. Wilder?

24 WITNESS WILDER: No, I'm not prepared to make
25 a statement or opinion about past real-time operations.

1 MR. JACKSON: I have a couple of -- I think
2 I'll restrict it to one more line of questioning for
3 Mr. Wilder.

4 The -- well, first, before I go to that, you
5 make the same finding for temperature, that operational
6 criteria in real life, real-time operational adjustment
7 will reasonably protect the salmonids.

8 When you use the term "reasonable," are you
9 using it as it exists in the Water Code, or are you
10 talking about reasonable from your point of view?

11 WITNESS WILDER: As I mentioned during my oral
12 testimony, it's a culmination of when a species is
13 listed, I use a bar that's near the ESA that's used
14 for -- in the BiOps when the species is -- and as well
15 as other things, like Fish and Game Code, et cetera.
16 When it's not in the ESA, I use more of a standard
17 reasonableness that's my own.

18 MR. JACKSON: And when you determine that
19 changes in upstream flow and water temperatures are
20 unlikely to have a population level effect on these
21 critters -- excuse me -- on these listed fish, are you
22 using it -- have you done any analysis of your own in
23 regard to the population level effect of these changes
24 in the Cal -- from NAA to the Cal WaterFix?

25 WITNESS WILDER: Certainly for winter-run we

1 have a number of life cycle models. That is the
2 purpose of a life cycle model is to tell you what the
3 effect would be on the involved population.

4 When you look at the results of those models,
5 you find that there is generally no effect of upstream
6 flow or water temperature. For the other species it's
7 -- they primarily rely on the analyses that were done
8 in the EIR/EIS as well as the BA and the Biological
9 Opinion and the ITP.

10 MR. JACKSON: So you're relying on a CEQA/NEPA
11 comparison to determine whether or not it is reasonable
12 to move the pumps from the South Delta to the North
13 Delta, some of them?

14 WITNESS WILDER: The analyses used for the
15 NEPA/CEQA analysis, but certainly not the conclusions
16 necessarily driven from the NEPA/CEQA analysis.

17 MR. JACKSON: So you use to data and then make
18 a decision on reasonableness as you see it, correct?

19 MS. ANSLEY: Objection, asked and answered.
20 He already answered what standards he's using for
21 either listed or unlisted species. This is the same
22 question over.

23 MR. JACKSON: It's the same question in regard
24 to listed species. I agree that he has already
25 testified that everything that is not listed he just

1 determines how to use the word.

2 CO-HEARING OFFICER DODUC: All right.

3 Overruled.

4 Answer please.

5 WITNESS WILDER: Ultimately it -- the opinions
6 that I arrived at are my own based on my expertise and
7 experience in Central Valley water operation -- water
8 operations with respect to the effects of fish.

9 MR. JACKSON: Thank you.

10 Dr. Greenwood, on -- this is testimony 1012.

11 And I will move to Page 3, Line 18 to 20.

12 You say that CWF H3+ will maintain and
13 potentially increase this existing reasonable
14 prevention. And you're referring to the -- well, what
15 are you referring to by the "existing reasonable
16 protection"?

17 WITNESS GREENWOOD: In this case, it's
18 referring to reasonable protection from entrainment
19 risk at the South Delta export facilities.

20 MR. JACKSON: So have you reviewed the history
21 of the existing reasonable protection at those
22 facilities over the last 50 years?

23 WITNESS GREENWOOD: My consideration there and
24 my conclusions are informed by the inclusion of the
25 existing requirements for South Delta entrainment

1 reduction under 2008-2009 Fish and Wildlife Service and
2 National Marine Fishery Service Biological Opinions,
3 which, based on my understanding and looking at the
4 data, indicate reductions for the South Delta
5 entrainment following the issuance of those biological
6 opinions.

7 MR. JACKSON: Is it reasonable, in your
8 opinion, to conceptualize new -- three new sets of
9 screens on the main stem Sacramento River that will not
10 cause a decline in the number of -- in the population,
11 given a history of the screened South Delta exports for
12 the last 50 years, in your opinion?

13 WITNESS GREENWOOD: I think the -- with the
14 North Delta intakes on the Sacramento River, part of
15 the -- I think the considerations for those is that
16 they will be situated on a river where screening
17 potentially could be more effective because of the
18 types of screen that could be used on the Sacramento
19 River more effectively than the existing South Delta
20 facility's screening mechanism. So --

21 MR. JACKSON: You used the term "existing
22 reasonable protection," and you were talking about the
23 South Delta, correct?

24 WITNESS GREENWOOD: Yes.

25 MR. JACKSON: So from -- is it your opinion

1 that there is no relationship between historical
2 protection by screening in the South Delta that is
3 relevant to this conceptual North Delta situation?

4 WITNESS GREENWOOD: Sorry. Can you -- can you
5 repeat the question?

6 MR. JACKSON: Does the South Delta screening
7 process that you call "existing reasonable protection"
8 have any lessons for you in regard to moving -- in
9 regard to the effectiveness of the conceptual screens
10 at the North Delta?

11 MS. ANSLEY: Objection as to "lesson."
12 Perhaps he could just ask what he means by the term
13 "existing reasonable protection" as it pertains to the
14 sentence.

15 CO-HEARING OFFICER DODUC: I'm trying to
16 understand your question myself, Mr. Jackson.

17 MR. JACKSON: Dr. Greenwood says, on Line 19
18 that --

19 CO-HEARING OFFICER DODUC: I see it.

20 MR. JACKSON: -- CWF will -- okay. You see
21 it.

22 CO-HEARING OFFICER DODUC: Right.

23 MR. JACKSON: What about H3+ will maintain and
24 potentially increase this existing reasonable
25 protection at the South Delta pumps?

1 WITNESS GREENWOOD: So my consideration of
2 reasonable protection under existing is the,
3 essentially, pumping restrictions that are applied by
4 the 2008, 2009 Biological Opinions. So those
5 biological opinions have criteria in them for reducing
6 entrainment which have provided protection greater than
7 what was previously in place before the issuance of
8 these biological opinions.

9 CO-HEARING OFFICER DODUC: Do I understand
10 it -- let me try, Mr. Jackson -- that you are
11 attempting to say that, by reducing South Delta
12 exports, you are reducing the entrainment of fish?
13 Because CWF H3+ has the North Delta diversion.

14 WITNESS GREENWOOD: Right.

15 CO-HEARING OFFICER DODUC: That it would lead
16 to reducing South Delta exports, and therefore, it
17 would maintain or perhaps increase the existing
18 protection against fish entrainment and other impacts
19 associated with southern diversion?

20 WITNESS GREENWOOD: That's right, yeah.

21 CO-HEARING OFFICER DODUC: Is that what you
22 meant?

23 WITNESS GREENWOOD: That's what I meant. With
24 this -- with the construction and operation of the
25 three intakes in the north, there's less South of Delta

1 exports, which therefore has the potential to increase
2 the level of protection in the South Delta.

3 What I'm saying is that the South of Delta,
4 under existing conditions, has protective criteria from
5 the 2008, 2009 Biological Opinions. That's in place,
6 and it's in place under the No Action Alternative in
7 our analysis.

8 With the North Delta diversions, there's a
9 potential to go beyond that level of protection that
10 currently is in place.

11 MR. JACKSON: That assumes a couple of things,
12 doesn't it, that you will take no more water in total
13 from the combination of the South Delta pumps and the
14 new North Delta pumps and that the new North Delta
15 pumps will be completely effective?

16 WITNESS GREENWOOD: That -- that doesn't
17 assume those things. This opinion is based on the
18 analysis that I have in my -- in my testimony, in my
19 written testimony. So this executive-level overview is
20 based on what I've laid out in my written testimony.

21 So from our modeling results, we show the
22 South Delta entrainment could be, for example -- not
23 sure for Delta Smelt -- could be similar indicators of
24 entrainment risk, similar or less, under the -- under
25 CWF H3+. That's the analysis I'm trying to highlight

1 there.

2 MR. JACKSON: Does your analysis assume the
3 same level of overall exports of water from the Delta
4 that is presently taking place?

5 WITNESS GREENWOOD: For this particular -- for
6 this particular section of the executive level
7 overview? This is only focusing on the South of Delta
8 entrainment risk portion of the overall analysis,
9 overall testimony. So it's trying to zero in on that
10 particular thing. It's not considering overall
11 exports, for example.

12 MR. JACKSON: Call your attention to the next
13 sentence in the next paragraph.

14 You're now talking about the North Delta
15 diversions, and you indicate that an extensive pre- and
16 post-construction study project will provide reasonable
17 protection.

18 And my question in that regard is you haven't
19 done the pre -- you certainly haven't done the
20 post-construction study project program, right?

21 WITNESS GREENWOOD: Right.

22 MR. JACKSON: And have you done the
23 pre-construction study program?

24 WITNESS GREENWOOD: Pre-construction study
25 program would be done leading up to operations, so

1 during -- during the construction period. So that
2 framework of pre- and post-construction study program
3 is, as it says in my written testimony here, intending
4 to reduce the uncertainty regarding the potential
5 effects of the screens by having this process in place
6 to inform the final screen design and then to make
7 adjustments to adaptive management based on the
8 effects, for example, during the testing period.

9 So that framework is the -- is the important
10 thing. And it's what would be done, as I say, leading
11 up to the testing period and then operations.

12 MR. JACKSON: Is there anything about these
13 studies that are going to be done which would happen
14 before the approval of the change in point of
15 diversion?

16 WITNESS GREENWOOD: Sorry. Can you repeat
17 that again?

18 MR. JACKSON: Yeah. Is there anything about
19 this program that you're talking about and perhaps
20 relying on to find reasonable protection that will take
21 place before the requested change in point of
22 diversion?

23 WITNESS GREENWOOD: I don't know about the
24 timeline, the specifics.

25 MR. JACKSON: Is there anything about these

1 pre- and post-construction study programs that would be
2 informed by any changes to D1641 in the new Water
3 Quality Control Plan?

4 WITNESS GREENWOOD: I don't know.

5 CO-HEARING OFFICER DODUC: Wouldn't that
6 depend on the timing, which he has said he doesn't
7 know?

8 MR. JACKSON: I'm asking, if these are
9 important, why don't we have them before we make this
10 decision?

11 CO-HEARING OFFICER DODUC: Dr. Greenwood, I
12 assume your answer would be the same, that you don't
13 know the timing of these studies?

14 WITNESS GREENWOOD: All I know is that this
15 would be undertaken prior to -- they are required to be
16 undertaken prior to the operations to inform --

17 MR. JACKSON: Which at the earliest date would
18 be 2032, correct?

19 WITNESS GREENWOOD: Well, to that extent, yes,
20 that's the date that's been given. But as far as the
21 specifics or the time line, I don't know how that might
22 relate to these other processes.

23 MR. JACKSON: I'm going to do a Hail Mary here
24 and count on my friends in the audience and their
25 remaining cross-examination if you give the remaining

1 amount of my time to Mr. Shutes's request.

2 CO-HEARING OFFICER DODUC: (Nods head up and
3 down)

4 MR. JACKSON: I would, for the record, point
5 out that I've got -- this is very extensive testimony
6 and that I really believe I didn't have enough time.

7 CO-HEARING OFFICER DODUC: And for the record,
8 we gave you the three hours you requested.

9 MR. JACKSON: I understand that, but I
10 probably overestimated [sic] the number of objections
11 and the amount of searching that -- and, well, the
12 witnesses.

13 And so for other people who --

14 CO-HEARING OFFICER DODUC: I would encourage
15 you to coordinate with Mr. Obegi and others coming up
16 because, for one, I would expect NRDC would be covering
17 some similar grounds that you would be touching on.

18 MR. JACKSON: I think they will.

19 CO-HEARING OFFICER DODUC: Yes.

20 Mr. Shutes?

21 MR. SHUTES: So returning to the issues that
22 we discussed about a table and considering the table
23 that's in the ITP, I still believe it would be useful
24 to have a comprehensive table to outline what the
25 project is and then also outline the source of the

1 rules for the project so that if, in fact, some of
2 those sources were to change -- for example, the
3 biological opinions, which I think Mr. Obegi will be
4 getting to potential changes in and which we know
5 changes are being considered in -- we'll know where the
6 potential changes might be and what it might prudent
7 for the Board to consider in including the permit
8 terms.

9 And therefore, I request that the Department
10 of Water Resources put together as complete,
11 up-to-date, and clean a table as possible that shows
12 the measures, the requirements, and the source of each
13 of the measures so that we can all get a better
14 understanding of what is and what is not included in
15 the project.

16 CO-HEARING OFFICER DODUC: Thank you, Mr. Shutes.
17 I, for one, would find that helpful.

18 Mr. Mizell, do you have any concerns about
19 that request?

20 MR. MIZELL: I would like to point out that we
21 actually went over the table that he's requesting.
22 It's in SWRCB-177 at Page 178. And five minutes after
23 the last time he made this request, we actually
24 answered a fair number of questions on that table.

25 CO-HEARING OFFICER DODUC: And that table

1 includes the source of the criteria and rules that he
2 has requested?

3 MR. MIZELL: The table does not include the
4 source, but if you cross-compared it to D1641 or the --

5 CO-HEARING OFFICER DODUC: I do not want to
6 cross-compare. I would like a single table with that
7 information. It is in your interest, Mr. Mizell, to
8 help all of us better understand what criteria is being
9 operated under as part of CWF H3+ or at least what's
10 being considered.

11 MR. MIZELL: I will convey that direction to
12 the project team.

13 CO-HEARING OFFICER DODUC: And when might we
14 expect to have that information?

15 MR. MIZELL: I would need to give you an
16 update to that this afternoon.

17 CO-HEARING OFFICER DODUC: Thank you very
18 much.

19 MR. JACKSON: And as I have two minutes left.
20 So in that two minutes, I would like to make a request
21 that you not make this decision until all of the --
22 until we know a lot more than we know today about
23 what's happening with this project.

24 This change in point of diversion is probably
25 one of the most critical changes ever made, to move

1 into the listed salmon migration route away from the
2 South Delta.

3 CO-HEARING OFFICER DODUC: If that is a
4 further request to stay this proceeding, the request is
5 denied.

6 However, I concur with you this is a very
7 important decision, that we need to have information on
8 the record to support whatever decision we make,
9 whether it be to deny the request or approve and, if to
10 approve, then what conditions would be necessary as
11 associated with those -- with that approval to protect
12 beneficial uses, to ensure no unreasonable impacts, and
13 to ensure protection of water right users.

14 So I concur it's important. I concur we need
15 to have, by our determination, adequate information in
16 the record -- in the official record, the official
17 evidentiary record before us upon which to make that
18 decision.

19 All right. Thank you both.

20 MR. SHUTES: Thank you.

21 CO-HEARING OFFICER DODUC: Are there any other
22 housekeeping items before we adjourn for lunch?

23 MS. WOMACK: I wanted to advise Mr. Jackson,
24 I've been following your lines and --

25 CO-HEARING OFFICER DODUC: And you can discuss

1 it with him separately.

2 MS. WOMACK: Right. But he could join in with
3 my -- is what you're saying is -- no? No? You make
4 sure -- he can make sure his questions, if they're not
5 answered --

6 CO-HEARING OFFICER DODUC: I leave it to him
7 to coordinate with whomever who is coming up in the
8 cross-examination. I'm sure Mr. Jackson will find a
9 way.

10 MS. WOMACK: Okay. Just wanted to make sure.
11 Thank you.

12 CO-HEARING OFFICER DODUC: Ms. Des Jardins?

13 MS. DES JARDINS: Thank you. I just wanted to
14 join in the request of Chris Shutes.

15 CO-HEARING OFFICER DODUC: I have already
16 officialized that request.

17 MS. DES JARDINS: Thank you very much,
18 Madam Chair.

19 CO-HEARING OFFICER DODUC: All right. We will
20 take our lunch break, and then we'll return at 1:30.
21 You just cheated yourself out of four minutes.

22 We will hear from Mr. Obegi.

23 (Luncheon recess taken at 12:34 p.m.)

24 AFTERNOON SESSION

25 ---o0o---

1 (Whereupon, all parties having been
2 duly noted for the record, the
3 proceedings resumed at 1:31 p.m.)

4 ---o0o---

5 CO-HEARING OFFICER DODUC: All right. Let's
6 stop all cheer and merriment. It is 1:30. We are back
7 in session. I assume there are housekeeping items we
8 need to address.

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

10 Daniel O'Hanlon, for San Luis and
11 Delta-Mendota Water Authority, Group 4.

12 Our panel is to immediately follow
13 petitioners' panel. That's the second in order of
14 direct testimony. I've told my witnesses to be ready
15 for appearance on Friday. It's looking increasingly
16 unlikely that that will happen on Friday.

17 CO-HEARING OFFICER DODUC: Correct. We still
18 have Panel 3 to go through. So I will just right now
19 say we will not get to you Friday. And if that means
20 we break early on Friday, whoo-hoo.

21 MR. O'HANLON: Great. Thank you very much.

22 CO-HEARING OFFICER DODUC: Any other
23 housekeeping matters?

24 MS. WEHR: Good afternoon, Ellie Wehr for
25 Grassland Water District. We're Group No. 44, and

1 we're scheduled to present our panel of three witnesses
2 after San Luis Delta-Mendota Water Authority. I wish
3 to inform you that one of my witnesses has a college
4 class to teach on Monday morning until 2:00 o'clock.
5 And I'm doing my best to find alternative panels to
6 switch with, and I'll inform the Hearing Officers as
7 soon as possible in the event that we are scheduled to
8 present on Monday morning.

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

11 All right. Not seeing anyone else, Mr. Obegi,
12 welcome back. You had estimated two to four hours when
13 we first asked for estimates. Given that we've had
14 several days of cross-examination now, are you able to
15 better fine-tune your questions, and can you give me a
16 better estimate?

17 MR. OBEGI: Thank you. Doug Obegi for NRDC,
18 et al. Surprisingly, most of my questions have not
19 been asked thus far of this panel. So I still believe
20 the estimate is two to four hours. It really will
21 depend on the amount of time taken for either
22 objections or answers. But I will attempt to move
23 quickly through it. If you would like, I can begin
24 with an overview of the questions.

25 CO-HEARING OFFICER DODUC: Sure. Well, as in

1 the case of Mr. Jackson, we'll start you off with the
2 two hours. And then, upon showing of good cause, we
3 will further add to that time.

4 MR. OBEGI: I greatly appreciate it, and I
5 hope that I earn the Hearing Officers trust that
6 additional questioning will be relevant and helpful.

7 With that, I do have six areas of questions.
8 The first is the reasonable protection standard for
9 fish and wildlife that's the basis of testimony. The
10 second is impacts to salmon in the Delta. The third is
11 impacts to salmon upstream. The fourth is impacts,
12 reasonable protection to longfin smelt. The fifth,
13 impacts and reasonable projections of Delta smelt. and
14 the last is real-time operations and modeling
15 questions.

16 CO-HEARING OFFICER DODUC: Thank you.

17 MR. OBEGI: Thank you very much.

18 CROSS-EXAMINATION BY MR. OBEGI

19 MR. OBEGI: Let's begin with questions for
20 Dr. Greenwood. If you'd please pull up DWR-1012, which
21 is the witness's written testimony.

22 And I'd I like to start by discussing on Page
23 3, Line 19, the witness's reference to existing
24 reasonable protection.

25 Thank you. I just want to lay the foundation.

1 Your prior testimony, Dr. Greenwood, has been that you
2 have done a comparative analysis looking at the
3 No Action Alternative and comparing the effects of
4 WaterFix with existing regulatory standards; is that
5 correct?

6 WITNESS GREENWOOD: Yes.

7 MR. OBEGI: Is it your understanding that
8 existing -- that the No Action Alternative provides
9 reasonable protection for Fish and Wildlife?

10 WITNESS GREENWOOD: I'm mentioning it in this
11 particular incident in relation to the South Delta
12 export facilities.

13 MR. OBEGI: Yes, but the basis of your
14 testimony is a comparison to existing conditions, which
15 necessarily begs the question of whether existing
16 conditions provide reasonable protection for fish and
17 wildlife.

18 MS. ANSLEY: Objection, misstates the
19 testimony as to "existing condition."

20 CO-HEARING OFFICER DODUC: Ms. Ansley, I'm
21 sorry. I did not hear that objection at all.

22 MS. ANSLEY: Objection, misstates
23 Dr. Greenwood's testimony. He did not say that he made
24 any comparison to existing conditions.

25 MR. OBEGI: If we substitute the word "No

1 Action Alternative"?

2 CO-HEARING OFFICER DODUC: So let's do that.

3 WITNESS GREENWOOD: Can you repeat it just
4 with that substitution?

5 MR. OBEGI: Is it your professional opinion
6 that the No Action Alternative provides reasonable
7 protection for fish and wildlife?

8 WITNESS GREENWOOD: As I've been -- you
9 brought it up in relation to the South Delta exports,
10 which is where I've provided that context. So here I
11 express the opinion that the existing requirements
12 essentially of the National Marine Fishery Service and
13 Fish and Wildlife Service biological opinions are
14 providing reasonable protection and that CWF H3+ could
15 maintain and potentially increase this reasonable
16 protection.

17 MR. OBEGI: I move to strike as
18 non-responsive. The question goes to the basis of his
19 entire testimony is this comparison to the No Action
20 Alternative as well as a comparison to the existing
21 regulatory requirements. He has testified that it
22 either increases or maintains existing reasonable
23 protections and has asserted that WaterFix provides
24 reasonable protections based on that comparison. That
25 necessarily implicates the foundation for his

1 testimony.

2 WITNESS GREENWOOD: The -- well, I would add
3 that the No Action Alternative includes things that I
4 consider to be reasonably protective; for example, as
5 noted in the footnote on the same page, the Fish and
6 Wildlife Service Biological Opinions requirements,
7 National Marine Fisheries Service Biological Opinion
8 requirements, as well as D1641, for example, has
9 requirements that are reasonably protective.

10 That's our basis for comparison. And so
11 that's -- this is what I'm basing my assessment of
12 reasonable protection on, not to No Action Alternative
13 which includes those things in it. So this particular
14 example here was specifying in relation to South Delta
15 exports, but the comparison is to No Action
16 Alternative, which includes, as I mentioned for
17 example, the D1641 requirements, which is reasonable
18 protection.

19 CO-HEARING OFFICER DODUC: But looking at the
20 sentence, you do use the term "this existing reasonable
21 protection." So I understand Mr. Obegi -- and if I'm
22 wrong, you can correct me -- to question the basis upon
23 which you determined existing reasonable protection.

24 WITNESS GREENWOOD: At this particular example
25 for South Delta exports, in the Delta there are various

1 criteria, for example, including D1641 criteria. But
2 then on top of those is the National Marine Fisheries
3 Service and Fish and Wildlife Service biological
4 opinions. So in consideration of those, I was coming
5 to the conclusion that those are reasonably protected.

6 MR. OBEGI: I think we can proceed, and we'll
7 sharpen this line of inquiry.

8 CO-HEARING OFFICER DODUC: Okay.

9 MR. OBEGI: Would you please bring up
10 NRDC-103. This is a table of the California Department
11 of Fish and Wildlife's Fall Midwater Trawl Abundance
12 Indices for species that are tracked and monitored in
13 the fall midwater trawl.

14 CO-HEARING OFFICER DODUC: And before you
15 proceed, since I'm often advised by counsel to dot my
16 "Is" and cross my "Ts," you had a motion to strike.
17 Did you withdraw that?

18 MR. OBEGI: That's fine. I will withdraw that
19 motion.

20 CO-HEARING OFFICER DODUC: Thank you.

21 MR. OBEGI: Dr. Greenwood, is it your
22 understanding that Delta smelt have declined over the
23 past -- since 1967?

24 WITNESS GREENWOOD: That's my understanding
25 based on the abundance indices that are showing.

1 (Reporter interruption)

2 WITNESS GREENWOOD: That's my understanding
3 based on the survey indices that are shown on the
4 screen, yes.

5 MR. OBEGI: If you would scroll down.

6 Is it your understanding that the abundance of
7 Delta smelt has declined since the 2008 Fish and
8 Wildlife Service biological was adopted?

9 WITNESS GREENWOOD: Can we scroll down
10 further?

11 The recent abundance indices are more than at
12 the time of the biological opinions.

13 MR. OBEGI: And is it your professional
14 opinion that Delta smelt are at grave risk of
15 extinction?

16 WITNESS GREENWOOD: I'm not certain about
17 great risk of extinction. I know that extinction has
18 been discussed. They're listed as endangered, so I
19 recognize that they're -- they have poor population
20 status.

21 MR. OBEGI: And how about longfin smelt? Has
22 the population of longfin smelt as measured by the fall
23 midwater trawl declined since the survey began in 1967?

24 WITNESS GREENWOOD: Yes.

25 MR. OBEGI: And is it a minor decline or a

1 large decline in abundance?

2 WITNESS GREENWOOD: The abundance indices are
3 much lower than they were in the early portion of the
4 time series.

5 MR. OBEGI: Is it your understanding that
6 longfin smelt has declined by approximately 99 percent
7 since the fall midwater trawl began?

8 WITNESS GREENWOOD: The indices of abundance
9 certainly have -- are much lower. I'm not sure that's
10 the specific percentage, but...

11 MR. OBEGI: And how about since the 2009
12 incidental take permit was issued by the California
13 Department of Fish and Wildlife? Have we seen the
14 abundance of indices for longfin smelt rebound?

15 WITNESS GREENWOOD: I don't know how you're
16 necessarily defining "rebound." They have gone up and
17 down since that time.

18 MR. OBEGI: Well, let's look at a couple of
19 particular wet years. Is your understanding that
20 longfin smelt generally increase in abundance in wet
21 years because of higher Delta outflow?

22 WITNESS GREENWOOD: The indices of abundance
23 do correlate with Delta outflow in the winter-spring,
24 yes.

25 MR. OBEGI: And in 2006, it was a very wet

1 year. What was the fall midwater trawl abundance
2 index?

3 WITNESS GREENWOOD: I'm not sure which of
4 the -- I can't see the header. Are you asking me to
5 read it off the screen or --

6 MR. OBEGI: Yeah, it's the right-hand column,
7 sorry.

8 WITNESS GREENWOOD: 1,949

9 MR. OBEGI: And then the next wet year as
10 2011, correct?

11 WITNESS GREENWOOD: I believe so, based on
12 memory.

13 MR. OBEGI: And the abundance index for
14 longfin smelt in 2011, in that wet year?

15 WITNESS GREENWOOD: 477.

16 MR. OBEGI: And then the next wet year would
17 have been 2017, correct?

18 WITNESS GREENWOOD: I believe so, based on
19 memory.

20 MR. OBEGI: And the fall midwater trawl index
21 in 2017?

22 WITNESS GREENWOOD: 141.

23 MR. OBEGI: And doesn't that indicate a very
24 significant decline in the wet year abundance of Delta
25 smelt over that 15-year period?

1 WITNESS GREENWOOD: The numbers over time are
2 lower.

3 MR. OBEGI: Thank you. Would you please pull
4 up NRDC-104. This is the U.S. Fish and Wildlife
5 Service's graphs of the salmon doubling objectives for
6 different salmon runs in the Central Valley. And the
7 first one is -- would you please scroll ahead to the
8 next page.

9 Is your understanding that this graph shows
10 the abundance of fall-run?

11 WITNESS GREENWOOD: That's my understanding,
12 yes.

13 MR. OBEGI: And how was the abundance in the
14 post-1991 period compared the pre-1991 period, On
15 average?

16 WITNESS GREENWOOD: On average, comparing the
17 lines 1992 to 2015, the average abundance is slightly
18 lower compared to the average for 1967 to 1991.

19 MR. OBEGI: And how was the abundance in that
20 1992 to 2015 period compared to the salmon doubling
21 objective of the 1992 Central Valley Project
22 Improvement Act?

23 WITNESS GREENWOOD: It's lower.

24 MR. OBEGI: Thank you. Would you please turn
25 the next page? And if you'll scroll one more -- we'll

1 skip over late fall because they always get skipped
2 over.

3 This is a graph of the winter-run AFRP targets
4 and abundance indices. How is the population abundance
5 of winter-run during the 1992 to 2015 period compared
6 to the baseline period?

7 WITNESS GREENWOOD: Lower.

8 MR. OBEGI: Would you say it's significantly
9 lower?

10 WITNESS GREENWOOD: It's much lower.

11 MR. OBEGI: How does it compare to the
12 doubling objective in the 1992 Central Valley Project
13 Improvement Act?

14 WITNESS GREENWOOD: It's lower.

15 MR. OBEGI: And not achieving it?

16 WITNESS GREENWOOD: Not achieving it.

17 MR. OBEGI: Thank you. Would you please
18 scroll to the next page.

19 And this chart shows the salmon doubling
20 objectives for spring-run Chinook salmon. How is the
21 population abundance of spring-run Chinook salmon
22 during the 1992 to 2015 period compared to the baseline
23 period?

24 WITNESS GREENWOOD: It's lower.

25 MR. OBEGI: Substantially lower?

1 WITNESS GREENWOOD: Less than half.

2 MR. OBEGI: And how is it compared to the
3 Central Valley Project Improvement Act salmon doubling
4 objective?

5 WITNESS GREENWOOD: It's lower.

6 MR. OBEGI: And not achieving it?

7 WITNESS GREENWOOD: It's not meeting that
8 line, no.

9 MR. OBEGI: Would you say that all these
10 species have been adversely affected, at least in part,
11 by water diversions?

12 WITNESS GREENWOOD: I'm not sure. I haven't
13 done the specific analysis of what the factors are that
14 are driving those trends.

15 MR. OBEGI: You're's not sure that water
16 diversions is one of the factors affecting each of
17 these species?

18 WITNESS GREENWOOD: Water diversions can
19 affect the species, but I'm not sure that these are
20 explaining these trends, these differences.

21 MR. OBEGI: That wasn't the question, however.

22 The question is whether water diversions is
23 one of the factors affecting each of these species'
24 abundance.

25

1 CO-HEARING OFFICER DODUC: Ms. Morris?

2 MS. MORRIS: Stefanie Morris, State Water
3 Contractors.

4 Objection, vague and ambiguous as to "water
5 diversions." There are 1800 diversions in the Delta
6 and some upstream. It's unclear what water diversions
7 he's speaking of.

8 CO-HEARING OFFICER DODUC: Mr. Obegi?

9 MS. ANSLEY: I also -- this is
10 Jolie-Ann Ansley for Department of Water Resources.
11 I'd also ask for a clarification. He said it too fast
12 for me to catch in the beginning.

13 What is the source of these graphs? And are
14 there extra copies? Have they been posted?

15 MR. OBEGI: This is downloaded from the United
16 States fish and Wildlife Services AFRP web site.

17 MS. ANSLEY: Okay. Do you have -- are
18 these -- have these been uploaded as exhibits, or are
19 there copies for people?

20 MR. OBEGI: I did not bring copies with me,
21 but I have electronic copies. They're widely known and
22 available.

23 CO-HEARING OFFICER DODUC: And you will
24 clarify --

25 MR. OBEGI: I'll serve them on the service

1 list.

2 CO-HEARING OFFICER DODUC: Yes.

3 MR. OBEGI: All of the exhibits that are used
4 today will be served on the service list.

5 CO-HEARING OFFICER DODUC: Yes. And then
6 clarify your questions to Dr. Greenwood, with respect
7 to exports.

8 MR. OBEGI: Is your understanding that
9 operations of the Central Valley Project and the State
10 Water Project have played a roll in the decline in
11 abundance of each of these species?

12 WITNESS GREENWOOD: They may have played a
13 role; I'm not certain.

14 MR. OBEGI: Would you say that each of these
15 native fish species is doing well?

16 WITNESS GREENWOOD: Doing well -- how would
17 you define "doing well"? The abundance indices are
18 low, as has been shown in the graphs.

19 MR. OBEGI: It was not intended as a trick
20 question. It was more your professional opinion of
21 whether they were -- whether, from a lay perspective,
22 these fish populations are doing well.

23 WITNESS GREENWOOD: Based on the indices of
24 abundance, the status of the species is low.

25 MR. OBEGI: Thank you. So for the salmon runs

1 that would be affected potentially by WaterFix, did you
2 evaluate whether with WaterFix that would affect
3 achieving the salmon doubling objective in the
4 Bay-Delta Water Quality Control Plan?

5 WITNESS GREENWOOD: Achieving the doubling
6 objective? I believe that, if I recall correctly, the
7 plan includes conditions for -- conditions that
8 would -- I don't remember the exact language regarding
9 the doubling goal. But the water quality should be
10 consistent with meeting the -- consistent with that
11 doubling goal. And I don't think there are specific --
12 it's a narrative. It's a narrative assessment. It's a
13 narrative criterion, I guess. So...

14 MR. OBEGI: So did you consider that in
15 evaluating -- strike that.

16 Did you consider the salmon doubling objective
17 in preparing your testimony?

18 WITNESS GREENWOOD: I didn't explicitly
19 consider the salmon doubling objective. As I mentioned
20 earlier, the comparison was for the incremental effect
21 of California WaterFix in relation to the No Action
22 Alternative.

23 MR. OBEGI: Do you believe that the salmon
24 doubling objective in the Water Quality Control Plan is
25 irrelevant to the question of what constitutes

1 reasonable protection for fish and wildlife?

2 WITNESS GREENWOOD: I don't believe that it's
3 irrelevant, but it wasn't something that was
4 specifically considered or explicitly consid- -- I
5 didn't assess that particular objective beyond the
6 extent to which that was captured as far as comparison
7 to the No Action Alternative including those
8 conditions.

9 MR. OBEGI: Thank you. Well, we'll return
10 back to that a little bit later.

11 Are salmon runs in good condition,
12 quote/unquote, in the Central Valley?

13 WITNESS GREENWOOD: I'm not sure specifically
14 how "good condition" is defined.

15 MR. OBEGI: In your testimony in Page 3,
16 Footnote 2, you reference that your testimony was based
17 on compliance with requirements of the Fish and Game
18 Code. Are you aware that Section 5937 of the Fish and
19 Game Code requires the maintenance of -- the release of
20 water below dams to maintain fish in good condition?

21 WITNESS GREENWOOD: I'm generally aware of
22 that, yes.

23 MR. OBEGI: Did you consider that requirement
24 in preparing your testimony?

25 WITNESS GREENWOOD: The example you gave was

1 more specific, I would say, to upstream conditions.
2 However, my reference here is more in relation to the
3 requirements of Fish and Game Code as far as
4 considering the standard of being fully mitigated for
5 the effects to the species that are listed under the
6 California Endangered Species Act.

7 MR. OBEGI: Why did you use the phrase
8 "reasonable protection" in your testimony?

9 WITNESS GREENWOOD: As I understood it, this
10 was the -- the need to provide information that would
11 inform the overall assessment of the effects of the
12 project from the perspective of the change in point of
13 diversion.

14 MR. OBEGI: So were you using that term in the
15 sense of the Water Board's standard for review of the
16 petition?

17 MS. ANSLEY: Objection, asked and answered by
18 Mr. Jackson when he was -- this morning as to the
19 standards under the Water Code and the standards before
20 the Board.

21 CO-HEARING OFFICER DODUC: Let's cover it
22 again.

23 WITNESS GREENWOOD: Sorry. Can you repeat the
24 second part?

25 MR. OBEGI: Could the court reporter please

1 read it back?

2 (Record read)

3 WITNESS GREENWOOD: Yes, I think so.

4 MR. OBEGI: And so returning to one of the
5 first questions I asked you based on status of the
6 species, do you believe that the No Action Alternative
7 provides reasonable protection for fish and wildlife?

8 WITNESS GREENWOOD: The -- as I mentioned
9 earlier, the No Action Alternative includes, for
10 example, D1641 criteria that are the -- the required
11 criteria for reasonable protection. So in comparison
12 to the No Action Alternative -- our comparison was to
13 the No Action Alternative, which includes such
14 criteria. So the No Action Alternative was the basis
15 for the comparison.

16 MR. OBEGI: I'm going to move to strike as
17 non-responsive.

18 CO-HEARING OFFICER DODUC: Please try again,
19 Dr. Greenwood.

20 WITNESS GREENWOOD: I guess the -- with
21 the -- with the inclusion of, for example, the
22 requirements from the Bay Delta Water Quality Control
23 Plan D1641 in the No Action Alternative, that is
24 providing the basis of comparison for reasonable
25 protection. So it includes criteria in it that are

1 listed as reasonable protection. So reasonable
2 protection then was judged in relation to that.

3 MR. OBEGI: So you don't have an opinion,
4 other than a comparative analysis, of what constitutes
5 reasonable protection for fish and wildlife?

6 MS. ANSLEY: Objection, asked and answered. I
7 also want to lodge an objection for the record as to
8 relevance to his opinion on the effectiveness of
9 current regulatory requirements when what he's asked to
10 do here is to give us his opinion on the impacts or
11 effects of the California WaterFix.

12 CO-HEARING OFFICER DODUC: Mr. Obegi?

13 MR. OBEGI: The Board's obligations in this
14 hearing are to establish appropriate flow criteria and,
15 under public trust, to reconsider and reevaluate the --
16 what is -- what provides reasonable protection by the
17 operations of the State and Federal water projects.
18 This line of testimony is clearly relevant to the
19 Board's inquiry here, and we believe it is helpful.

20 It also -- it is -- goes to the foundation for
21 the witness's testimony of what constitutes reasonable
22 protection of fish and wildlife.

23 CO-HEARING OFFICER DODUC: And the fact that
24 you reference existing condition as being -- existing
25 requirements as being reasonably protective. That's my

1 understanding as well. Objections are overruled.

2 MS. ANSLEY: I don't -- I just want to add for
3 the record, I'd also point out that there have been
4 multiple rulings in the case that the current
5 operations of the water projects -- this is not a
6 referendum on the current operations of the WaterFix.
7 So to the extent that these questions go towards that
8 line of reasoning, I also object to relevance.

9 CO-HEARING OFFICER DODUC: Mr. Obegi, any
10 response?

11 MR. OBEGI: The witness's testimony is based
12 on a comparison to existing operations. That
13 necessarily implicates the reasonableness of the
14 protection provided for fish and wildlife by existing
15 conditions and existing regulatory standards.

16 MR. MIZELL: I'm going to object to that as
17 misstating in a large way this testimony. As we've
18 covered many times, it's comparison to the No Action
19 Alternative as distinct from the existing conditions.
20 Mr. Obegi continues to conflate the two.

21 It's an incorrect assumption to say that
22 existing conditions are the same as the No Action
23 Alternative. The No Action Alternative considers
24 climate change and other reasonably foreseeable
25 projects in the circumstance that the Cal WaterFix is

1 not built.

2 CO-HEARING OFFICER DODUC: That objection is
3 noted and sustained. The previous objections are
4 overruled.

5 I'm interested -- since Dr. Greenwood has
6 offered numerous times in his testimony that he
7 believes there is reasonable protection, I'm interested
8 in knowing what he believes that level of reasonable
9 protection to be.

10 So proceed, please. There might have been a
11 question outstanding.

12 MR. OBEGI: We can move on. I think I've made
13 my point.

14 CO-HEARING OFFICER DODUC: But I didn't get an
15 answer.

16 MR. OBEGI: Well, if it would be helpful to
17 the Hearing Officer, could you please read back the
18 question before the objections were raised?

19 CO-HEARING OFFICER DODUC: Actually, it's
20 coming back to me.

21 My understanding Dr. Greenwood, based on what
22 your answer was, was that you applied -- your
23 definition of reasonable protection is meant to convey
24 that the current standards developed for the purpose of
25 reasonable protection have been incorporated into the

1 No Action Alternative and the modeling and the results
2 thereof that you've analyzed. Therefore, in your
3 opinion, that constituted reasonable protection.

4 WITNESS GREENWOOD: That's our basis for
5 comparison, yes, for assessing the incremental effect
6 of CWF H3+.

7 MR. OBEGI: And so you believe that the
8 Board's inquiry should be limited to the incremental
9 effect on fish and wildlife?

10 WITNESS GREENWOOD: I don't know all the
11 things that the Board would necessarily need to
12 consider. This is the information that I've been
13 providing.

14 MR. OBEGI: Would you please pull up State
15 Water Board 25. This is the 2010 public trust flow
16 criteria report. And turn to Page 2; scroll up to the
17 very top.

18 The first sentence on this page says, quote,
19 "The best available science suggests that current flows
20 are insufficient to protect public trust resources."
21 Do you agree with that statement?

22 WITNESS GREENWOOD: I'm aware that the -- that
23 this report addressed that issue. I would need to
24 consider more the specifics on that. But I'm aware of
25 that report.

1 MR. OBEGI: Did you consider this report in
2 preparing your testimony?

3 WITNESS GREENWOOD: My testimony was focused
4 on the incremental comparison to the No Action
5 Alternative.

6 MR. OBEGI: Did you consider this report in
7 preparing the analysis of the effects of WaterFix?

8 MS. MORRIS: Stefanie Morris, State Water
9 Contractors. I'd like to object to this line of
10 questioning and the use of this report without showing
11 the witness the caveat that specifically addresses that
12 the Board cannot just rely on this without doing
13 balancing.

14 And also I would like to object to this line
15 of questioning as it goes to the Water Quality Control
16 Plan and the Board's previous rulings that we're not
17 doing the Water Quality Control Plan in this hearing,
18 otherwise meaning that this goes to the entire system,
19 not just to the California WaterFix project.

20 CO-HEARING OFFICER DODUC: With respect to
21 your first objection, Ms. Morris, it's overruled.
22 Actually, you missed a previous cross-examination by
23 Mr. Jackson where Dr. Greenwood expressed his knowledge
24 of the caveats associated with this report.

25 And the balancing that the Board needs to do

1 with respect to your second line of -- your second
2 objection, I will allow Mr. Obegi to respond.

3 MR. OBEGI: It is a simple question whether he
4 agrees with this report that current flows are
5 sufficient to protect; it goes, again, to the
6 foundation for his testimony.

7 CO-HEARING OFFICER DODUC: Objection is
8 overruled.

9 Did I deprive you of an opportunity to speak,
10 Mr. Herrick?

11 MR. HERRICK: No.

12 CO-HEARING OFFICER DODUC: Okay.

13 MR. OBEGI: So it's a simple yes or no
14 question. Do you agree or not agree with this
15 statement?

16 WITNESS GREENWOOD: I don't know that it's a
17 simple yes or no, but I -- I understand the science,
18 the rationale for the science suggesting the current
19 flows are insufficient to protect public trust
20 resources. I've seen the information that's considered
21 in the report. So I do understand that there is
22 science that suggests the current flows are not
23 sufficient.

24 MR. OBEGI: And would you please -- is it
25 Mr. Hunt? Would you please pull up State Water Board

1 103, which is the Board's final scientific basis report
2 for the Phase 2 update of the Water Quality Control
3 Plan. And would you please turn to -- let's turn Page
4 1-5 if you could. And if you would scroll down --
5 that's great.

6 There's a sentence that reads -- this last
7 paragraph, "While various State and Federal agencies
8 have acted to adopt requirements to protect the
9 Bay-Delta ecosystem, there is no comprehensive
10 regulatory strategy addressing the watershed as a
11 whole. Instead, there are various regulatory
12 requirements that cover some areas of the watershed and
13 not others. Many of these requirements are the sole
14 responsibility of the projects under the Bay-Delta Plan
15 as implemented through Revised Water Rights Decision
16 1641 (D1641) and two biological opinions (BiOps)
17 addressing Delta smelt and salmonids and an incidental
18 take permit addressing longfin smelt. The best
19 available science, however, indicates that these
20 requirements are insufficient to protect fish and
21 wildlife."

22 Do you agree or disagree with that statement?

23 WITNESS GREENWOOD: I understand the basis for
24 that statement. I understand the sci- -- I mean, I've
25 looked at that, and I understand the science regarding

1 the requirements as being insufficient and the basis
2 for them. So there's aspects I think that I would -- I
3 would agree with that regarding. But I would note that
4 in this -- this is part of the process that's outside
5 of the considerations for CWF H3+ and it is incremental
6 effect in relation to the No Action Alternative.

7 CO-HEARING OFFICER DODUC: Ms. --

8 MS. MORRIS: I would move --

9 CO-HEARING OFFICER DODUC: -- Morris?

10 MS. MORRIS: -- to strike the answer.

11 Again --

12 CO-HEARING OFFICER DODUC: Ms. Morris, I
13 really would appreciate it if you would wait until I
14 acknowledge you before you begin speaking. Everyone
15 else, I think, provides me with that courtesy.

16 MS. MORRIS: I apologize.

17 CO-HEARING OFFICER DODUC: Thank you. You may
18 begin.

19 MS. MORRIS: Now I'm not sure what I was going
20 to say.

21 Move to strike the answer. I don't think it's
22 appropriate that this witness is being asked to
23 substitute his judgment about regulatory requirements
24 that this Board has to make, not on this project, but
25 on Water Quality Control Plan Update.

1 CO-HEARING OFFICER DODUC: Is he being asked
2 to substitute his judgment for that? Or he's just
3 being asked to -- for his understanding and
4 confirmation if he agrees?

5 MR. OBEGI: I'm asking for his professional
6 opinion whether he agrees with that statement.

7 CO-HEARING OFFICER DODUC: Objection
8 overruled. That was a motion to strike; it's denied.
9 Okay.

10 MR. OBEGI: You're actually very good at this.
11 Would you -- if we could, I don't believe the
12 witness actually answered the question.

13 CO-HEARING OFFICER DODUC: Okay.

14 WITNESS GREENWOOD: I believe I did.

15 CO-HEARING OFFICER DODUC: There was a
16 somewhat convoluted answer, I think. So please answer
17 it again for me.

18 WITNESS GREENWOOD: I believe I said that
19 there are aspects that I think I would agree with, but
20 then I gave the context for, essentially, my testimony
21 and my considerations for how the assessment was being
22 done in my particular testimony.

23 MR. OBEGI: Is it is your understanding that
24 the scientific basis report recommends increases in
25 Delta outflow in the winter-spring months?

1 WITNESS GREENWOOD: That's my understanding,
2 yes

3 MR. OBEGI: And then going back a little bit,
4 just a few more questions on the basis for your
5 testimony.

6 You also testified that you compared WaterFix
7 to the existing regulatory requirements; is that
8 correct?

9 WITNESS GREENWOOD: As captured in the
10 No Action Alternative, yes.

11 MR. OBEGI: Are you aware that the U.S. Fish
12 and Wildlife Service reinitiated consultation on the
13 2008 biological opinion?

14 MR. MIZELL: Objection, asked and answered.

15 CO-HEARING OFFICER DODUC: Well, answer it
16 again.

17 WITNESS GREENWOOD: I'm aware of it, yes.

18 MR. OBEGI: And are you aware that the
19 National Marine Fishery Service reinitiated
20 consultation under the 2009 NMFS biological opinion?

21 WITNESS GREENWOOD: Yes, I believe so.

22 MR. OBEGI: And in both cases, doesn't the
23 weight of evidence show that those existing biological
24 opinions failed to provide reasonable protection for
25 fish and wildlife?

1 CO-HEARING OFFICER DODUC: Ms. Morris?

2 MS. MORRIS: Calls for a legal conclusion.

3 CO-HEARING OFFICER DODUC: Mr. Obegi?

4 MR. OBEGI: The witness testified as to what
5 constitutes reasonable protection for fish and
6 wildlife. Therefore, having opened the door, he can't
7 close it to others.

8 MR. MIZELL: His answer went to reasonable
9 protection as he understood it under the existing
10 regulatory requirements and whether or not the project
11 was maintaining the existing regulatory requirements.

12 Mr. Obegi is trying to leverage the fact that
13 he brought in external evidence from U.S. Fish and
14 Wildlife Service graphics and asked our witness to try
15 and confirm those to undermine the existing regulatory
16 requirements. It's a completely inappropriate
17 question. It's also been asked and answered.

18 CO-HEARING OFFICER DODUC: Mr. Bezerra?

19 MR. BEZERRA: Yes. Ryan Bezerra for Cities of
20 Folsom and Roseville, Sac Suburban Water District, San
21 Juan Water District.

22 I'd like to join Ms. Morris's objection. I
23 believe the question was whether the biological
24 opinions demonstrate the weight of evidence --
25 demonstrate via the weight of the evidence that

1 existing regulatory requirements are not protective.

2 That is a very vague and ambiguous question.
3 We're talking about documents that are thousands of
4 pages long, covering multiple species. I don't think
5 it's a fair question to ask whether or not the weight
6 of evidence in 2,000 pages of biological opinions is
7 protective.

8 CO-HEARING OFFICER DODUC: Fair enough.

9 Mr. Obegi, perhaps you could fine-tune that
10 question.

11 MR. OBEGI: The witness's written testimony
12 references that -- his understanding of the biological
13 opinions and, thus, I think it is a fair question.

14 But maybe another way to rephrase it, so you
15 are aware that the -- that both biological opinions are
16 the subject of reinitiation of consultation, correct?

17 WITNESS GREENWOOD: I'm aware of that, yes.

18 MR. OBEGI: And the basis for that
19 reinitiation was because both -- all of the species
20 under those biological opinions were exhibiting very
21 low abundance after the drought?

22 WITNESS GREENWOOD: I believe so, yes.

23 MR. OBEGI: As well as new scientific
24 information?

25 WITNESS GREENWOOD: Yes, I think that's right.

1 MR. OBEGI: And that includes new scientific
2 information on the importance of Delta outflows for
3 Delta smelt?

4 WITNESS GREENWOOD: I would have to confirm
5 that, but I that I that's right.

6 MR. OBEGI: And did you consider that new
7 scientific information in developing your testimony?

8 CO-HEARING OFFICER DODUC: Mr. Bezerra?

9 MR. BEZERRA: Again, Ryan Bezerra. Again, the
10 same objection, vague and ambiguous. The new evidence
11 supporting the reinitiation of consultation, the
12 evidence related to longfin smelt -- it's vague and
13 ambiguous. You're talking masses of data. Mr. Obegi
14 needs to be pretty specific if he wants to get specific
15 answers to his questions.

16 CO-HEARING OFFICER DODUC: Mr. Obegi, as I
17 understand your question, it was just simply a yes or
18 no, "Did you consider?"

19 MR. OBEGI: That is correct.

20 CO-HEARING OFFICER DODUC: Dr. Greenwood, are
21 you able to answer the question?

22 WITNESS GREENWOOD: Did I consider the
23 reinitiation? That wasn't part of what I considered in
24 my testimony.

25 CO-HEARING OFFICER DODUC: Okay.

1 MR. OBEGI: Thank you.

2 WITNESS GREENWOOD: Actually, I take that
3 back. There is reference to the reinitiation, I
4 believe, in one instance Regarding the uncertainty in
5 outflow for Delta smelt in my written testimony.

6 MR. OBEGI: I think that's a sufficient answer
7 to the question. We can move on.

8 MS. ANSLEY: Well, I think I'd like our
9 witness -- if he has a follow up, if he's looking for
10 something to reference to the Board, I'd like him to
11 finish looking at his pages if he has something to add.

12 CO-HEARING OFFICER DODUC: Did you have
13 anything to add, Dr. Greenwood?

14 WITNESS GREENWOOD: Just to clarify, Page 24
15 of my written testimony, Lines 6 to 7 Provides
16 reference to the reinitiation as being one process
17 regarding where uncertainty regarding Delta smelt
18 rearing habitat would be also considered.

19 MR. OBEGI: Thank you.

20 Mr. Hunt, would you please pull up State Water
21 Board 106. This is the National Marine Fishery Service
22 Biological Opinion on WaterFix.

23 Would you please turn to Page 791. And as
24 I've learned, to my great chagrin, the pages are not
25 actually the same on the pdf and the page numbers.

1 Page 791 provides a summary of through-Delta salmon
2 survival analyses by model. Are you familiar with
3 these models and analysis?

4 WITNESS GREENWOOD: Yes.

5 MR. OBEGI: Is it correct that the models used
6 in the NMFS biological opinion show that salmon
7 survival in the lower Sacramento River will be lower
8 than under the No Action Alternative?

9 WITNESS GREENWOOD: The modeling results which
10 reflect the CalSim modeling and other associated models
11 such as DSM-2 do show negative effects, potential
12 negative effects.

13 But those models generally do not account
14 for -- they do not account for the real-time
15 operational adjustments that I mentioned as being
16 important in my written testimony in which I also
17 acknowledge as being important in that biological
18 opinion.

19 MR. OBEGI: And we will get to that, thank
20 you.

21 So the Delta Passage model, the analysis
22 concludes that the survival would be reduced for
23 winter-run by 2 to 7 percent?

24 WITNESS GREENWOOD: That's the result of the
25 analysis.

1 MR. OBEGI: And salmon survival for fall-run
2 and spring-run would be 1 to 4 percent?

3 WITNESS GREENWOOD: That's correct. That's
4 the summary of the Delta Passage model results, as I
5 indicated, is focusing on the operational effects as
6 were expressed in the modeling without consideration
7 of, for example, some of the mitigation measures that
8 are included.

9 MR. OBEGI: And then the Perry Survival Model,
10 it your understanding that that is a flow survival
11 model?

12 WITNESS GREENWOOD: Yes, it is.

13 MR. OBEGI: And that's based on acoustic tag
14 data?

15 WITNESS GREENWOOD: Yes.

16 MR. OBEGI: And does the Perry Survival Model
17 indicate lower survival through the Lower Sacramento
18 River with WaterFix?

19 WITNESS GREENWOOD: Yes, it does, again, with
20 the same clarifications. Those are the results based
21 on the modeling without consideration of real-time
22 operations and mitigation, which I mentioned in my
23 written testimony.

24 MR. OBEGI: Does the Perry Survival Model
25 account for the reduction in survival due to

1 impingement at the North Delta intakes?

2 WITNESS GREENWOOD: Not explicitly, in its --
3 in the way that it's been applied, I don't believe.

4 MR. OBEGI: So that mortality and injury would
5 be in addition to the reductions in survival from
6 reduced flows?

7 WITNESS GREENWOOD: Potential -- those
8 potential factors could be in addition to the
9 flow-based effects that are expressed in that modeling.

10 MR. OBEGI: And if you would turn to Page 905
11 of this document. Does it conclude that injury and
12 mortality from impingement would be less than
13 9 percent?

14 WITNESS GREENWOOD: That's what's written
15 there, yes.

16 MR. OBEGI: And is it correct that the
17 Biological Opinion concludes that the effects of
18 reduced flow on salmon survival are seen at flows up to
19 35,000 cfs?

20 WITNESS GREENWOOD: The -- which flows are you
21 specifically meaning? I assume Sacramento River flows?

22 MR. OBEGI: Yes, Lower Sacramento River.

23 WITNESS GREENWOOD: It is -- I don't recall a
24 specific conclusion regarding 35,000 cfs. I think it
25 notes 35,000 cfs as approximately the asymptote of a

1 flow survival relationship from the Perry, et al. model
2 that we just looked at on the other page.

3 MR. OBEGI: Turn to Page 772. I think in the
4 middle of the sentence there it says, middle of the
5 paragraph, "35,000 cfs at Freeport, which is
6 approximately where the flow-survival relationship
7 described by Perry, et al., 2017 asymptotes."

8 (Reporter interruption)

9 MR. OBEGI: "35,000 cfs at Freeport, which is
10 approximately where the flow-survival relationship
11 described by Perry, et al., 2017 asymptotes."

12 So that's consistent with your testimony just
13 now, correct?

14 WITNESS GREENWOOD: Yes, that's what I said.

15 MR. OBEGI: One of the changes that occurred
16 in developing the revised Biological Assessment was
17 what's known as unlimited pulse protection; is that
18 correct?

19 WITNESS GREENWOOD: Yes.

20 MR. OBEGI: And unlimited pulse protection
21 requires that the North Delta intakes be reduced to
22 low-level pumping any time a certain number of salmon
23 are observed migrating past the downstream -- or
24 observed migrating at Knight's Landing?

25 WITNESS GREENWOOD: Catch in rotary screw

1 traps, yes.

2 MR. OBEGI: And that was intended to reduce
3 the adverse effects on survival that were seen in the
4 Perry model and the Delta Passage model and other
5 models?

6 WITNESS GREENWOOD: Yes, to protect additional
7 pulses of fish. The previous -- the -- before the
8 updates or the revisions, there was only -- there were
9 less. There wasn't unlimited pulse protection. So
10 this was to protect multiple pulses of fish throughout
11 the migration season when entering the Delta.

12 MR. OBEGI: And unlimited pulse protection
13 only applies when flows are below 35,000 cfs?

14 WITNESS GREENWOOD: As it's stated there,
15 the -- there is an off-ramp bypass flow of 35,000 cfs.
16 So can you repeat your question?

17 MR. OBEGI: I believe my question was the
18 unlimited pulse protection only applies when flows are
19 less than 35,000 cfs?

20 WITNESS GREENWOOD: I'd have to verify that.

21 MR. OBEGI: That seems to be what that line
22 just read from the biological opinion states, correct?

23 WITNESS GREENWOOD: That -- I'm not sure it
24 says that in so many words.

25 CO-HEARING OFFICER DODUC: Can I ask you to

1 point it out, Mr. Obegi?

2 WITNESS GREENWOOD: I see the sentence, but
3 I'm just -- I'm not seeing that it says specifically
4 what you're asking.

5 MR. OBEGI: Is it your understanding that
6 unlimited pulse protection would not apply when flows
7 are above 35,000 cfs? In other words, if you could
8 divert -- that the North Delta diversion would divert
9 more water as long as flows are above 35,000 cfs?

10 WITNESS GREENWOOD: I think there are bypass
11 flow criteria that are, I think, in addition to this
12 specific pulse protection. So I would need to look at
13 those tables again to remind myself of the specifics.

14 MR. OBEGI: But if there was a conflict
15 between unlimited pulse protection and those three
16 levels of post pulse flows, unlimited pulse protection
17 would control, correct?

18 CO-HEARING OFFICER DODUC: Ms. Morris?

19 MS. MORRIS: Objection. The question is
20 ambiguous as to what time period would the pulse
21 flow -- what time period is he asking the question?

22 CO-HEARING OFFICER DODUC: Mr. Obegi

23 MR. OBEGI: I believe this is during the
24 October to June period, when unlimited pulse protection
25 applies.

1 WITNESS GREENWOOD: Sorry. Could you ask it
2 again?

3 MR. OBEGI: If there was a -- the Biological
4 Assessment sets out three levels of post pulse pumping
5 correct?

6 WITNESS GREENWOOD: Yes.

7 MR. OBEGI: And then, in the revised
8 Biological Assessment, there was unlimited pulse
9 protection, correct?

10 WITNESS GREENWOOD: Yes

11 MR. OBEGI: And if there was a conflict in
12 those rules unlimited pulse protection would control,
13 correct?

14 WITNESS GREENWOOD: I'm not certain. I can
15 can't say definitively as I sit here just now.

16 MR. OBEGI: And what was the biological
17 basis -- you testified previously that unlimited pulse
18 protection would be triggered by the catch of five
19 winter- or spring-run salmon in the Knights Landing
20 rotary screw trap, correct?

21 WITNESS GREENWOOD: Yes.

22 MR. OBEGI: What's the biological basis for
23 five? Why not four?

24 WITNESS GREENWOOD: I'm not entirely certain
25 other than to note that five is a value that has

1 been -- I think that is included in the 2009 Biological
2 Opinion for early warning regarding the need to operate
3 the Delta Cross Channel.

4 But I would also note that the specific value
5 of five could also be refined based on the
6 considerations, studies, and so on preconstruction --
7 preoperations.

8 MR. OBEGI: And scrolling down to the bottom
9 of this page, does the Biological Opinion explain that
10 there are three assumption regarding its analysis of
11 real-time operations and unlimited pulse protection?

12 WITNESS GREENWOOD: Yes, it does.

13 MR. OBEGI: And is the first assumption that
14 existing monitoring is inadequate?

15 WITNESS GREENWOOD: Sorry. The first --
16 what's the question -- was the first assumption that
17 existing monitoring was inadequate?

18 MR. OBEGI: Yes, that was the question.

19 WITNESS GREENWOOD: It acknowledges that there
20 could be an underestimate of the abundance and temporal
21 extent of winter-run and spring-run presence. And it
22 notes that, as described in the Proposed Action, that
23 the final development of trigger values and an
24 additional monitoring location closer to the North
25 Delta diversions may be necessary.

1 And I think those are -- that's some topics
2 that we covered yesterday with Ms. Meserve.

3 MR. OBEGI: Thank you. And is the second
4 assumption also that this reliance on monitoring may
5 underestimate the adverse affects on salmon? I think
6 you might need to scroll to the top of Page 773.

7 WITNESS GREENWOOD: It notes -- it notes that,
8 yes.

9 MR. OBEGI: And the third assumption also
10 raises concerns that the real-time operations may
11 underestimate adverse impacts on salmon survival,
12 correct?

13 WITNESS GREENWOOD: It does note that, and it
14 also notes that, when real-time operations are
15 implemented, new additional monitoring locations and
16 information from baseline studies are expected to allow
17 better characterization of the typical travel time and,
18 therefore, a lag time from monitoring stations closer
19 to the diversion locations, which would allow better
20 resolution of fish presence and abundance to coordinate
21 the operations.

22 And this is part of the -- this preoperational
23 period I'm talking about, where these aspects will be,
24 I guess, refined more.

25 MR. OBEGI: Mr. Hunt, would you please turn to

1 Page 775.

2 Does this Table 2-226 provide an estimate of
3 mortality compared to the No Action Alternative with
4 unlimited pulse protection?

5 WITNESS GREENWOOD: I believe it does, yes.

6 MR. OBEGI: And does it conclude that
7 mortality with unlimited pulse protection and real-time
8 operations is greater than under the No Action
9 Alternative?

10 WITNESS GREENWOOD: It shows that it's less as
11 the modeling -- based on the modeling that was
12 included. I believe that the -- that overall section
13 in which that table is found acknowledges the
14 difficulty in trying to simulate, I guess, and assess
15 the unlimited pulse protection scenario just through
16 modeling. And it acknowledges the importance of the
17 various studies that will be needed to better refine
18 unlimited pulse prevention criteria, for example.

19 MR. OBEGI: You just answered that it would be
20 less. You mean less than without unlimited pulse
21 protection?

22 WITNESS GREENWOOD: This is compared -- I was
23 talking about compared to the No Action Alternative.

24 MR. OBEGI: So is your testimony that, with
25 unlimited pulse protection, there would be no increase

1 in mortality compared to the No Action Alternative?

2 WITNESS GREENWOOD: My testimony is that
3 the -- this analysis shows that the -- based on how it
4 was modeled with the unlimited pulse protection, that
5 the mortality or survival -- I'm sorry. Mortality is
6 less, slightly less, compared to the No Action
7 Alternative.

8 And your question, again, please?

9 MR. OBEGI: I believe that misstates the
10 conclusion of the Biological Opinion. If you look at
11 the bottom sentence on this page, it says -- or sorry,
12 of what was shown, it reduces the impact of Delta
13 diversions as compared to survival under No Action. In
14 all these cases, it's showing an increase in absolute
15 mortality compared to the No Action Alternative.

16 WITNESS GREENWOOD: If I inadvertently said
17 that it's a reduction in survival, it's meaning an
18 increase in mortality. So I meant to indicate that
19 this does show a reduction in survival and increase in
20 mortality.

21 MR. OBEGI: Thank you. And was unlimited
22 pulse protection modeled with CalSim?

23 CO-HEARING OFFICER DODUC: Perhaps Mr. Reyes
24 can answer that.

25 WITNESS REYES: What was modeled in CalSim is

1 what was shown in those tables that we looked at
2 earlier. And I don't believe it's unlimited
3 protection -- at least for long presenting . I don't
4 know about for -- I don't know what document this is
5 here. This is the reconsultation? I don't know what
6 that...

7 MR. OBEGI: This is the final Biological
8 Opinion for WaterFix.

9 If unlimited pulse protection was implemented,
10 would that lead to an increase in pumping from South
11 Delta?

12 WITNESS GREENWOOD: I'm not sure.

13 MR. OBEGI: Would you please pull up
14 Appendix F to State Water Board 106.

15 CO-HEARING OFFICER DODUC: As that's being
16 pulled up, Mr. Obegi, please note that I would like to
17 take a break in about 15 minutes or so for the court
18 reporter. So if you would find a nice break.

19 MR. OBEGI: Absolutely. I will do so.

20 And on Page 1-2 -- I'm sorry it's Page 1 to 2.
21 See at the very top of this -- bottom of Page 1, this
22 is the U.S. Geological Survey's analysis of the effects
23 of WaterFix on flow reversals in Appendix 2, the NMFS
24 Biological Opinion. Does this report conclude that the
25 bypass rules increase the frequency and duration of

1 reverse flows downstream of Georgiana Slough?

2 WITNESS GREENWOOD: I think -- I don't recall
3 the specifics, but -- actually, I see that conclusion
4 there. So, yes, it makes that conclusion.

5 MR. OBEGI: Thank you.

6 Are you familiar with the statement "Survival
7 Objectives" that were involved as part of the Bay Delta
8 Conservation Plan?

9 WITNESS GREENWOOD: I'm generally familiar
10 with them.

11 MR. OBEGI: Mr. Hunt, would you please pull up
12 NRDC-53? And turning to Page 4 -- yeah. Does it
13 state -- let me see if I can find it. Scroll down a
14 little bit further, if you would, Mr. Hunt.

15 I must have my page number wrong. Let's turn
16 to Page 3 if you would. Does this report explain that
17 high mortality in the Delta is a significant limiting
18 factor for salmon?

19 WITNESS GREENWOOD: I don't recall the
20 specifics of what it discusses.

21 MR. OBEGI: And on Lines 22 to 23, does it say
22 that one of the most important goals and objectives is
23 to improve migratory conditions and survival of
24 juvenile salmonids passing through the Delta?

25 MS. ANSLEY: I'm sorry, objection. I think he

1 said he does not recall this conversation. Now he's
2 being asked to confirm what the document says. I just
3 want to make sure I have that right.

4 CO-HEARING OFFICER DODUC: Where are you going
5 with this, Mr. Obegi? Laying down foundation for a
6 question?

7 MR. OBEGI: I am laying foundation for a
8 question regarding the importance of improving salmon
9 survival for reasonable protection of fish and
10 wildlife.

11 CO-HEARING OFFICER DODUC: Overruled.

12 WITNESS GREENWOOD: Can you repeat that?
13 Sorry.

14 MR. OBEGI: Does this report conclude on
15 Lines -- now I forgot my line number -- that, amongst
16 the goals and objectives, one of the most important is
17 the effort to improve migratory conditions and survival
18 of juvenile salmonids passing through the Delta? It's
19 Lines 21 to 23.

20 WITNESS GREENWOOD: Those are goals and
21 objectives for the -- that BDCP that's being referred
22 to.

23 MR. OBEGI: And would you agree that improving
24 salmon survival through the Delta is important for the
25 long-term sustainability of salmon?

1 WITNESS GREENWOOD: I haven't considered it in
2 terms of long-term sustainability.

3 MR. OBEGI: Thank you. Would you please turn,
4 Mr. Hunt, to Table 1, which I think is a couple pages
5 further, but I did not actually do a good job of
6 putting it in my notes.

7 It must be on one of the first pages then.
8 There it is.

9 This table provides an estimate of
10 through-Delta survival today and interim survival
11 objectives over the next 40 years; is that your
12 understanding of this table?

13 WITNESS GREENWOOD: Under the BDCP, those were
14 interim objectives from the Draft BDCP.

15 MR. OBEGI: And for each of these species,
16 does the interim BDCP survival objective call for
17 increasing salmon survival through the Delta?

18 WITNESS GREENWOOD: It does in that table,
19 yes.

20 MR. OBEGI: And is it your -- do you recall
21 how these BDCP survival objectives were developed or
22 the basis for them?

23 WITNESS GREENWOOD: I'd have to look some more
24 at that appendix to remind myself of the basis. I
25 believe that I cannot recall much more than the initial

1 estimates being based on some of the recent studies.
2 So the estimate through-Delta survival is based on some
3 of the recent studies to inform those.

4 CO-HEARING OFFICER DODUC: Ms. Ansley, do you
5 have an objection?

6 MS. ANSLEY: I just have sort of a generalized
7 objection. It's very hard -- some those documents are
8 really well known. But we're being asked to look at
9 isolated pieces of the document. We don't have the
10 full expert -- excerpt. There are no copies provided.
11 And our witness perhaps hasn't reviewed this in a long
12 time, so he's being asked to read this off a screen.

13 Our side, this side, is really hard to read.
14 I assume he can read well off that side. But I would
15 like to ask that, in the future, that if people are
16 going to bring large excerpts of things, that our
17 witnesses could have the documents to be able to see,
18 maybe, what's right above it, what's right below it if
19 they need a moment to put it in context.

20 Just pulling large documents with a lot of
21 data in it makes it very difficult for an accurate
22 answer for our witnesses.

23 So I would -- I do object to going through
24 large documents like this with caveats and data and
25 explanations and being asked to merely sort of reaffirm

1 what the document says, which the documents speak for
2 themselves. So I just have a problem with the line of
3 questioning.

4 CO-HEARING OFFICER DODUC: Understood. And
5 certainly we will consider that in weighing his
6 responses.

7 I actually would go you one step further,
8 Ms. Ansley, and note not just to Mr. Obegi but all
9 other cross-examiners, the fine example set by
10 Mr. Bezerra, who actually e-mailed documents to the
11 entire party list ahead of time, letting other parties
12 know the documents and providing the documents that
13 will be used for the cross-examination.

14 I believe it was you, Mr. Bezerra, right, who
15 did that? Yes? Right. So please do a Bezerra from
16 now on

17 MR. OBEGI: If I may, just a point of
18 clarification, this exhibit was on our exhibit list.

19 MS. ANSLEY: Okay. Perhaps then, my objection
20 is that our witnesses need a moment to really look
21 through a document that's this complicated. I feel
22 like we would be able to get better, refined answers.

23 CO-HEARING OFFICER DODUC: And more helpful,
24 correct.

25 Let's do this. Mr. -- I'm about to call a

1 break so that a document might hopefully be produced
2 and provided to Dr. Greenwood.

3 Did you have something to add, Mr. Jackson?

4 MR. JACKSON: Yes. We were told in the CEQA
5 case by the Attorney General's office that there were
6 3 million pages of material, most of which is caused by
7 the -- first it was BDCP, then it was -- by putting all
8 of this stuff in the record, this problem is immense.

9 CO-HEARING OFFICER DODUC: All right. We are
10 not going to have a back and forth on this.

11 Ms. Des Jardins?

12 MS. DES JARDINS: Yeah, I did bring this up
13 before Part 1 of the hearing. This would be a change
14 in hearing rulings. I said, you know, I want to add
15 some documents, I don't want to introduce on cross.
16 They said I could just bring them. I initially printed
17 them all out. It was very heavy. And they said, "No,
18 you don't need to do that. Just provide the pdfs."

19 And then there was an issue that some of them
20 were very large and it was difficult to serve them on
21 the service list. And the FPT site wasn't set up. And
22 that -- and that was difficult. Then it became that
23 you didn't even -- the ruling was that you didn't have
24 to serve cross-exam. You can --

25 CO-HEARING OFFICER DODUC: No, no, you don't.

1 You have to introduce them in the record.

2 MR. OBEGI: Yeah. So if -- I wasn't prepared
3 today to come and serve everybody and -- so just -- I'm
4 just asking that -- I'm happy to do whatever the Chair
5 asks. But I did sort of go through this in Part 1, and
6 it became -- and DWR also did produce a number
7 documents. And it's been the established procedure.

8 CO-HEARING OFFICER DODUC: Well, actually, I
9 can address that very easily. We're not going to get
10 to you today.

11 I am looking at the clock, I'm looking the
12 pace at which Mr. Obegi is conducting his
13 cross-examination. And not any fault of yours; its
14 just very intense. And so, you know, even if you
15 finish -- if you are close to the four-hour estimate,
16 then we're looking at 5:30. And if you are faster than
17 that, I think the witnesses deserve a break. I know I
18 certainly do anyway. So we are not going to get to any
19 other cross-examination beyond this one today.

20 MS. DES JARDINS: I do have a some exhibits as
21 well. We've been asked to provide the entire document.
22 And I would like to conform to whatever the hearing
23 ruling was, just be clear about what the procedure is.
24 And I do actually spend a lot of time preparing my
25 cross exhibits. And it's actually one of the bulk of

1 the work. But if I just wave my hands, they say,
2 "Objection, not in evidence." I have to do something
3 specific. Thank you.

4 CO-HEARING OFFICER DODUC: Okay.

5 MR. OBEGI: May I interject one?

6 CO-HEARING OFFICER DODUC: Please.

7 MR. OBEGI: During the break, it might be
8 helpful if the witness might look at Page 20 of this
9 document. I have a few questions, and then we'll be
10 done with this document.

11 CO-HEARING OFFICER DODUC: Are there any other
12 documents that other witnesses should be preparing
13 themselves for?

14 MS. ANSLEY: I do ask whether you have a copy
15 to provide the witness.

16 MR. OBEGI: I don't but he can look on my
17 computer.

18 CO-HEARING OFFICER DODUC: If it is a
19 document, Mr. Obegi, that you already submitted,
20 perhaps you might print out a copy if it's not
21 thousands of pages long.

22 Do we have access to the printer?

23 Please discuss it with staff.

24 Ms. Morris?

25 MS. MORRIS: I'd like to object to any

1 additional questions on this document. This is the
2 Final BDCP. This was for a totally different project.
3 This is not the California WaterFix. There's different
4 styles of recovery. It's a different section under the
5 ESA. Any questions related to the recovery or what the
6 goals are are irrelevant in this proceeding.

7 CO-HEARING OFFICER DODUC: Mr. Obegi?

8 MR. OBEGI: I would strongly object to the
9 notion that salmon recovery is irrelevant to the
10 Board's obligations to provide reasonable protection
11 for fish and wildlife.

12 CO-HEARING OFFICER DODUC: Are you using the
13 findings here to question Dr. Greenwood and other
14 witnesses on the veracity of their statements regarding
15 reasonable protection?

16 MR. OBEGI: I am.

17 CO-HEARING OFFICER DODUC: Overruled,
18 Ms. Morris.

19 All right. We are taking a break until
20 3:00 o'clock. If you need more time to provide the
21 documents, Mr. Hunt, please let me know.

22 (Recess taken)

23 CO-HEARING OFFICER DODUC: All right,
24 everyone, take your seats, please.

25 It's 3:00 o'clock. We're going to resume.

1 Before I turn it over to Mr. Obegi, we need to have
2 just additional clarification so Ms. Des Jardins is not
3 panicking overnight.

4 It's not required that you provide your
5 documents to cross-examining witness and other parties
6 before you conduct your cross-examination. It is,
7 however, as you experienced yourself, in your best
8 interest or the interest of the cross-examining party
9 to have -- as Mr. Bezerra already noted, to have these
10 documents available to them ahead of time in the
11 interest of saving your time when you get your
12 cross-examination.

13 So, again, it's not required, but as a matter
14 of good practice for these witnesses as well as
15 conserving your cross-examination time, it's ideal to
16 provide documents ahead of time or at least bring
17 copies so that the witnesses are able to refer to the
18 documents as you're asking questions.

19 So, Ms. Des Jardins, I don't want you to panic
20 and go out and produce thousands of copies tonight.
21 Just keep that in mind. Okay?

22 All right. With that, Mr. Bezerra, any other
23 housekeeping matters? I've been touting your fine
24 example, so please don't do anything to tarnish that
25 image right now.

1 MR. BEZERRA: You have no idea how little I
2 want to tarnish that image.

3 I just want to understand in terms of paper
4 copies. In Part 1, I tended to bring 10, 15 paper
5 copies, as standard practice, which is sort of standard
6 practice historically but not so much in this hearing
7 because everybody's got a screen, I think. Actually,
8 we don't have screens here for the witnesses.

9 Do you have a preference in terms of -- I
10 don't want to bury everyone in paper.

11 CO-HEARING OFFICER DODUC: I don't want you to
12 generate paper because we should all be paperless.

13 Yes, definitely the witnesses. I assume their
14 attorneys will want at least one copy. That is the
15 most important. Let's put it that way.

16 MR. BEZERRA: So just going forward, it's a
17 little different when we're next door because
18 everybody's got a screen in front of them. But you'd
19 like us to bring a copy for the witness and the
20 attorney at least?

21 CO-HEARING OFFICER DODUC: It helps them.

22 MR. BEZERRA: Thank you very much.

23 CO-HEARING OFFICER DODUC: Ms. Des Jardins?

24 MS. DES JARDINS: I'm wondering if --

25 CO-HEARING OFFICER DODUC: Your microphone is

1 not on.

2 MS. DES JARDINS: Apologies. As somebody -- I
3 have a very bad repetitive stress injury, and it
4 literally causes me physical pain to lug large amounts
5 of paper around. And it is gets expensive. I already
6 have, like, a \$75 copy bill from the last few days.

7 So I'm wondering if there's a possibility of
8 bringing thumb drives with the documents and providing
9 it electronically.

10 CO-HEARING OFFICER DODUC: You may certainly
11 do that.

12 MS. DES JARDINS: Thank you. I do that
13 already for the --

14 CO-HEARING OFFICER DODUC: The suggestion of
15 providing paper copies and providing them ahead of time
16 is to conserve your cross-examination time.

17 MS. DES JARDINS: Thank you.

18 CO-HEARING OFFICER DODUC: Okay? If only you
19 were a as shining example of Mr. Bezerra, Mr. Obegi.

20 MR. OBEGI: We all hope to emulate his shining
21 example.

22 CO-HEARING OFFICER DODUC: On another note, we
23 will stay -- not to encourage Mr. Obegi, because I know
24 he will be as efficient as possible. But we will stay
25 at late as 5:30 today, if necessary, for him to

1 conclude his cross-examination, I hope.

2 MR. OBEGI: And I just want to, before I begin
3 questioning again, to give you an update. I'm about
4 one third of the way through my questions, so roughly
5 hopefully two more hours.

6 CO-HEARING OFFICER DODUC: All right. Please
7 begin -- or resume.

8 MR. OBEGI: Thank you.

9 If we could pull back up the exhibit that was
10 on the screen before that's now been distributed. And
11 turning to Page 20 -- actually, Page 21 of the pdf.
12 This is Table 4 from the BDCP Proposed Interim Delta
13 Salmonid Objectives. And -- do you recall this now,
14 having refreshed your recollection, Dr. Greenwood?

15 WITNESS GREENWOOD: I recalled it before the
16 break. But, yes, I've had a look at it during the
17 break as well, so refamiliarized myself with aspects of
18 it, yep.

19 MR. OBEGI: Thank you. And I apologize for
20 not providing it to you in advance. It would have been
21 to my better interest.

22 Does this table show the relationship between
23 improvements in Delta survival and increases in
24 abundance of different salmon runs in the Sacramento
25 and San Joaquin basins?

1 WITNESS GREENWOOD: Yes, I believe it does,
2 within the context of this memo. So --

3 MR. OBEGI: And is it your --

4 WITNESS GREENWOOD: It's part of the memo, so.

5 MR. OBEGI: Yes. And is it your understanding
6 that the "Global Goals" in the far right column are the
7 salmon doubling goals of both the Central Valley
8 Project Improvement Act and the Bay Delta Water Quality
9 Control Plan?

10 WITNESS GREENWOOD: I will have to look at
11 more details to see what those global -- global goals
12 are. So I'm not certain what the global goals
13 represent. And --

14 MR. OBEGI: I'll make an offer of proof that
15 those are roughly equivalent to the salmon doubling
16 objectives in both State and Federal law.

17 And with that assumption, does this table show
18 that increases in Delta survival are necessary to
19 achieve this global goal for each of these runs?

20 MS. ANSLEY: Objection, I'm not sure that I
21 know what the "global goal" means. But I can read the
22 table -- Table 4's heading, which says "Relation to the
23 BDCP Global Goals." So I'm not sure; the witness has
24 said he's not sure. And this table is sort of labeled
25 otherwise.

1 CO-HEARING OFFICER DODUC: Regardless of what
2 it is, it is the global goal to which Mr. Obegi is
3 asking his question.

4 Correct?

5 MR. OBEGI: Correct.

6 MS. ANSLEY: As long as it's properly caveated
7 in the record, that's fine.

8 CO-HEARING OFFICER DODUC: We will caveat that
9 it is what it is.

10 WITNESS GREENWOOD: So can you repeat the
11 question?

12 MR. OBEGI: Does this table show that, for
13 each of the runs -- salmon runs in the Sacramento and
14 San Joaquin basins, significant increases in Delta
15 survival are necessary to achieve these global goals?

16 WITNESS GREENWOOD: I'm not sure about whether
17 they're necessary. They are showing that the global
18 goal to be achieved with an increase in Delta survival
19 based on this work.

20 MR. OBEGI: And is it your understanding that,
21 if Delta survival was to be maintained at current
22 levels or reduced, survival in other life stages of
23 salmon would be necessary to achieve these global
24 goals?

25 WITNESS GREENWOOD: I don't see for certain,

1 because it would depend on assuming that this analysis
2 captures those potential effects.

3 MR. OBEGI: In theory, stepping away from this
4 document for a brief moment, if there are reductions in
5 through-Delta survival in order to maintain the same
6 level of abundance, would you generally need to
7 increase survival in other life stages?

8 WITNESS GREENWOOD: It's hard to say. It's
9 not necessarily a linear thing. It could well be a
10 reduction in Delta survival, but if there's a limiting
11 factor in another portion of the life cycle, a change
12 in Delta survival may -- may not have consequence for
13 the overall population.

14 MR. OBEGI: A good answer. Based on the
15 levels of current estimates of salmon survival in the
16 Delta as shown in this table, do you believe that
17 current levels of Delta survival are adequate for the
18 sustainability of each of these salmon runs?

19 WITNESS GREENWOOD: I don't know.

20 MS. ANSLEY: I will lodge an objection to the
21 record as to current levels. I don't believe this is a
22 very recent document, but I don't recall the date of
23 it.

24 CO-HEARING OFFICER DODUC: Mr. Obegi?

25 MR. OBEGI: I believe this is a 2013 document,

1 and the Delta survival column provides the current
2 estimates.

3 CO-HEARING OFFICER DODUC: Are they the most
4 current that we have?

5 MR. OBEGI: I believe that they are roughly
6 the most current that we have. I'm not aware of more
7 updated --

8 MS. ANSLEY: Again, I personally don't know
9 that for sure. If Dr. Marin knows -- or Dr. Greenwood
10 knows for sure -- but to my understanding, the BDCP
11 could be using data from quite a long time go, so I
12 object to representation that this could be the most
13 current estimates or the current estimates. And if the
14 questions pertain to that, then that will be a problem.

15 CO-HEARING OFFICER DODUC: We will caveat
16 that.

17 WITNESS GREENWOOD: I responded, I believe, to
18 that question.

19 MR. OBEGI: You did. So let's go back to the
20 NMFS life cycle, to the NMFS Biological Opinion, which
21 is State Water Board 106 and if we could turn to
22 Page 796.

23 And as Mr. Hunt is getting there, a couple of
24 questions to lay a foundation. Dr. Greenwood, is it
25 correct that the Biological Opinion uses several life

1 cycle models to evaluate the effects of winter -- of
2 WaterFix on winter run Chinook salmon abundance?

3 WITNESS GREENWOOD: Yes.

4 MR. OBEGI: And is it correct that those
5 models predict that the abundance of winter-run salmon
6 would be lower compared to the No Action Alternative?

7 WITNESS GREENWOOD: I wouldn't necessarily
8 characterize it as a prediction. It's a comparison of
9 two different operational scenarios and the estimated
10 escapement as a result of those scenarios. Without
11 accounting for real-time operations mitigation factors.

12 MR. OBEGI: The IOS model, which is discussed
13 here on this page and the prior page, it concludes that
14 there's a 25 percent decrease in escapement as a result
15 of reduced through-Delta survival under the proposed
16 action, correct?

17 WITNESS GREENWOOD: That number sounds -- yes,
18 that number is on the screen, so, yes.

19 MR. OBEGI: And turning to Page 799, the
20 Biological Opinion also uses a winter-run life cycle
21 model that was prepared by the Southwest Fishery
22 Science Center, correct?

23 WITNESS GREENWOOD: Yes.

24 MR. OBEGI: And that model incorporates the
25 effects of habitat restoration, predation, and

1 impingement and other factors, correct?

2 WITNESS GREENWOOD: I believe it does in some
3 runs. There were various runs that were done, and they
4 included those factors, I believe, in some of the runs.

5 MR. OBEGI: And did that life cycle model
6 conclude that there would be higher abundances and
7 higher cohort replacement rates under the No Action
8 Alternative compared to the proposed action?

9 WITNESS GREENWOOD: No, it did not. I would
10 note that it does not incorporate the real-time
11 operations, which we said is an important factor. And
12 also the -- the through-Delta passage of juvenile
13 winter-run Chinook salmon in that model has a sub-daily
14 component, meaning specifically that it's -- it
15 captures nocturnal versus diurnal, so night versus day
16 migration.

17 The modeling that we have for CWF H3+ -- or
18 this is actually BA H3+ scenario -- doesn't account
19 for -- it doesn't capture -- it has assumptions
20 regarding pumping day versus night, but the assumption
21 is that, given the daily target for diversion at the
22 North Delta diversions, that that be done -- providing
23 the sweeping velocity constraints are met -- that that
24 be done as soon as possible in that day.

25 As a result, a lot of the diversion happens

1 during -- this is a modeling assumption. A lot of the
2 diversion happens during the nighttime period when the
3 fish are migrating or a large portion of the fish are
4 migrating downstream. Therefore, that could
5 potentially increase the mortality estimated by the
6 model compared to a situation where, if the modeling
7 had been accounting for that behavior, nocturnal
8 migration as represented in the winter-run Chinook
9 salmon life cycle model, that those effects would have
10 been lessened.

11 And I think those are important types of
12 considerations for moving forward and developing
13 protective criteria. Those are the types of
14 considerations, I think, that will be needed to be
15 developed for full operations of California WaterFix.

16 MR. OBEGI: Thank you. Just to clarify, I
17 thought at the beginning there you said that this life
18 cycle model did not indicate higher abundances and
19 higher cohort replacement under No Action Alternative.
20 And I believe the text on this page clearly states
21 that, and I wanted to just clarify your testimony.

22 WITNESS GREENWOOD: I said -- I intended to
23 say that the life cycle model did not show that the
24 cohort replacement rate or abundance was higher under
25 project than the No Action. So it's higher -- the

1 results show that it was higher under No Action
2 Alternative than under proposed action. If I didn't
3 say that, I apologize.

4 MR. OBEGI: Thank you. I appreciate the
5 clarification.

6 In developing your testimony on the effects of
7 salmon survival in the Delta from WaterFix, did you
8 consider the effects of Delta outflow on salmon
9 survival?

10 WITNESS GREENWOOD: Delta outflow,
11 specifically Delta outflow, that variable was -- is
12 captured in as much as tools, such as the winter-run
13 Chinook salmon analysis -- or sorry, for example, the
14 Delta passage model includes consideration of flows in
15 the Delta channels, which contribute to Delta outflow.
16 One main analysis that we considered didn't explicitly
17 have Delta outflow in it, but it did assess fry rearing
18 habitat within San Pablo Bay as a function of
19 salinity -- essentially salinity electrical
20 conductivity, which is a function of Delta outflow.

21 MR. OBEGI: Are you aware that the State Water
22 Board's 2017 Final Scientific Basis Report concludes
23 that increased Delta outflow results in higher salmon
24 survival?

25 WITNESS GREENWOOD: I'd to have see the

1 specific. But I don't recall specifically seeing that.

2 MR. OBEGI: And do -- is it your professional
3 opinion that the levels of salmon survival through the
4 Delta under the No Action Alternative are the result of
5 regulatory requirements that provide reasonable
6 protection for fish and wildlife?

7 WITNESS GREENWOOD: As I mentioned, I think,
8 earlier, the basis for our comparison was the existing
9 regulations as, for example, the D1641 regulations
10 currently in place that are for reasonable protection.
11 So that's the basis for my comparison being reasonable
12 protection. I think that's the same bit that we
13 covered earlier.

14 MR. OBEGI: So if existing -- strike that.

15 If in the No Action Alternative does not
16 provide reasonable protection for fish and wildlife,
17 does any of your testimony provide a basis for the
18 Board to determine what would constitute reasonable
19 protection for fish and wildlife?

20 WITNESS GREENWOOD: My testimony is focused on
21 the comparison to the No Action Alternative and, as I
22 said, with the inclusion of the existing regulations
23 that are for reasonable protection. So to the --
24 that -- that's my comparison. To the extent that
25 that's helpful for the Board, then that's my -- that's

1 the focus of my comparison.

2 MR. OBEGI: Thank you. Let's move upstream to
3 Dr. Wilder and give Dr. Greenwood a break here.

4 Dr. Wilder, thank you for being here. Is it
5 correct that you're -- the basis for your testimony is
6 the same as Dr. Greenwood, that you used a comparison
7 with existing regulatory requirements in comparison to
8 the No Action Alternative?

9 WITNESS WILDER: The basis of my testimony is
10 a comparison of the No Action Alternative to the
11 proposed project.

12 MR. OBEGI: And you were listening to my
13 cross-examination of Dr. Greenwood, were you not?

14 WITNESS WILDER: In and out.

15 MR. OBEGI: I understand. I'm not that
16 interesting.

17 CO-HEARING OFFICER DODUC: I think you just
18 got the quote of the day.

19 MR. OBEGI: Are you aware that the State Water
20 Board's 2010 Public Trust Flow Criteria Report
21 concluded that existing flows failed to protect fish
22 and wildlife?

23 WITNESS WILDER: I'm aware that that's what it
24 says, yes.

25 MR. OBEGI: And you're aware that the State

1 Water Board's 2017 Final Scientific Basis Report for
2 the Phase 2 Update of the Water Quality Control Plan
3 concludes that existing flow and water temperatures
4 failed to adequately protect fish and wildlife?

5 CO-HEARING OFFICER DODUC: Before you answer
6 that, Dr. Wilder, I think there's a few objections to
7 be voiced.

8 MR. KELLY: Yeah, I'm Dan Kelly from -- Dan
9 Kelly, Placer County Water Agency.

10 I'm going to object to that question.
11 Mr. Obegi keeps referring to that document as the State
12 Water Board Scientific Basis Report. My understanding
13 is that that is a staff report that is part of an
14 ongoing process before the Board. That report's not
15 been adopted, so it's not really a State Water Board
16 report. It's a staff report; it's hearsay. And I
17 don't know that it's properly before the witnesses.

18 CO-HEARING OFFICER DODUC: Hearsay is allowed,
19 but -- so, overruled. It's noted it's a staff report,
20 that is before the Board -- that's not yet before the
21 Board. But other than that, it is overruled because
22 hearsay is allowed.

23 Mr. Bezerra.

24 MR. BEZERRA: Yes, Ryan Bezerra. So I guess
25 I'll state an additional objection on the grounds of

1 vague and ambiguous that it's a long report filled with
2 multiple conditions, multiple species. Mr. Obegi is
3 treating it as one conclusion as to all species under
4 all conclusions. It's vague and ambiguous, and the
5 experts cannot be expected to answer that question.

6 If you would like to ask specific questions
7 about specific parts of the report, that's the way to
8 do this.

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

10 MS. DES JARDINS: I just wanted to remind --

11 CO-HEARING OFFICER DODUC: Is the microphone
12 on?

13 MS. DES JARDINS: I believe so.

14 CO-HEARING OFFICER DODUC: why am I not
15 hearing you?

16 MS. DES JARDINS: I'm misreading the little
17 green light. Apologize.

18 So I just wanted to remind the Hearing
19 Officers that this issue was brought up before the
20 hearing, and many of the environmental parties wanted
21 to have the Bay Delta Phase 2 Update completed. And
22 the ruling was that that was difficult to do because of
23 timing.

24 CO-HEARING OFFICER DODUC: Ms. Des Jardins,
25 I've already overruled Mr. Kelly.

1 MS. DES JARDINS: Yeah, but I did want to
2 remind you that there was a ruling that the Phase 2
3 Scientific Basis Report would have informed this
4 proceeding.

5 CO-HEARING OFFICER DODUC: Thank you.

6 Ms. Ansley.

7 MS. ANSLEY: I waited my turn. We would like
8 to --

9 CO-HEARING OFFICER DODUC: Thank you. I
10 appreciate the courtesy.

11 MS. ANSLEY: We'd just like to join and we'd
12 like to also get clarification/reminder that the
13 referenced report's 2010 -- 2010, which was not adopted
14 by the Board in 2017, are staff reports. We would like
15 to make that clear.

16 CO-HEARING OFFICER DODUC: It's perfectly
17 clear. Thank you.

18 Let's let Mr. Williams voice his objection.

19 MR. WILLIAMS: Thank you. Philip Williams for
20 Westlands.

21 CO-HEARING OFFICER DODUC: I didn't think
22 you'd be endorsing Mr. Obegi, but...

23 MR. WILLIAMS: Personally, absolutely, without
24 hesitation; however, as to the introduction of staff
25 reports, we would object on the basis of hearsay.

1 Thank you.

2 CO-HEARING OFFICER DODUC: I will turn to all
3 the attorneys up here.

4 My understanding is hearsay information
5 obviously will need to be considered in the proper
6 context. But if it's relevant to an issue that's
7 before us, it is something that is allowable in our
8 proceedings.

9 MR. DEERINGER: So as we clarified/summarized
10 in the August 31st, 2017 ruling letter, over a timely
11 objection, hearsay can be admitted only for -- only to
12 support something that is otherwise supported in the
13 record, if that makes sense. So hearsay can't serve as
14 an independent basis -- the only basis for any finding
15 that the Board may make at the conclusion of this
16 proceeding.

17 CO-HEARING OFFICER DODUC: Okay.

18 MR. OBEGI: One point of clarification. I
19 believe Ms. Ansley said that the 2010 Public Trust
20 Flows Criteria Report was not adopted by the Board.
21 That's an incorrect statement. The Board did adopt it
22 after notice and hearing.

23 CO-HEARING OFFICER DODUC: Yes, I did remember
24 that torturous discussion.

25 Mr. Bezerra? Your shininess is getting more

1 and more tarnished.

2 MR. BEZERRA: I knew that was going to be a
3 double edged sword.

4 Just my objection continues as to vague and
5 ambiguous. We should not be asking questions about
6 when the report says one thing --

7 CO-HEARING OFFICER DODUC: Understand. And
8 Mr. Obegi will clarify his question.

9 MR. OBEGI: Let's move on.

10 CO-HEARING OFFICER DODUC: Yes.

11 MR. OBEGI: Could you turn to Page 915 Of the
12 Biological Opinion.

13 Dr. Wilder, I'd like to talk to you about
14 reasonable protection of winter-run and spring-run and
15 fall-run Chinook salmon below Shasta Dam.

16 Is it your understanding that the existing
17 2009 Biological Opinion adequately protects winter-run
18 Chinook salmon below Shasta Dam from
19 temperature-dependent mortality?

20 WITNESS WILDER: Well, there's currently a
21 process underway to revise the RPA. I can't speak to
22 the adequacy of it, but NMFS beliefs that the
23 temperature currently -- the temperature rules
24 currently underway are in need of revision.

25 MR. OBEGI: Could you explain why you can't

1 testify as to the adequacy of that? Is that beyond the
2 scope of your expertise?

3 WITNESS WILDER: Because I haven't analyzed
4 the data.

5 MR. OBEGI: Okay. Does the biological opinion
6 conclude that temperature dependant mortality of
7 winter-run Chinook salmon is similar to the No Action
8 Alternative?

9 WITNESS WILDER: I'm sorry. I was trying to
10 break that down. Can you please repeat the question?

11 MR. OBEGI: The NMFS biological opinion, I
12 think it's the fourth or fifth line in the first full
13 paragraph, does the NMFS biological opinion conclude
14 that WaterFix would result in similar levels of
15 temperature-dependant mortality of winter-run Chinook
16 salmon to the No Action Alternative?

17 WITNESS WILDER: Are you asking me to look for
18 a specific section because, if so, I wonder if you
19 would point me to that.

20 MR. OBEGI: Yes, the line that begins in
21 Section 2.5.1-.

22 WITNESS WILDER: So it didn't say anything
23 about temperature dependant mortality. It does talk
24 about effects of temperatures, if that's what you mean.
25 And it does say that they are -- they ought to not be

1 significantly different.

2 MR. OBEGI: Thank you. And then, in the next
3 sentence, does it conclude that the temperature effects
4 of both the proposed action and the No Action
5 Alternative are so considerable that the viability of
6 this run is limited?

7 WITNESS WILDER: Yes, that's what it says.

8 MR. OBEGI: And would you please turn to Page
9 916, Mr. Hunt.

10 And this, again, with respect to winter-run,
11 the text in the paragraph that begins in Section
12 2.5.1-, it reaches a similar conclusion with respect to
13 the diversity prong of the viability of salmon,
14 correct?

15 WITNESS WILDER: It reaches the same
16 conclusion as before.

17 MR. OBEGI: And, Mr. Hunt, would you please
18 turn to Page 94.

19 And this table synthesizes the effects of the
20 project on winter-run Chinook salmon. Does -- in the
21 far right column, does it state that temperature
22 effects account for a large amount of mortality?

23 WITNESS WILDER: Yes, that's what it says.

24 MR. OBEGI: And, Mr. Hunt, if you would please
25 turn to Page 14.

1 Mr. Wilder, you previously testified that you
2 understand that the NMFS -- that the National Marine
3 Fishery Service and Bureau of Reclamation have
4 reinitiated consultation and are revising the Shasta
5 RPA; is that correct?

6 WITNESS WILDER: That's correct.

7 MR. OBEGI: And on Page 14, the paragraph
8 beginning with "On August 2nd," does the Biological
9 Opinion explain this process?

10 WITNESS WILDER: Which biological opinion and
11 which process?

12 MR. OBEGI: Does it -- sorry. Does this
13 paragraph of the WaterFix Biological Opinion explain
14 the process of revising the Shasta RPA?

15 WITNESS WILDER: I think it gives a summary of
16 it, yes.

17 MR. OBEGI: And at the end of that paragraph,
18 does it indicate that the Shasta RPA adjustment will
19 control if there are different requirements than what's
20 modeled in the proposed CWF operating criteria?

21 WITNESS WILDER: That's what it says, yes.

22 MR. OBEGI: Have you looked at the
23 January 19th, 2017 revised draft, reasonable and
24 prudent alternative for Shasta Dam?

25 WITNESS WILDER: Yes.

1 MR. OBEGI: Mr. Hunt, will you please pull up
2 NRDC-29.

3 This is a true and correct copy of that
4 Revised Draft RPA. And if you would turn to Page 214
5 of the pdf.

6 Dr. Wilder, is it your understanding that the
7 -- that this Revised Draft RPA proposes changes in
8 carryover storage requirements at Shasta Dam?

9 WITNESS WILDER: I would need a little more
10 time to look this over. I can't point to one page and
11 understand the document.

12 MR. OBEGI: Sure. Not the specifics of what
13 would be required in any given year, but you're not
14 sure whether it requires greater carryover storage in
15 certain water year types?

16 WITNESS WILDER: Again, I don't know if this
17 is a -- a proposal or a recommendation or what.

18 MS. ANSLEY: Also, objection to this document
19 and this line of questioning. So far, we've been
20 confirming texts of sentences. And now we're looking
21 at a Draft RPA. And I would question the relevance of
22 a draft RPA that has not been finalized or adopted to
23 the witness's testimony for the incremental effects of
24 the California WaterFix.

25 CO-HEARING OFFICER DODUC: Hold on.

1 Ms. Morris, thank you for waiting.

2 MS. MORRIS: I would join the objection and
3 would note at the beginning of this transmission, on
4 the first page, it's a January 19th letter. It says
5 it's considered a draft and it should be considered a
6 draft and it may be amended subject to further
7 discussion and refinement. So it's not relevant unless
8 he has a final.

9 CO-HEARING OFFICER DODUC: Mr. Obegi, your
10 response?

11 MR. OBEGI: Thank you. I believe that the
12 line of questioning acknowledged that it was a draft.
13 I believe that counsel for DWR is wrong, and NRDC would
14 strongly object to the notion that the incremental
15 effects of WaterFix are the only things that are
16 relevant to this hearing.

17 And I would further point to the fact that the
18 witness has acknowledged that he is familiar with this
19 document and it is, as such, relevant to what
20 constitutes reasonable protection for fish and
21 wildlife.

22 CO-HEARING OFFICER DODUC: Ms. Ansley?

23 MS. ANSLEY: I would follow up and say, with
24 the information provided by Ms. Morris, this is a draft
25 subject to revision. It is speculative to provide

1 conjecture on what this final RPA, if indeed there is
2 one finally adopted, will actually contain and the
3 relevance of a draft document to the Cal WaterFix
4 project before you.

5 CO-HEARING OFFICER DODUC: Couldn't the same
6 be said about the California WaterFix proposal?

7 MS. ANSLEY: Well, the California WaterFix
8 proposal, we have criteria, we have the modeling, we
9 have --

10 CO-HEARING OFFICER DODUC: Which are all
11 subject to change, based on studies, based on real-time
12 operations.

13 MS. ANSLEY: They are. But we don't know the
14 applicability of this to the Cal WaterFix because this
15 is not a regulatory requirement.

16 CO-HEARING OFFICER DODUC: With that caveat,
17 overruled.

18 Please proceed, Mr. Obegi.

19 MR. OBEGI: Dr. Wilder, I think the question
20 was whether you understood that this proposed RPA, this
21 draft proposed RPA would increase carryover storage
22 requirements as compared to the 2009 RPA.

23 WITNESS WILDER: My answer remains. I need to
24 look at this document more to be able to say more than
25 what you're asking me to say or even what you're asking

1 me to say.

2 MR. OBEGI: So in your testimony, you did not
3 consider this Revised Draft RPA in determining what
4 constitutes reasonable protection for fish and wildlife
5 below Shasta Dam?

6 CO-HEARING OFFICER DODUC: Ms. Morris?

7 MS. MORRIS: Objection, misstates testimony,
8 as we just had read in the California WaterFix
9 Biological Opinion it acknowledges that, if there is a
10 change because of the reconsultation, that it would
11 override right what's in the CWF -- what's currently in
12 the CWF.

13 CO-HEARING OFFICER DODUC: I understand that.
14 The question was whether Dr. Wilder considered it.

15 Did I hear that correctly, Mr. Obegi?

16 MR. OBEGI: You did.

17 CO-HEARING OFFICER DODUC: Overruled.

18 Dr. Wilder, did you consider it?

19 WITNESS WILDER: I considered the Biological
20 Opinion which considers this.

21 MR. OBEGI: But you didn't consider the
22 specific carryover storage requirements of this
23 proposed Draft RPA?

24 WITNESS WILDER: I -- no, not in the way that
25 I think you're inferring.

1 MR. OBEGI: And you didn't consider changes to
2 the water temperature standards that are being proposed
3 in this proposed Draft RPA?

4 WITNESS WILDER: Well, we did with respect to
5 the fact that NMFS was -- NMFS assisted in developing
6 the temperature threshold criteria used for the
7 analysis of flows in -- of temperatures in the
8 Sacramento River.

9 MR. OBEGI: And you're aware that one of the
10 basis for the reinitiation of consultation was new
11 scientific information regarding the effects of water
12 temperatures?

13 WITNESS WILDER: Which we considered.

14 MR. OBEGI: But you didn't consider this
15 specific water temperature effectuals in this Revised
16 Draft RPA in preparing your testimony?

17 WITNESS WILDER: I don't think there were -- I
18 don't think they were established yet. But we did
19 certainly consider the temperatures that were being
20 considered for this process. And it's written in the
21 Biological Opinion that -- that the RPA revisions would
22 be underway.

23 MR. OBEGI: So I'd like to ask a couple
24 questions of either Ms. White or Ms. Parker regarding
25 the CalSim modeling of the 2017 Shasta Revised RPA.

1 Is it your understanding that the Biological
2 Opinion models compliance with that 2017 Revised Draft
3 RPA in CalSim?

4 WITNESS PARKER: Sorry. Can you say that one
5 more time?

6 MR. OBEGI: Is it your understanding that, in
7 this 2017 WaterFix Biological Opinion, they -- the
8 CalSim modeling that was used did not incorporate the
9 Revised Draft 2017 Shasta RPA?

10 WITNESS PARKER: That is correct.

11 MR. OBEGI: Has the Bureau of Reclamation
12 conducted CalSim modeling of implementing the Revised
13 Shasta RPA?

14 WITNESS WHITE: Can I ask a clarification?
15 Are you asking for the CalSim modeling for the proposal
16 that's on the screen?

17 MR. OBEGI: Yes.

18 WITNESS WHITE: Because I don't think we have
19 draft -- I don't think we have a revised RPA at this
20 point.

21 MR. OBEGI: But you, as Ms. Parker testified,
22 the Bureau of Reclamation had prepared some CalSim
23 modeling of the Revised Draft RPA, not in context --
24 not in conjunction with WaterFix, separate from that.

25 WITNESS WHITE: Thank you for that

1 clarification.

2 MR. OBEGI: Sorry, good point.

3 Does the CalSim modeling of implementing the
4 Revised Shasta RPA result in significant changes to CVP
5 operations?

6 WITNESS PARKER: Yes.

7 MR. OBEGI: Could that reduce the water supply
8 scene in -- under the No Action Alternative?

9 WITNESS PARKER: Yes.

10 MR. OBEGI: Could it, if implemented in
11 conjunction with WaterFix, result in lower water supply
12 than what is modeled in the Biological Opinion?

13 WITNESS PARKER: Yes. I'd rather respond that
14 the proposal is inoperable. That's what we've
15 discovered by doing CalSim modeling. And we're
16 currently in discussions with National Marine Fisheries
17 on how to best reformulate this proposed amendment.

18 But it has nothing to do with WaterFix. We've
19 not implemented WaterFix in a proposed RPA amendment
20 study.

21 MR. OBEGI: And in that CalSim modeling, did
22 the Bureau assume waivers of Decision 1641 outflow
23 requirements in certain critical dry years?

24 WITNESS PARKER: Yes.

25 MR. OBEGI: Thank you. If we could return

1 back to Dr. Wilder.

2 Turning back, Mr. Hunt, to State Water Board
3 Exhibit 106, and turning to Page 22.

4 Dr. Wilder, is it correct that the Biological
5 Opinion only models -- analyzes water temperature
6 impacts from WaterFix at a 2030 level of climate
7 change?

8 WITNESS WILDER: Yes, that's correct.

9 MR. OBEGI: And it uses the CMIP3 climate
10 change projections, correct?

11 WITNESS WILDER: I'm not the person to answer
12 that question. Perhaps one of the modelers could.

13 MR. OBEGI: Mr. Reyes, do you know?

14 WITNESS REYES: Could you repeat that
15 question? I wasn't paying attention. Sorry.

16 MR. OBEGI: I have this affect on the rest of
17 panel apparently.

18 Does the NMFS Biological Opinion use the CMIP3
19 climate change projections?

20 WITNESS REYES: Actually, the NMFS -- I'm not
21 familiar with the Biological Opinion modeling, so wrong
22 person to ask me for this.

23 MR. OBEGI: All right. Would you please turn
24 Page 294, Mr. Hunt.

25 Dr. Wilder, do you expect that the effects of

1 climate change will become more severe after 2030 with
2 respect to water temperatures and winter-run Chinook
3 salmon?

4 WITNESS WILDER: You mean more severe relative
5 to now?

6 WITNESS WILDER: Yes. That's what the climate
7 projections I've seen predict.

8 MR. OBEGI: Did the Biological Opinion reach a
9 similar conclusion, to your understanding?

10 And I think that the paragraph that begins
11 "Another important overall consideration," that might
12 be relevant.

13 WITNESS WILDER: Yes, that's what it says.

14 MR. OBEGI: And is it your understanding that
15 it reached similar conclusions for spring-run Chinook
16 salmon?

17 MS. ANSLEY: Objection. Similar to climate
18 change?

19 MR. OBEGI: Similar conclusions regarding the
20 effects of climate change after 2030.

21 WITNESS WILDER: To spring-run?

22 MR. OBEGI: Spring-run Chinook salmon.

23 WITNESS WILDER: Yes.

24 MR. OBEGI: And the same is true with respect
25 to Central Valley steelhead?

1 WITNESS WILDER: Without knowing -- without
2 seeing it, I don't know for sure. But I would guess
3 that that's the case.

4 MR. OBEGI: And, Mr. Hunt, if you would please
5 turn to Page 1206.

6 And, Dr. Wilder, is it your understanding that
7 one of the terms for the reinitiation of consultation
8 is the year 2030 because of climate change effects?

9 WITNESS WILDER: Unless you're going to direct
10 me to a specific point, all I can say is that I know
11 that that's one -- that one of the terms for
12 reinitiation is usually something related to that.

13 MR. OBEGI: Yeah, I think it's Point 8 on this
14 page. But --

15 WITNESS WILDER: Can you scroll up to the
16 header of this section?

17 MR. OBEGI: You need to go to the prior page
18 to...

19 WITNESS WILDER: Okay. Could you please
20 scroll down?

21 I'm not sure exactly that it's saying that. I
22 believe what it's saying is that one example of when
23 reinitiation could occur is when this opinion hasn't
24 been superseded before 2030 or unless the DWR and
25 Reclamation can demonstrate that conditions would be

1 similar to those that were analyzed for the Biological
2 Opinion.

3 MR. OBEGI: And, Mr. Reyes, are you familiar
4 with the CalSim 3 model?

5 WITNESS REYES: Yes, I am familiar with that
6 model.

7 MR. OBEGI: And does the CalSim 3 model
8 provide climate change analysis for the time period
9 2045 to 2075?

10 MR. MIZELL: Objection, there hasn't been any
11 modeling presented in this hearing to date about the
12 CalSim 3 model. It was a model that was made public
13 after the analysis was done. It's irrelevant at this
14 point.

15 CO-HEARING OFFICER DODUC: Mr. Obegi?

16 MR. OBEGI: The only reason why I ask is
17 twofold: one, the availability of additional
18 information regarding climate change effects in the
19 longer term; and, two, the existence of subsequent
20 modeling information that was not included in this
21 application.

22 CO-HEARING OFFICER DODUC: Overruled.

23 WITNESS REYES: The CalSim 3 model that's just
24 been recently released is a beta version and is not in
25 final form. And we have not released climate change

1 data sets with that model yet.

2 MR. OBEGI: But the intention is to be able to
3 analyze climate change effects in intermediate period
4 of 2045 to 2075, correct?

5 MR. MIZELL: Objection. I'll restate the
6 previous objection of this is irrelevant as to what
7 CalSim 3 may or may not do in the future. The fact of
8 the matter is it hasn't been presented for this project
9 at this time. And as Mr. Reyes just indicated, it's a
10 beta version. To indicate what it might prove the in
11 the future with regard to this project is not only
12 speculative but irrelevant.

13 CO-HEARING OFFICER DODUC: So are you saying
14 that should there be a -- are you saying, Mr. Mizell,
15 that CalSim 3 will not be used in analyzing your
16 Supplemental EIR?

17 MR. MIZELL: I'm not -- I'm not making any
18 assertions as to what might be in the Supplemental EIR.
19 I'm saying until we know that there's a CalSim 3 run
20 that points to what the effects of this project will
21 be, we do not have any information as to what
22 assumptions it will or will not include. So it's pure
23 speculation at this point to try and prejudge that.

24 CO-HEARING OFFICER DODUC: Mr. Obegi, to his
25 point?

1 MR. OBEGI: I'm not trying to prejudge what
2 model will or will not be used in any potential
3 subsequent modeling. I'm merely trying to ask about --
4 ascertain whether the Department of Water Resources has
5 done updated climate modeling in CalSim 3. And I
6 believe that I have a document that can shed further
7 light on that from the Department of Water Resources.

8 CO-HEARING OFFICER DODUC: Just because
9 they've done modeling doesn't mean that they've done it
10 for the California WaterFix project proposal, or is
11 that where you're going?

12 MR. OBEGI: I believe that is correct. I
13 believe that it -- I am not a CalSim expert, but I
14 believe that the modeling done by DWR does use updated
15 climate projections and does look at different time
16 periods than what's available in the CalSim II model.
17 But if this is going prove too much of a distraction,
18 we can move on.

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

20 MR. OBEGI: Thank you.

21 Would you please pull up, Mr. Hunt, NRDC-20,
22 which are the California Endangered Species Act
23 Findings of Facts. And turning to Page 378 -- I think
24 that's 374. The page number's to bottom left; it's not
25 that visible.

1 And in this paragraph that begins with
2 "Permitee," Dr. Wilder, is it your understanding that
3 the interim take permit for California WaterFix only is
4 applicable until the year 2042?

5 WITNESS WILDER: Yes, that's -- I believe
6 that's true.

7 MR. OBEGI: And is one of the explanations for
8 that because the effects of climate change are expected
9 to be more severe?

10 WITNESS WILDER: Yes.

11 MR. OBEGI: And turning to Page 386 --

12 CO-HEARING OFFICER DODUC: Ms. Ansley?

13 MS. ANSLEY: Just as a quick point of
14 clarification, this document is also already in the
15 record as DWR-1095, just to avoid duplication.

16 CO-HEARING OFFICER DODUC: Thank you.

17 MR. OBEGI: And would you scroll up a little
18 bit, and scroll up a little bit further.

19 Dr. Greenwood, is it your understanding that
20 the California Fish and Wildlife -- California
21 Department of Fish and Wildlife's incidental take
22 permit is only applicable until the year 2042 in part
23 because of the climate change effects on Delta smelt?

24 WITNESS GREENWOOD: I'm not seeing that on
25 this screen.

1 MR. OBEGI: I think I gave you the wrong page
2 number. How about with respect to longfin smelt?

3 WITNESS GREENWOOD: I see that, yes.

4 MR. OBEGI: And turning to page -- I think
5 it's 389 maybe.

6 Apparently not 389. We can move on. That's
7 fine.

8 Mr. Hunt, would you please pull up NRDC-29,
9 which is, again, the Shasta Revised Draft RPA, and
10 turning to Page 209.

11 This figure provides estimated -- estimates of
12 egg-to-fry survival of winter-run Chinook salmon down
13 to Red Bluff Diversion Dam.

14 Dr. Wilder, are you familiar with this
15 graphic?

16 WITNESS WILDER: I've probably seen it before,
17 but I don't -- you know, it's not committed to memory.

18 MR. OBEGI: And in 2014, it estimates the
19 egg-to-fry survival -- sorry -- that egg-to-fry
20 survival was 5.9 percent. Is that a fair
21 characterization of this table, this figure?

22 WITNESS WILDER: Yes.

23 MR. OBEGI: Do you think that 5.9 percent
24 egg-to-fry survival was a result of reasonable
25 protection of fish and wildlife?

1 WITNESS WILDER: I don't know. I would need
2 more information than just looking at this to be able
3 to conclude that.

4 MR. OBEGI: So you think that there may be
5 some years in which 5 percent egg-to-fry survival is
6 reasonable?

7 MS. ANSLEY: I believe that it is his
8 testimony that --

9 WITNESS WILDER: I didn't say that.

10 MS. ANSLEY: He said that he'd have to look
11 more at this to draw any conclusions.

12 MR. OBEGI: It was a follow-up question.

13 WITNESS WILDER: And, no, I did not say that.

14 CO-HEARING OFFICER DODUC: Okay.

15 MR. OBEGI: And is it your understanding that
16 the No Action Alternative resulted in the extremely low
17 egg-to-fry survival observed in 2014 and 2015?

18 CO-HEARING OFFICER DODUC: Objection,
19 Ms. Ansley?

20 MS. ANSLEY: Yes. The No Action
21 Alternative in -- did you say 2014-2015?

22 MR. OBEGI: Yes.

23 MS. ANSLEY: Yes, I do object. I believe that
24 is vague and ambiguous and irrelevant --

25 CO-HEARING OFFICER DODUC: Irrelevant?

1 MS. ANSLEY: There was no No Action
2 Alternative in 2014-2015. There was a difference,
3 which our modelers can explain, between the No Action
4 Alternative and existing conditions.

5 CO-HEARING OFFICER DODUC: Yes, we've gone
6 through that. Sustained.

7 MR. OBEGI: Do you believe that the water
8 project operations in 2014 and 2015 that resulted in
9 low -- low egg-to-fry survival provided reasonable
10 protection of fish and wildlife?

11 MR. MIZELL: Objection, states facts that are
12 not in evidence. There's nothing to indicate that the
13 5.9 or 4.2 survival rate was due solely to project
14 operations.

15 MR. OBEGI: That was not part of the question.

16 MR. MIZELL: That was exactly the assertion
17 made in the question.

18 CO-HEARING OFFICER DODUC: All right.

19 Mr. Obegi, your question again?

20 MR. OBEGI: Do you believe that the Central
21 Valley Project and State Water Project operations in
22 2014 and 2015 that resulted -- that resulted in and
23 were not the sole cause of the low survival --
24 egg-to-fry survival in those years?

25 CO-HEARING OFFICER DODUC: Objection is

1 sustained. Try again, Mr. Obegi.

2 MR. OBEGI: Can I understand the grounds for
3 that objection?

4 CO-HEARING OFFICER DODUC: You implied that a
5 project operation was the cause of the low effects.

6 MR. OBEGI: I specifically stated that it was
7 a cause, not the only cause.

8 CO-HEARING OFFICER DODUC: But you did say it
9 resulted in.

10 MR. OBEGI: Dr. Wilder, do you believe that
11 Central Valley Project operations was a cause of low
12 egg-to-fry mortality in 2014? Sorry. High egg-to-fry
13 mortality, low egg-to-fry survival?

14 MR. MIZELL: Objection.

15 CO-HEARING OFFICER DODUC: Same objection, I
16 assume?

17 MR. MIZELL: Same objection.

18 CO-HEARING OFFICER DODUC: Ms. Nikkel?

19 MS. NIKKEL: I'm also objecting on the grounds
20 of assuming facts not in evidence and the -- and also
21 hearsay as to the level of mortality that existed and
22 occurred in 2014 and 2015.

23 CO-HEARING OFFICER DODUC: Okay. We won't go
24 to the hearsay thing again.

25 Mr. Obegi, try again if you want to ask this

1 question.

2 MR. OBEGI: I'm trying to get at whether
3 existing operations of the Central Valley Project at
4 Shasta Dam provided reasonable protection for fish and
5 wildlife. That was the -- that is the basis for this
6 question.

7 CO-HEARING OFFICER DODUC: All right. And
8 Mr. Mizell, does that -- actually, you know, all this
9 is probably irrelevant.

10 Dr. Wilder, do you have an opinion on that
11 question? Because it is not exactly within your
12 testimony.

13 WITNESS WILDER: There could be a lot of
14 things going on in those two years. I can't pinpoint
15 it on any one cause.

16 MR. OBEGI: That's fine.

17 Please turn Page 1098 of the Biological
18 Opinion, which is State Water Board 106. And if you
19 would, at the bottom there, this is a table -- you'll
20 probably need to scroll up to show Dr. Wilder that.

21 This is a table summarizing the effects of
22 WaterFix on fall-run Chinook salmon. And does -- at
23 the bottom here, does it conclude that the proposed
24 action results in a large amount of mortality from
25 dewater of fall-run Chinook salmon redds?

1 WITNESS WILDER: Can you scroll up to the
2 headers again? Okay. Thank you.

3 Can you please repeat the question?

4 MR. OBEGI: Does this table in the Biological
5 Opinion conclude that the proposed action results in a
6 large amount of mortality of fall-run Chinook salmon
7 from redd dewatering?

8 WITNESS WILDER: I believe the header
9 indicates that it's the proposed action, the baseline,
10 and existing conditions.

11 Can you scroll one more time?

12 So I can't isolate the effects of the project
13 in -- from this table, no.

14 MR. OBEGI: So you think that the cumulative
15 effects and existing conditions are irrelevant for the
16 Board's consideration of what constitutes reasonable
17 protection?

18 CO-HEARING OFFICER DODUC: I can hear an
19 objection now. Go ahead. Misstates the testimony,
20 Mr. Mizell?

21 MR. MIZELL: Yes.

22 CO-HEARING OFFICER DODUC: Sustained.

23 MR. OBEGI: Dr. Wilder, does the Biological
24 Opinion conclude that the effects of the proposed
25 action, in combination with the environmental baseline

1 and cumulative effects, results in high mortality of
2 fall-run Chinook salmon from egg dewatering?

3 WITNESS WILDER: Yeah, I believe that's what
4 it says.

5 MR. OBEGI: And does it conclude that those
6 effects are 15 to 36 percent of all fall-run redds
7 being dewatered across all river segments?

8 WITNESS WILDER: That's what it says, although
9 I think they've probably clarified that this means all
10 rivers segments analyzed.

11 MR. OBEGI: And you think that is reasonable?

12 WITNESS WILDER: I don't know.

13 MR. OBEGI: Thank you.

14 CO-HEARING OFFICER DODUC: Mr. Obegi, are you
15 still estimating another hour? You still have, I
16 think, three other lines of questioning.

17 MR. OBEGI: Yes. This has gone a little bit
18 slower. There have been a number of objections here.
19 So I'm on Page 15 of 29.

20 CO-HEARING OFFICER DODUC: All right. Let's
21 go ahead and keep going. And we do have a hard stop at
22 5:30. Hopefully we can get through that.

23 MR. OBEGI: We will.

24 Scrolling up just a little bit above, onto
25 Page 1097, I believe. At the very top of Page 1097,

1 does the Biological Opinion conclude that the proposed
2 action, in combination with the environmental baseline
3 and cumulative effects, results in high significant
4 adverse effects to fall-run Chinook salmon from
5 increased upstream temperatures?

6 CO-HEARING OFFICER DODUC: Ms. Ansley?

7 MS. ANSLEY: Yeah, I'd like to lodge an
8 objection at this time. This is a little bit of a
9 global one but to this question as well in particular.
10 We've seen a number of line of questions where
11 our witnesses are asked merely to confirm what these
12 documents actually say. In the beginning, I thought
13 that they were laying foundations for further
14 questions. Sometimes there's a "do you agree," but
15 more often than not, we're moving between documents,
16 and our witnesses are just confirming what the
17 biological opinion says or doesn't say, and it doesn't
18 actually go to the -- the documents do speak for
19 themselves; it didn't go to their opinions or testimony
20 or circle back. These aren't actually foundational
21 questions.

22 CO-HEARING OFFICER DODUC: I thought he was
23 circling back to the testimony of reasonable
24 protection, but I could be wrong.

25 Mr. Obegi?

1 MS. ANSLEY: It would be a very -- multi-hour
2 circling back.

3 CO-HEARING OFFICER DODUC: It's an important
4 point.

5 Mr. Obegi, your response?

6 MR. OBEGI: Thank you. I have circled back to
7 the reasonable protection standard on multiple
8 occasions, in some cases, unsuccessfully, in other
9 cases, successfully. And I will endeavor to make sure
10 that I close that loop every time.

11 CO-HEARING OFFICER DODUC: All right.
12 Proceed.

13 WITNESS WILDER: So, yeah, that's what it
14 says. It says there's a high magnitude overall effect
15 of the proposed project, baseline, and cumulative
16 effects.

17 MR. OBEGI: And do you agree with that
18 conclusion?

19 WITNESS WILDER: I don't know. I haven't
20 analyzed it. All I've looked at is the magnitude of
21 the PA effect, which is the sixth column there.

22 MR. OBEGI: So in --

23 WITNESS WILDER: It would be where it says
24 "Lower and unexpected adverse effect."

25 MR. OBEGI: Thank you. Let's move from

1 temperature to upstream flows. Is it your professional
2 opinion that existing flows in the Sacramento River
3 provide reasonable protection for fish and wildlife?

4 MR. MIZELL: I'm going to object. It's
5 outside the scope of this witness's testimony.
6 Previously this line of questioning was allowed with
7 Dr. Greenwood because Mr. Obegi found a statement in
8 his testimony indicating that the existing conditions
9 were reasonably protective.

10 I've searched Dr. Wilder's testimony, and
11 there is no such claim in his testimony, in which case,
12 the reasonableness of the existing conditions is beyond
13 the scope, and therefore, there's no basis to continue
14 questioning the existing conditions since this hearing
15 is about the incremental effects of the California
16 WaterFix.

17 CO-HEARING OFFICER DODUC: Mr. Obegi, before I
18 get to Mr. Jackson?

19 MR. OBEGI: I think I would use the same
20 response that I have multiple times, which is the scope
21 of this hearing is not limited to the incremental
22 effects of WaterFix. And it goes to both the
23 foundation for his testimony, which is a comparative
24 analysis, to the No Action Alternative, to assert that
25 protections are reasonable. And that requires

1 inquiring as to the reasonableness of the No Action
2 Alternative.

3 CO-HEARING OFFICER DODUC: And I would also
4 add that the cumulative effects is also what we're
5 concerned with, not just the incremental.

6 The objection is overruled.

7 WITNESS WILDER: Sorry. I was waiting for --
8 yeah, please.

9 MR. OBEGI: Is it your professional opinion
10 that existing flows in the Sacramento River provide
11 reasonable protection for fish and wildlife?

12 WITNESS WILDER: That's outside the scope of
13 what I can testify to today.

14 MR. OBEGI: So you have no opinion whether
15 existing flows are reasonable?

16 WITNESS WILDER: Not without a lot more
17 analysis.

18 MR. OBEGI: Thank you.

19 Mr. Hunt, if you will please pull up NRDC-40.

20 This is a published peer reviewed paper
21 regarding the effects of the -- using acoustic tagging
22 to study salmon's survival in wet and dry years.

23 Dr. Wilder, are you familiar with this paper?

24 WITNESS WILDER: Yes, I am.

25 MR. OBEGI: Mr. Hunt, if you would please turn

1 to Page 19. If you would scroll down a little bit
2 further.

3 Dr. Wilder is it your understanding that the
4 paper concludes that salmon survival in the Sacramento
5 River was much higher in the single wet year than in
6 the dry years?

7 WITNESS WILDER: If I'm thinking of the study
8 correctly, yes.

9 CO-HEARING OFFICER DODUC: Hold on.

10 Mr. Bezerra?

11 MR. BEZERRA: Ryan Bezerra. Objection, vague
12 and ambiguous. What is this single wet year? What are
13 the dry years? We've got a paper here. If there's
14 something specific to ask a question about, we should
15 focus on that.

16 CO-HEARING OFFICER DODUC: Dr. Wilder had said
17 that he's familiar with the report, so I assumed he
18 understood your question. But, Mr. Obegi, perhaps you
19 can expand.

20 MR. OBEGI: I assumed he understood as well,
21 but I can expand.

22 Dr. Wilder, is it your understanding that this
23 paper concluded that Chinook salmon survival was much
24 higher in the single wet year of 2011 than in the
25 low-discharge years that were analyzed in the paper?

1 WITNESS WILDER: Can you scroll down to
2 Figure 3 just so I can confirm that those are the
3 correct years?

4 CO-HEARING OFFICER DODUC: And as we're
5 scrolling, Ms. Morris?

6 MR. OBEGI: Figure 3 I believe is towards the
7 end of the paper.

8 WITNESS WILDER: So 2011 was wetter than 2004
9 year. So now if you could scroll up one figure --
10 scroll down one figure. Sorry. Could you go down one
11 more?

12 So this shows the survival is higher in the
13 river during 2011 than the other four years that were
14 evaluated.

15 MR. OBEGI: Thank you. And do you agree that
16 increased flow in Sacramento River often results in
17 higher salmon survival?

18 CO-HEARING OFFICER DODUC: I sense an
19 objection or several objections coming.

20 Ms. Morris?

21 MS. MORRIS: Objection, vague and ambiguous as
22 to what amount of flow we're talking about.

23 CO-HEARING OFFICER DODUC: Mr. Bezerra?

24 MR. BEZERRA: Yes, I agree with Ms. Morris.
25 It's vague and ambiguous. Increased as to what?

1 CO-HEARING OFFICER DODUC: Fair enough.

2 Mr. Obegi, another try?

3 MR. OBEGI: We will try again.

4 Dr. Wilder, is it your understanding that
5 increased flows in the Sacramento River during the
6 primary migratory season for juvenile winter-run
7 Chinook salmon is likely to increase survival of
8 juvenile migratory salmon during their migration
9 downstream?

10 CO-HEARING OFFICER DODUC: Mr. Bezerra?

11 MR. BEZERRA: Same objection, vague and
12 ambiguous. Increased as to what? What is the basis of
13 comparison?

14 MR. OBEGI: The witness is reportedly an
15 expert on the upstream effects of flow and temperature
16 on salmon. And I believe he has the capacity to answer
17 that question and explain if there are break points in
18 survival or other thresholds that are important.

19 CO-HEARING OFFICER DODUC: Ms. Morris?

20 MS. MORRIS: Thank you for allowing me to
21 respond.

22 This witness has already said his testimony
23 doesn't cover current river conditions. This is
24 looking at the historical period. And it's really in
25 terms of current conditions, which have nothing to do

1 with this project or the petition before the Board.

2 CO-HEARING OFFICER DODUC: Not sure I
3 understand that objection.

4 But regardless, Mr. Obegi, it seems like you
5 need to expand further on your question.

6 MR. OBEGI: In the interest of time, I think
7 it's probably best to move on. I think the point has
8 been made.

9 Dr. Wilder, are you aware of any studies that
10 show a flow-survival relationship for salmon in the
11 Sacramento River?

12 WITNESS WILDER: Nothing's coming to mind
13 right now, but it's entirely possible.

14 MR. OBEGI: So you wouldn't consider this
15 paper by Cyril Michel to show a flow-survival
16 relationship?

17 WITNESS WILDER: I haven't seen it plotted as
18 a relationship. What I see here is that, in year 2011,
19 there's a higher survival relative to the other four
20 years. That -- five data points is not a lot,
21 especially considering there's one value that's way
22 higher than the others.

23 So this paper shows higher survival in 2011
24 relative to the other years in the river. But I
25 would -- I would leave it there at that.

1 MR. OBEGI: Thank you.

2 Mr. Hunt, would you please pull up NRDC-57.

3 CO-HEARING OFFICER DODUC: And as that's being
4 pulled up, let me check with the court reporter.

5 Do you need a short break? We probably will
6 go past 5:00 is my guess.

7 (Discussion off the record)

8 CO-HEARING OFFICER DODUC: Okay. So when
9 there's a good break in your line of questioning,
10 Mr. Obegi, let's take a five-minute break.

11 MR. OBEGI: Yeah, just a couple more
12 questions.

13 Is that link not working? Okay. We can skip
14 it.

15 How about NRDC-48? And this is a NOAA
16 Fisheries 2016 presentation regarding ecological flow
17 thresholds for salmon.

18 Turning to Page 13, Dr. Wilder, does this
19 table identify potential flow recommendations?

20 MS. ANSLEY: Objection --

21 MR. OBEGI: You've run out the battery?

22 MS. ANSLEY: Yes, I did.

23 There's a lack of foundation that he's
24 familiar with this document. Was he a participant in
25 this workshop? Does he know what this chart is

1 building up to show? I just think there's a lack of
2 foundation.

3 CO-HEARING OFFICER DODUC: Lay some foundation
4 here, Mr. Obegi.

5 MR. OBEGI: I don't know that he's familiar
6 with it. I want to test whether he would agree that
7 these flow recommendations would be beneficial for
8 salmon.

9 MS. ANSLEY: I object to him answering a
10 question when he doesn't know the genesis of this chart
11 and what's really going on. I mean, obviously we can
12 read columns. But that does not give him enough
13 information in terms of how this data was put together
14 or for what purpose or something to that nature.

15 CO-HEARING OFFICER DODUC: Mr. Obegi?

16 MR. OBEGI: If the witness is unable to answer
17 whether those base flows are protective or not, that's
18 fine.

19 CO-HEARING OFFICER DODUC: Hold on. Hold on.
20 I'm sustaining the objection.

21 Mr. Obegi?

22 MR. OBEGI: Why don't we take a break then.

23 CO-HEARING OFFICER DODUC: All right. We will
24 take a break. We will return at 4:20.

25 (Recess taken)

1 CO-HEARING OFFICER DODUC: Please take a seat.

2 And before we resume, because we tend to run
3 out of time at the end, let's do a quick time check.

4 Mr. Mizell had asked, I guess it was
5 yesterday, about the possibility of getting to
6 Panel 3 -- well, looks like maybe -- what day is today?
7 Wednesday? Okay.

8 My estimate, we have at least six hours of
9 cross-examination before we circle back to Group 7.
10 And Group 7 has requested -- well, they're no longer
11 here, but they had estimated --

12 MR. JACKSON: They're in the hall in. Do you
13 want me to go get them?

14 CO-HEARING OFFICER DODUC: Sure.

15 They had estimated -- actually, I could use
16 clarification because Mr. Bezerra -- Mr. Bezerra had
17 requested three to four hours of cross-examination.
18 And, Mr. Bezerra, I assume that you have been closely
19 monitoring all the cross-examination. Do you still
20 expect to need that much time?

21 MR. BEZERRA: Yes, I have been monitoring the
22 cross-examination. I greatly appreciated Mr. Shutes'
23 efforts in relation to incidental take permit, although
24 I don't think the answer was very clear. So at this
25 point, I do anticipate three or four hours of cross.

1 CO-HEARING OFFICER DODUC: And you will make
2 that showing.

3 Ms. Nikkel, you had also requested an hour, I
4 believe it was. Is that still your request?

5 MS. NIKKEL: Yes, that's correct, still an
6 hour.

7 CO-HEARING OFFICER DODUC: Okay.

8 So, Mr. Mizell, that is -- my mind is going in
9 mode engineer -- roughly 13 to 14 hours of cross
10 remaining. I don't expect we'll get to your Panel 3 on
11 Friday. And in fact, if we do manage to finish this
12 panel by Friday, whatever time it is, I will be very
13 happy to adjourn. So let's -- let's make sure we all
14 understand that we will get to your Panel 3 next week.
15 I believe it is Monday, our first day next week. Are
16 we back in Rancho Cordova? No? We're here?

17 MR. MIZELL: I just would like to make one
18 further housekeeping clarification. So we have one
19 witness who is not available on Friday --

20 (Reporter interruption)

21 CO-HEARING OFFICER DODUC: Oh, yes, no side
22 conversations, please.

23 Thank you. I was about to get to that. So
24 far, there have not and any questions directed at
25 Dr. Ohlendorf --

1 Did I pronounce your name correctly?

2 For all those parties who have yet to conduct
3 cross-examination, did you have any questions for
4 Dr. Ohlendorf? Because if you do, I will ask you to
5 conduct that cross-examination tomorrow.

6 MR. BEZERRA: Ryan Bezerra. I do not.

7 MR. STOKLEY: Tom Stokley. I do, but I'll be
8 on first thing in the morning, from what I understand.

9 CO-HEARING OFFICER DODUC: Perfect.

10 MR. STOKLEY: Thank you.

11 CO-HEARING OFFICER DODUC: Perfect.

12 All right. On that good note, Mr. Obegi, we
13 will turn it back to you.

14 MR. OBEGI: Thank you. And I will try to be
15 very brief in the interest of time.

16 Dr. Greenwood, let's talk about longfin smelt.
17 Would you agree that Delta outflow has a significant
18 effect on the abundance of longfin smelt?

19 WITNESS GREENWOOD: There is a significant
20 correlation between winter-spring Delta outflow and
21 abundance indices of longfin smelt.

22 CO-HEARING OFFICER DODUC: Okay. Mr. Bezerra?

23 WITNESS GREENWOOD: A positive correlation --
24 a positive correlation between winter-spring outflow
25 and abundance indices of longfin smelt.

1 MR. OBEGI: And that's the months that are the
2 critical months, that would be January to June?

3 WITNESS GREENWOOD: Different analyses have
4 looked at slightly different timing periods. So some
5 are January to June, some are December to May,
6 essentially trying to cover different -- essentially
7 trying to cover the early life history and also
8 reproductive period of longfin smelt.

9 MR. OBEGI: Thank you. And that conclusion is
10 consistent with numerous models and papers including
11 Nobriga and Rosenfield; is that correct?

12 WITNESS GREENWOOD: I believe they used
13 December to May as their period.

14 CO-HEARING OFFICER DODUC: All right. Mr.
15 Bezerra?

16 MR. OBEGI: Thank you. I was going to object,
17 vague and ambiguous as to numerous papers and studies.
18 I mean, again, if we're going to be specific about
19 this, the witnesses deserve the opportunity to answer
20 questions about specific materials, not numerous
21 reports. I mean --

22 CO-HEARING OFFICER DODUC: Fair enough,
23 Mr. Bezerra.

24 Ms. Morris?

25 MS. MORRIS: Also, the question is unclear if

1 it was Dr. Greenwood's previous response --

2 CO-HEARING OFFICER DODUC: I'm sorry. I
3 didn't hear that last part.

4 MR. OBEGI: It was unclear, and the question
5 would be good if it can be clarified. Was it the
6 question that was first asked, and Dr. Greenwood did
7 not answer solely with a yes or no. He said there was
8 a positive correlation. And then the next question was
9 was that result, so and so, found in numerous papers?
10 So it's unclear what result he was talking about. Was
11 it his question or was it Dr. Greenwood's answer?

12 CO-HEARING OFFICER DODUC: Mr. Obegi?

13 MR. OBEGI: Let me rephrase.

14 CO-HEARING OFFICER DODUC: Please.

15 MR. OBEGI: Does the Nobriga and Rosenfield
16 life cycle show that increased Delta outflow is
17 correlated with higher abundance of longfin smelt?

18 WITNESS GREENWOOD: I believe that it shows
19 the increased Delta outflow helps to explain transit
20 abundance. So essentially yes, it shows that there's a
21 positive correlation between longfin smelt and
22 winter-spring outflow. December to May, I think, was
23 the period that was used.

24 MR. OBEGI: If we could pull up State Water
25 Board 103. This is the 2017 Staff Final Scientific

1 Basis Report. And turning to Page 3-56 which is
2 Page 198 of the pdf.

3 Did you look at this evalua- -- this report in
4 preparing your testimony on the effects of WaterFix on
5 longfin smelt?

6 WITNESS GREENWOOD: I didn't look at this
7 report.

8 CO-HEARING OFFICER DODUC: I'm sorry. That
9 was a "did not"?

10 WITNESS GREENWOOD: I did not look at this
11 report.

12 MR. OBEGI: Are you familiar with this
13 modeling approach that is used here or not?

14 WITNESS GREENWOOD: I'm familiar with it, yes.

15 MR. OBEGI: Is it your understanding that this
16 modeling approach shows an increased outflow in the
17 winter-spring period results in positive longfin smelt
18 population growth?

19 WITNESS GREENWOOD: It shows the -- with
20 average -- it shows, based on how population growth is
21 being defined within that, that there's an increased
22 possibility of population growth with greater outflow.
23 I'd have to -- if you could scroll down just a little
24 bit, it would remind me of the period. Okay. And this
25 one is January to June it's looking at.

1 MR. OBEGI: And does it identify a break point
2 at which you've reached that 50 percent chance of
3 positive population growth?

4 WITNESS GREENWOOD: The value there, I think,
5 is what it states in the sentence which is 42,800 cfs.

6 MR. OBEGI: And in the WaterFix BA, spring
7 outflow from March to May is to be maintained up to
8 44,500 cfs? Sorry. That was a very poorly worded
9 question.

10 Am I correct that, under WaterFix, under the
11 proposed action, WaterFix cannot result in a reduction
12 in March to May outflow compared to the status quo
13 unless outflows would be above 44,500 cfs?

14 WITNESS GREENWOOD: I mean, the criteria are
15 not specifically doing that. There is an outflow
16 requirement that does -- that does include 44,500 cfs
17 as being kind of a sort of a limit of outflow, as I
18 think we saw in the tables earlier we were looking at
19 regarding the operational criteria from the ITP.

20 MR. OBEGI: And do you know what the
21 biological basis for that 44,500 cfs threshold is?

22 WITNESS GREENWOOD: I believe that was
23 unpublished analysis that suggested that 44,500 cfs was
24 the value at which -- similar to this threshold for the
25 Point 5 threshold in term of population growth based on

1 an unpublished analysis, as I said.

2 MR. OBEGI: Do you know how frequently
3 WaterFix would achieve that March to May threshold of
4 44,500 cfs?

5 WITNESS GREENWOOD: I'm not sure how
6 frequently.

7 MR. OBEGI: Do you know roughly if it's more
8 than 50 percent of the time?

9 WITNESS GREENWOOD: I don't believe that it's
10 more than 50 percent of the time based on the criteria.

11 MR. OBEGI: And so -- and that 44,500 cfs was
12 the estimate for a 50 percent chance of population,
13 positive population growth, correct?

14 WITNESS GREENWOOD: In an unpublished
15 analysis, yes, which was part of a general belief. I
16 believe that analysis was subject to peer review, and
17 that particular portion of the analysis wasn't carried
18 forward. So I'm just saying where the -- I do know
19 where the "44,500 cfs" came from, to my knowledge.

20 MR. OBEGI: So it is unlikely that WaterFix
21 would result in flows during the March to May period in
22 more than 50 percent of years that that unpublished
23 analysis would show would result in a 50 percent chance
24 of positive population growth?

25 CO-HEARING OFFICER DODUC: You have totally

1 loss have lost me, Mr. Obegi.

2 Mr. Bezerra, did you have an objection?

3 MR. BEZERRA: Just vague and ambiguous as to
4 "WaterFix" in this context. The operations of the
5 tunnels in and of themselves would not result in any
6 particular outflows. It would be operation of the
7 reservoirs, it would be inflows to the system. It
8 would be a lot of things other than the WaterFix that
9 would have to go on in order for Delta outflows to meet
10 some particular threshold.

11 CO-HEARING OFFICER DODUC: Yes, including
12 real-time operations, and all the -- I understand that.

13 Mr. Obegi, please break down your question for
14 me.

15 MR. OBEGI: So am I correct that the
16 44,500 cfs threshold is based on a 50 percent chance of
17 positive population growth?

18 WITNESS GREENWOOD: Yes, that's my
19 recollection.

20 MR. OBEGI: And that flow threshold would be
21 achieved in less than 50 percent of years?

22 WITNESS GREENWOOD: I believe so. We'd have
23 to look at the modeling summaries to confirm that. But
24 I believe it would be less than that based on the
25 modeling that we have today.

1 MR. OBEGI: Thank you.

2 Can we please pull up, Mr. Hunt, NRDC-20,
3 which are the California Department of Fish and
4 Wildlife's Findings of Fact under California Endangered
5 Species Act. And please turn to Page 313.

6 What model does the -- are you aware what
7 model the California Department of Fish and Wildlife
8 used to analyze the effects of outflow on longfin smelt
9 abundance?

10 WITNESS GREENWOOD: They used the same -- I
11 believe it was the same modeling of X2 in relation to
12 abundance index for -- that I used in the ITP
13 application.

14 So it's essentially a regression or general
15 median model relating longfin smelt following water
16 trawl survey index to average January to June X2.

17 MR. OBEGI: And that's -- am I correct that
18 that is based on a paper by Wim Kimmerer originally?

19 WITNESS GREENWOOD: The method -- or a very
20 similar method was used in a 2013 review of the Bay
21 Delta Conservation Plan as it was then proposed. The
22 references Mount, et al., Wim Kimmerer -- Wim Kimmerer
23 was a coauthor. He may have been the one -- I suspect
24 he was the one that did the analysis. I'm not sure if
25 he was, but I suspect he was.

1 MR. OBEGI: And in its findings of fact, did
2 the California Department of Fish and Wildlife conclude
3 that longfin smelt abundance would be lower under the
4 project compared to the No Action Alternative?

5 WITNESS GREENWOOD: No, I don't believe that
6 it did.

7 MR. OBEGI: So if you would turn to the --
8 what is that, the sentence that begins, "The decline in
9 LFS abundance in wet years is not expected to differ
10 between project operations with spring outflow
11 criteria" --

12 (Reporter interruption)

13 MR. OBEGI: Sorry.

14 THE REPORTER: Start the sentence again.

15 MR. OBEGI: So the sentence that begins, "The
16 decline in LFS," does that sentence find that there's a
17 12.47 percent decline under the project versus an
18 11.53 percent decline under the No Action Alternative?

19 WITNESS GREENWOOD: Can you repeat your
20 question exactly as you stated it?

21 MR. OBEGI: Could you please read it back, the
22 prior question.

23 The current question is fine. We've moved on
24 from the original version.

25 (Record not read)

1 WITNESS GREENWOOD: I think that -- just to
2 clarify why I was asking for that because the original
3 question was in relation to, as I understood it, CWF
4 impulse overall. This is now specifically talking
5 about this analysis, as I understand it.

6 MR. OBEGI: And so it does find that the
7 decline in longfin smelt abundance would be greater
8 under the proposed project than under the No Action
9 Alternative?

10 CO-HEARING OFFICER DODUC: Ms. Morris?

11 WITNESS GREENWOOD: Those are --

12 CO-HEARING OFFICER DODUC: Hold on.

13 MS. MORRIS: Objection. What year type? this
14 analysis is talking about different year types.

15 MR. OBEGI: It's the -- the sentence actually
16 reads for all -- I believe it's for all water year
17 types. But maybe I misread it.

18 MS. MORRIS: Below it, it says, "The decline
19 in LFS abundance in wet years is not expected to differ
20 between project operations with spring outflow
21 criterias" --

22 (Reporter interruption)

23 MS. MORRIS: I'm so sorry.

24 "The decline in LFS abundance in wet years is
25 not expected to differ between project operations with

1 spring output criteria as compared to the No Action
2 Alternative."

3 MR. OBEGI: Followed by a numeric decline of
4 almost 1 percent, right -- 12.47 under the project
5 versus 11.53? This is for wet years, correct?

6 WITNESS GREENWOOD: That's what it says, yes.

7 MR. OBEGI: And in both cases, doesn't this
8 conclude that the abundance of longfin smelt will
9 decline under the No Action Alternative?

10 WITNESS GREENWOOD: It's saying -- for a
11 modeled analysis, it's saying that the result is less
12 under the No Action Alternative or under the project
13 compared to the existing conditions that were modeled.

14 MR. OBEGI: So as compared to today, it would
15 be a lower abundance; is that your understanding?

16 WITNESS GREENWOOD: Based on this analysis,
17 which is looking at X2.

18 MR. OBEGI: And in part, that's a result of
19 climate change?

20 WITNESS GREENWOOD: Yes.

21 MR. OBEGI: And in part, that's a result of
22 increased exports in January and February?

23 WITNESS GREENWOOD: The -- under the No Action
24 Alternative?

25 MR. OBEGI: Under the proposed project.

1 WITNESS GREENWOOD: The differences between
2 the modeling scenarios reflect whatever operational
3 differences that there were between the different
4 scenarios. So if it was specifically less January to
5 February outflow, then that would be in -- that will be
6 reflected in these results.

7 MR. OBEGI: Is it true that this model does
8 not account for prior stock abundance?

9 WITNESS GREENWOOD: That's true. This model
10 is just a correlation of a year to year different --
11 yeah, that that's true.

12 MR. OBEGI: So longfin smelt, when extinct,
13 this model would still show an abundance that would be
14 irrespective of the fact that there were no longfin
15 smelt?

16 WITNESS GREENWOOD: As I say, it's predicting
17 longfin smelt abundance index as a function of January
18 to June average X2, as well as there's actually a step
19 change in there for changed conditions because of the
20 pelagic organism decline. So it doesn't have an input
21 in it for stock abundance.

22 MR. OBEGI: And did the Nobriga and Rosenfield
23 paper conclude that accounting for prior stock
24 abundance was important in evaluating the effects of
25 outflow on longfin smelt?

1 WITNESS GREENWOOD: I think that they did,
2 yes, I believe also in the -- I believe in the
3 Kimmerer -- you cited as Kimmerer analysis, that
4 from -- and we talked about that as being the
5 Mount, et al., 2013 report. It noted that -- and I
6 would agree with that -- the trends in longfin smelt
7 abundance are captured quite well, knowing -- by
8 inclusion of this outflow term or average X2 term as
9 well as step changes in conditions because of -- first
10 of all because of invasive clam and then, secondly,
11 because of the pelagic organism decline. So I think
12 this method, although it doesn't have prior stock
13 abundance, captures the trend in abundance in response
14 to outflow. And this is one of the reasons that it was
15 used here.

16 MR. OBEGI: Thank you. Do you believe that
17 entrainment of longfin smelt today has large population
18 level effects?

19 WITNESS GREENWOOD: I haven't analyzed that
20 specifically, although my recollection is that, in the
21 consideration of longfin smelt for listing, that that
22 was considered not -- by the Fish and Wildlife Service
23 that entrainment was not considered to be an
24 important -- as important a factor as it may have been
25 in the past, so.

1 MR. OBEGI: And in the absence of the proposed
2 project, in your professional opinion, would more
3 restrictive OMR requirements be necessary to reduce
4 entrainment of longfin smelt?

5 WITNESS GREENWOOD: I don't know.

6 MR. OBEGI: Okay. I have some questions for
7 Mr. Miller. We've got to stop meeting like this.

8 Mr. Hunt, would you please pull up State Water
9 Board 105, which is the Fish and Wildlife Biological
10 Opinion, and turn to Page 25, which is a table of
11 operations.

12 So I -- I found this table and the footnote to
13 be very confusing, so I'd like to just ask you a couple
14 of questions about it, Mr. Miller. The table seems to
15 indicate that, in a January of a wet year, OMR would
16 not be more negative than a three-day average of zero
17 cfs. Am I understanding that correctly?

18 MR. MIZELL: Can I interject here for a
19 moment?

20 CO-HEARING OFFICER DODUC: Mr. Mizell?

21 MR. MIZELL: Can we allow the witness to see
22 the headers of this table before the question gets
23 answered?

24 CO-HEARING OFFICER DODUC: Let's do that.

25 WITNESS MILLER: Okay. What was your question

1 again?

2 MR. OBEGI: Am I understanding correctly that,
3 from this table, in January of a wet year, OMR flows
4 would be no more negative than zero cfs on a three-day
5 average?

6 WITNESS MILLER: I think you're talking about
7 South Delta operations.

8 MR. OBEGI: Yes.

9 WITNESS MILLER: And the footnote -- is it a 2
10 and a 3?

11 MR. OBEGI: Footnote 2 is the question that
12 I'm -- find perplexing.

13 WITNESS MILLER: Okay. Your -- your question
14 on No. 2.

15 Mr. Hunt, can you zoom --

16 MR. OBEGI: Footnote 2, yes.

17 WITNESS MILLER: Mr. Hunt, can you zoom in a
18 little bit more?

19 MR. OBEGI: So am I correct that, under the
20 table, in January of a wet year, OMR would be no more
21 negative than zero cfs on a three-day average?

22 WITNESS MILLER: Well, this -- the table says
23 that in January of a wet year would be, yeah, zero.
24 And then the footnote then goes on to further explain
25 that the -- should I read it?

1 MR. OBEGI: Rather than --

2 CO-HEARING OFFICER DODUC: Hold on.

3 Ms. Morris?

4 MS. MORRIS: There's no question pending. He
5 answered a question about the tables, and there's not a
6 current question pending.

7 MR. OBEGI: That's okay. I think that's fair.
8 Thank you for your help.

9 Mr. Miller, Footnote 2 states that the range
10 of operating criteria will be a starting point of minus
11 1250 to minus 5,000 on a 14-day running average,
12 correct?

13 WITNESS MILLER: That's what it says, and
14 that's how I developed my example was using a range
15 between negative 1250 and negative 5,000 for January
16 through March.

17 MR. OBEGI: So in January of a wet year, OMR
18 might be as negative as minus 5,000, rather than the
19 zero shown in the table?

20 MS. ANSLEY: Misstates his testimony. He was
21 talking about his example from his testimony, and I
22 believe Mr. Obegi is speaking more broadly.

23 CO-HEARING OFFICER DODUC: Mr. Obegi?

24 I thought he was asking about the table.

25 MR. OBEGI: Yes.

1 CO-HEARING OFFICER DODUC: Not just example
2 but the table.

3 WITNESS MILLER: Well, this probably goes more
4 towards the project description. The way I interpreted
5 this for my testimony was using Footnote 2, based on
6 the range from negative 1250 to negative 5,000 in
7 January, February, March, and June.

8 MR. OBEGI: So your testimony did not rely on
9 the OMR flows in the table but instead on the footnote?

10 WITNESS MILLER: The table refers to the
11 footnote.

12 MR. OBEGI: Sorry -- to the numeric values in
13 the footnote rather than the numeric values in the
14 table.

15 CO-HEARING OFFICER DODUC: Ms. Morris?

16 MS. MORRIS: Sorry. I just would like to have
17 a clear record. I'm unclear because Mr. Obegi is
18 asking a question about the table, and Mr. Miller is
19 answering a question about his example. And his
20 example was 2016. So it should be clear what year
21 type -- if we're comparing his example to the table,
22 what year type 2016 was so you can interpret the table
23 and footnote appropriately.

24 CO-HEARING OFFICER DODUC: Okay.

25 MR. OBEGI: My original question was what is

1 the OMR requirement in January of a wet year?

2 CO-HEARING OFFICER DODUC: So let's focus on
3 that, Mr. Miller.

4 WITNESS MILLER: And my testimony didn't
5 actually cover a wet year. It covered a below-normal
6 year, 2016.

7 MR. OBEGI: And so in a below normal year, the
8 table would say that it would be minus 4,000 would be
9 the most negative OMR values, correct?

10 WITNESS MILLER: That's correct.

11 MR. OBEGI: And as the person who's testifying
12 as to how to implement real-time operations and
13 implement the operating criteria, how would you
14 interpret this table and footnote to determine what OMR
15 requirements would occur in January of a wet year?

16 WITNESS MILLER: Well, I would like to focus
17 on my example that was in 2016.

18 MR. OBEGI: I would rather ask the question
19 about a wet year.

20 CO-HEARING OFFICER DODUC: Are you not able to
21 extrapolate real-time operations as you would conduct
22 them to a wet year based on this table?

23 WITNESS MILLER: Well, can we maybe pull up my
24 PowerPoint and I can explain what my testimony was?

25 CO-HEARING OFFICER DODUC: And why you're

1 hesitant about extrapolating photo a wet year?

2 WITNESS MILLER: Well, in the -- in my
3 example, the January February, March, I based that on
4 the actual conditions from 2016.

5 MR. OBEGI: So just to be -- so I understand,
6 in your example, you looked at a range that went to a
7 minus 5,000 in 2016, which was a below normal year?

8 WITNESS MILLER: It was whatever it was -- I
9 used whatever it was in 2016. We can pull open the
10 historical record, if that would be helpful.

11 MR. OBEGI: I guess -- I don't want to spend a
12 lot of time on this given the time constraints. But
13 your testimony states that you found it -- that all --
14 that it would be -- that would you would be able to
15 operationalize all of the operating criteria in CWF,
16 and this is one of the operating criteria.

17 So I guess the question remains: What would
18 be the OMR requirements in January of a wet year?

19 MR. MIZELL: I'm going to object at this
20 point. Mr. Miller has answered the question that he's
21 not able to do that calculation here as his example,
22 which he continues to try and rely upon, we'd point
23 out, it took him -- to review the historic hydrology at
24 the time and to figure out which conditions were
25 controlling at any given moment throughout the course

1 of a water year, that's not an easy calculation. It's
2 certainly not something he can do in the absence of the
3 historic hydrological and what operations would control
4 at any given point in Mr. Obegi's requested wet year.

5 CO-HEARING OFFICER DODUC: Mr. Obegi, your
6 response?

7 MR. OBEGI: I am not asking the witness to
8 model or analyze what would be controlling at any given
9 time or how much water would be diverted. I'm simply
10 asking the question of, based on the incongruity
11 between these two provisions and Mr. Miller's testimony
12 that he would be able to operationalize all these
13 criteria, what would be the OMR in January of a wet
14 year?

15 CO-HEARING OFFICER DODUC: And help me
16 understand what you mean by -- I can't even say that
17 word.

18 MR. OBEGI: Incongruity?

19 CO-HEARING OFFICER DODUC: Thank you.

20 MR. OBEGI: So the table appears to show that,
21 in January of a wet year, OMR would not be more
22 negative than zero cfs and thus would result -- whereas
23 today, consistent with the language in Footnote 2,
24 OMR's managed to a range of minus 1250 to minus 5,000.

25 CO-HEARING OFFICER DODUC: Ah.

1 MR. OBEGI: OMR cannot be both minus 5,000 and
2 zero on the same day.

3 CO-HEARING OFFICER DODUC: Does not Footnote 2
4 supersede what is in the table?

5 MR. OBEGI: That is my question.

6 CO-HEARING OFFICER DODUC: Ms. Morris?

7 MS. MORRIS: And can we scroll -- I can't see
8 where Footnote 2 is. And I think it would be important
9 to understand where Footnote 2 is --

10 CO-HEARING OFFICER DODUC: Right there.

11 MS. MORRIS: -- in the table.

12 CO-HEARING OFFICER DODUC: It's right there.
13 It refers to South Delta operations. First column.

14 MS. MORRIS: Oh, thank you. I didn't see it.

15 CO-HEARING OFFICER DODUC: So, Mr. Miller,
16 just as a matter of, I guess, practice or operations,
17 do you interpret what's on this page that's going to
18 the footnote as Footnote 2 superseding -- or the
19 numbers, I'm sorry. The numbers in -- the range of
20 1250 to negative -- negative 1250 to negative 500
21 superseding what's in the table? I think is what
22 Mr. Obegi was asking.

23 WITNESS MILLER: The way I interpreted this in
24 my example was in replacement -- or I guess we'll just
25 make it easy -- in replacement of the middle column.

1 And so this would be going back to my
2 PowerPoint where I talked about the two components of
3 real-time operations. I talked about the day-to-day
4 operational decisions, but then I also talked about the
5 interagency coordination as a component, too, where the
6 WOMT is essentially the -- making these decisions based
7 on input from a small working group, for example, where
8 the range identified here as a starting point of
9 negative 1250 and negative 5,000 would be determined by
10 that -- through that process.

11 And so in my example, I just used the
12 historical data from 2016 as that. I didn't -- I did
13 not speculate on anything -- anything different than
14 what had happened historically.

15 MR. OBEGI: And Dr. Greenwood, am I correct
16 that the analysis in the biological opinions and
17 EIS/EIR assumed the OMR criteria in this table and not
18 the OMR criteria used in Footnote 2?

19 MR. MIZELL: I'm going to object to this
20 question as well as earlier objection to the previous
21 question.

22 Mr. Obegi has asserted that there's an
23 incongruity; however, if you read the actual footnote
24 versus the table, the table discusses a three-day
25 average versus a footnote that discusses a 14-day

1 average, you know, alternative calculation that would
2 inform decision making. There is no incongruity that
3 has been identified at this point.

4 CO-HEARING OFFICER DODUC: We will strike that
5 word that I can't pronounce anyway.

6 Mr. Obegi, your question again.

7 MR. OBEGI: Dr. Greenwood, in analyzing the
8 effects to Delta smelt in the Biological Opinion and in
9 the EIS/EIR, did you use the OMR criteria -- the
10 specific OMR criteria in this table rather than the OMR
11 criteria in Footnote 2?

12 WITNESS GREENWOOD: I used the -- whatever was
13 captured with the modeling so far as the quantitative
14 analyses. And, as I noted in high testimony, OMR flows
15 are one consideration in terms of assessing what the
16 potential is for entrainment risk.

17 So I answered to the question I believe is
18 whatever was captured in the modeling. And I'm not
19 sure if Mr. Reyes could speak specifically to the -- to
20 how it's captured.

21 I believe that the right-hand column there
22 shows the -- shows the CalSim assumptions; is that
23 correct?

24 WITNESS REYES: Yeah, that's correct. The
25 right-hand column will outline the CalSim II modeling

1 assumptions. And what that was trying to do is to --
2 or at least what I believe they're doing is interpret
3 the column on the left and try to put it in a form that
4 CalSim can handle.

5 And so CalSim is a monthly model, and you
6 know, it would be impossible to do a three-day average
7 thrown in there, or a 14-day average for that matter.
8 And that footnote, if you keep reading, says
9 "Modifications to the three-day average" -- which is, I
10 think, in reference to the three-day average of zero
11 cfs for January and February, "Modifications to the
12 three-day average period and the range of operating
13 criteria may be needed in part, because: (1) the water
14 year type is forecasted in February" -- so in January,
15 you wouldn't know if it was a wet year type yet. Not
16 enough hydrology has happened to classify it as a wet
17 year type yet, and it won't be finalized until May.

18 And then, "(2) zero cfs or positive OMR in wet
19 and above normal years may be obtained coincident with
20 unimpaired flows." So that is too much information for
21 the model to process. So the -- the resulting
22 assumptions are what's in the right-hand column.

23 MR. OBEGI: Mr. Hunt, would you just scroll up
24 a little bit.

25 So it doesn't look like it has January values.

1 But if I -- is it on the next page perhaps?

2 Scroll down just a little bit and see if it
3 is.

4 January, March, same as the criteria. Does
5 that mean that you modeled --

6 WITNESS REYES: Seems to me to be a footnote.

7 MR. OBEGI: What was that?

8 WITNESS REYES: It seemed like it would be
9 Footnote 2.

10 MR. OBEGI: So it's your testimony that the
11 modeling in the Biological Opinion in the EIS/EIR
12 looked at the OMR range of 1250 to 5,000 in January of
13 a wet year and not the zero that's shown in that table?

14 WITNESS REYES: Yeah, that's how I understand
15 it.

16 MR. OBEGI: And Dr. Greenwood, is that range
17 of minus 1250 to 5,000 the same OMR range that is
18 required by the Fish and Wildlife Service Biological
19 Opinion?

20 WITNESS GREENWOOD: I believe that it's the
21 same range if memory serves, yes.

22 MR. OBEGI: So if this footnote were
23 controlling, there would be no requirement to reduce
24 OMRs in the South Delta with the proposed project?

25 WITNESS GREENWOOD: Potentially. I'd to have

1 consider it some more, keep reading the footnote. But
2 I'm not entirely certain.

3 MR. OBEGI: I'm not entirely sure where to go
4 from there because the testimony states that WaterFix
5 would reduce OMR compared to today, but this language
6 indicates that it would not be required to reduce OMR
7 compared to today; is that correct?

8 WITNESS REYES: This is just the criteria, and
9 I think when WaterFix talks about reducing OMR, it's
10 referring to the fact that you're shifting what used to
11 be only South Delta pumping to North and South Delta
12 pumping. And so due to that fact that you're putting
13 some of your exports to the north, your South Delta
14 exports are reduced. And that's why OMR is reduced.

15 MR. OBEGI: OMR would be reduced if there was
16 reduced South Delta pumping. If there was a additional
17 South of Delta storage, could that result in increased
18 pumping?

19 MR. MIZELL: Objection as to vague. Pumping
20 from which intake?

21 MR. OBEGI: Let me rephrase.

22 So Dr. Greenwood, you testified before that
23 unlimited pulse protection could result in less pumping
24 from the North Delta than was shown -- than was modeled
25 in CalSim; is that correct?

1 WITNESS GREENWOOD: Yes, I believe so, yes.

2 MR. OBEGI: And so this footnote would
3 indicate that, if there was less pumping from the North
4 Delta as a result of unlimited pulse protection, there
5 could be pumping from the South Delta up to the
6 existing -- the requirements in the existing 2008
7 Biological Opinion?

8 WITNESS GREENWOOD: That's what the footnote
9 says.

10 MR. OBEGI: And so there would not be a
11 required reduction in OMR?

12 WITNESS GREENWOOD: As I said, I'm not certain
13 based just looking at the footnote.

14 WITNESS REYES: Actually, could I add -- I
15 think I misspoke earlier. Can we pull up DWR-1069?
16 And scroll down to -- to Table 3, which has the OMR
17 requirements.

18 So there you see January wet water year type
19 is zero. So I misspoke.

20 MR. OBEGI: Thank you for that clarification.
21 That was consistent with my understanding as well.

22 CO-HEARING OFFICER DODUC: Okay.

23 MR. OBEGI: However, it still leaves me facing
24 a bit of a conundrum because the EIS/EIR and the
25 Biological Opinions analyzed in CalSim the model that

1 you -- the modeling results you just showed. And
2 Mr. Miller is testifying that he operationalized the
3 OMR requirements to be no different than the status
4 quo, the 2008 Fish and Wildlife Service Biological
5 Opinion and national Marine Fisheries Service 2009
6 Biological Opinion.

7 WITNESS MILLER: I showed an example of how it
8 could be operationalized.

9 MR. OBEGI: And so how would you -- I guess I
10 will return back to my initial question. Is it still
11 your understanding that, in January of a wet year, OMR
12 could be minus 5,000 pursuant to this footnote?

13 WITNESS MILLER: If that's that the -- what's
14 determined to be protective by the WOMT and the
15 respective working groups.

16 MR. OBEGI: And, Mr. Reyes, that was not the
17 CalSim modeling and the Biological Opinion -- the
18 CalSim modeling did not analyze OMR in minus 5,000 in
19 January of a wet year, correct?

20 MR. ROBBINS: Yeah, I followed that -- the table
21 that just showed.

22 MR. OBEGI: And Dr. Greenwood, the Biological
23 Analyses for the BA for the EIS/EIR did not analyze the
24 biological effects of OMR minus 5,000 in January of a
25 wet year; is that correct?

1 WITNESS GREENWOOD: If that's the modeling
2 assumption, if that it wasn't captured in the modeling
3 assumption, then that wasn't included.

4 As Mr. Miller noted, the considerations
5 regarding protection of fish is not -- it's related to
6 Old and Middle River flows, but it's also in relation
7 to fish distribution as well.

8 MR. OBEGI: And let's --

9 WITNESS MILLER: Can I just -- kind of
10 reiterate sort of what Mr. Reyes said is that it's -- a
11 wet year is not determined until -- it's not final
12 until May. And so there's estimates up through May.

13 MR. OBEGI: But am I correct that, in your
14 testimony, you stated that the criteria is sufficient
15 to -- I'll try to pull it up right now -- sufficient to
16 be able to operationalize?

17 WITNESS MILLER: Which part? The example --
18 my example, I operationalized, at least in January
19 through March, based on historical conditions and
20 historical determinations.

21 MR. OBEGI: At the Page 13, Line 9 to 10 of
22 your testimony you say, "These criteria proposed as
23 part of the CWF H3+ are implementable in real-time
24 operations."

25 MR. MIZELL: Is there a question pending?

1 MR. OBEGI: So is it correct that the -- that
2 this -- despite the fact that the water year type is
3 not determined until later in the year, these operating
4 criteria are sufficient to be operationalized today?

5 WITNESS MILLER: I'm not quite sure if I
6 understood your question. Can you repeat that one more
7 time?

8 MR. OBEGI: Mr. Reyes pointed out that the
9 water year type is not determined until later in the
10 year. Is it your understanding that, despite that
11 challenge, the operating criteria for CWF H3+ are
12 sufficient to be able to operational lies today?

13 CO-HEARING OFFICER DODUC: How do you
14 operationalize these criteria when the final
15 determination of a wet year type is not made until May?

16 WITNESS MILLER: So that will be looking at
17 Component 2 of real-time operations. So the WOMT and
18 the fishery groups make determinations of what is
19 protective -- what OMR levels are protective. And that
20 is what it is implemented in the day-to-day operation.

21 MR. OBEGI: And so is it clear what exceedence
22 forecast you would use on a January 1st to determine
23 what OMR criteria would apply?

24 CO-HEARING OFFICER DODUC: I hear an objection
25 coming.

1 MR. MIZELL: Objection, asked and answered and
2 speculative. He just indicated that the WOMT and fish
3 agencies would have a large part in determining what
4 operations were deemed protective based upon the
5 information at their disposal at that time. To ask
6 Mr. Miller to somehow prejudge what the fish agencies
7 would determine is speculative.

8 MR. OBEGI: Mr. Miller's testimony says that
9 the criteria -- so I don't misstate it, "These criteria
10 proposed as part of the CWF H3+ are implementable in
11 real-time operations."

12 CO-HEARING OFFICER DODUC: And that is his
13 answer. He would implement it in real-time operations
14 by getting input from the WOMT.

15 MR. OBEGI: Let's talk a little bit more about
16 real-time operations, Mr. Miller.

17 CO-HEARING OFFICER DODUC: Actually,
18 Mr. Obegi, I think it's getting late and we're all
19 tired and I think the witnesses are tired. Are you
20 able to return tomorrow?

21 MR. OBEGI: I was hoping to wrap up in the
22 next 15 minutes, but...

23 CO-HEARING OFFICER DODUC: I don't -- if you
24 think you can do it.

25 MR. OBEGI: Yes.

1 CO-HEARING OFFICER DODUC: All right. I don't
2 want to -- you know.

3 MR. OBEGI: I appreciate that.

4 CO-HEARING OFFICER DODUC: Okay. Because this
5 has been productive, useful information. Thank you.

6 MR. OBEGI: Absolutely.

7 Mr. Miller, how quickly do DWR and the Bureau
8 of Reclamation reduce OMR currently in response the
9 salvage-based triggers in the NMFS Biological Opinion?

10 WITNESS MILLER: You're stretching my memory,
11 here.

12 MR. OBEGI: Does it usually take a couple of
13 days?

14 WITNESS MILLER: Maybe Ms. White can remember.

15 WITNESS WHITE: My guess -- I think we don't
16 always get information within the same amount of time,
17 so it's difficult for us to answer. But it depends on
18 how quickly we're going to -- how quickly we'll get the
19 salvage information.

20 MR. OBEGI: So the real-time operations may
21 not happen for several days after the salvage-based
22 trigger was originally hit?

23 MR. MIZELL: Objection, misstates the
24 witness's testimony.

25 MR. OBEGI: I don't believe I was stating the

1 witness's testimony.

2 CO-HEARING OFFICER DODUC: Yes. How,
3 Mr. Mizell?

4 MR. MIZELL: When the questioner implies by
5 saying, "So blankity such," however, whatever he wants
6 to say, it's implying that that's what he just
7 understood the witness explained to him.

8 If he wants to ask a direct question, he can
9 certainly say, "Is it true that the Department would
10 not get information for several days?" However, to say
11 that their last response indicated a range of time
12 would be misstating the witness's testimony. They
13 indicated they do not know how long it will take.

14 CO-HEARING OFFICER DODUC: Mr. Obegi, re-ask
15 your question without driving Mr. Mizell crazy.

16 MR. OBEGI: Apparently I have the ability to
17 drive Mr. Mizell crazy no matter what I do.

18 Could it take more than a single day to
19 implement real-time operations to reduce South Delta
20 pumping?

21 WITNESS MILLER: Yes, and I think -- if it's
22 helpful, there is a -- listed in our current Biological
23 Opinions, a time that is required, I believe.

24 MR. OBEGI: My recollection was that it was
25 two to three days, but I don't know offhand. And I

1 think that's fine for now.

2 WITNESS MILLER: Okay.

3 CO-HEARING OFFICER DODUC: But do we know what
4 that is? Is it two to three days?

5 WITNESS MILLER: I was going to hazard a guess
6 of two days.

7 CO-HEARING OFFICER DODUC: We'll note it as a
8 hazardous guess.

9 MR. OBEGI: And Dr. Greenwood, are you aware
10 that the 2008 Fish and Wildlife Service Biological
11 Opinion concludes that it's necessary to have proactive
12 OMR requirements because once a salvage event -- an
13 entrainment event begins it can be difficult to stop?

14 WITNESS GREENWOOD: I would have to see that
15 specific reference to confirm.

16 MR. OBEGI: Mr. Hunt, could you please pull up
17 State Water Resources Control Board 87, which is the
18 2008 Fish and Wildlife Service Biological Opinion, and
19 turning to Page 339. Scrolling down a little bit
20 further, at the end of the paragraph.

21 Do you agree that anticipatory OMR is
22 biologically necessary to prevent entrainment events?

23 CO-HEARING OFFICER DODUC: I believe
24 Ms. Ansley is either trying to get a better view or has
25 an objection.

1 MS. ANSLEY: I have a -- I do have an
2 objection. I object -- the proper question is does
3 this refresh his recollection as to the requirement
4 here, not just "Do you agree?" Dr. Greenwood may need
5 to see more than this last paragraph. So the proper
6 question is does this last paragraph refresh his
7 recollection about this requirement that we're being
8 asked about.

9 CO-HEARING OFFICER DODUC: Fair enough.

10 Mr. Obegi?

11 MR. OBEGI: I'm actually less interested in
12 the requirements and more interested in biology.

13 CO-HEARING OFFICER DODUC: Okay. So ask
14 your --

15 MR. OBEGI: So my question is, in your
16 professional opinion, is anticipatory OMR requirements
17 necessary because it can be difficult to stop an
18 entrainment event once salvage is observed?

19 WITNESS GREENWOOD: Not entirely certain about
20 anticipatory OMR requirements, what that really is
21 meaning.

22 So I'm struggling a little bit to -- to come
23 up with an answer in terms of I understand that, as a
24 result of the Biological Opinion, a number of criteria
25 were put in place in order to limit entrainment and

1 based on the take limits in the Fish and Wildlife
2 Service Biological Opinion, with that as being achieved
3 since adoption of the -- the issuance of the Biological
4 Opinion.

5 So as far as the specifics of proactive, I
6 think that's probably a component of that. But I'm --
7 I guess I'm ultimately assessing the effect of the
8 criteria that are specified in the Biological Opinion.

9 MR. OBEGI: Would you agree with the statement
10 in the Biological Opinion that, quote, "A large
11 entrainment event may be inevitable by the time an
12 increase in salvage is detected"?

13 MS. ANSLEY: Vague and ambiguous. I think
14 that probably assumes a lot of facts in evidence in the
15 context of this sentence. So I will let Dr. Greenwood
16 ask if he needs clarifications. But I do think that
17 question is vague and ambiguous.

18 CO-HEARING OFFICER DODUC: Are you able to
19 offer an opinion, Dr. Greenwood, based on your
20 expertise?

21 WITNESS GREENWOOD: Can you repeat that again?
22 Sorry. I just want to --

23 MR. OBEGI: Could you read it back, please?

24 (Record read)

25 WITNESS GREENWOOD: I agree that it may be,

1 may be inevitable in some cases.

2 MR. OBEGI: Mr. Hunt, would you please pull up
3 State Water Resources Control Board 107, which is the
4 incidental take permit, and turn to Page 75.

5 Mr. Miller, this is a question for you. Would
6 the agencies consider effects on water supply in
7 deciding whether to take -- in deciding what real-time
8 operations to implement?

9 WITNESS MILLER: Which agencies are you
10 referring to?

11 MR. OBEGI: WOMET and the decision-making
12 process for real-time operations.

13 WITNESS MILLER: Water supply is probably one
14 of those considerations.

15 MR. OBEGI: Mr. Hunt, actually Page 75, not
16 175. My apologies.

17 WITNESS MILLER: I just wanted to make sure
18 that, due to the real-time process today, I believe the
19 small working group is looking at a matrix of --
20 looking at a matrix of risks and providing that to Fish
21 and Wildlife Service and WOMET. And so the OMRs are not
22 always dependent on salvage. A lot of times, it's
23 dependent on things like turbidity.

24 MR. OBEGI: I totally agree.

25 WITNESS MILLER: Okay.

1 MR. OBEGI: So doesn't this state -- is there
2 any assurance that real-time operations would actually
3 be implemented to reduce pumping to protect fish and
4 wildlife?

5 WITNESS MILLER: Can you say that one more
6 time? I'm sorry.

7 MR. OBEGI: Is there any assurance that
8 real-time operations would be implemented to limit
9 pumping to protect fish and wildlife?

10 MS. ANSLEY: Objection, vague and ambiguous.
11 Is he implying that the projects will not comply with
12 regulatory requirements, or is there some other
13 assurance?

14 CO-HEARING OFFICER DODUC: If you would change
15 the last part of your question to "to comply with
16 fishery protection requirements."

17 MR. OBEGI: Actually, that will misstate the
18 question because the fishery protections are expressed
19 in a range. And so the actions to implement to protect
20 fish and wildlife would occur within that range. And
21 we have seen experiences in the past where the Fish and
22 Wildlife Service has rejected the advice of the Smelt
23 Working Group and has not imposed real-time operations
24 while still complying with the text of the Biological
25 Opinion.

1 And it goes to the question of whether these
2 actions would actually be implemented, particularly
3 when they impact water supply.

4 MS. ANSLEY: Well, I still --

5 CO-HEARING OFFICER DODUC: Ms. Ansley?

6 MS. ANSLEY: I still need the question to be
7 phrased for specifically given all that extensive
8 information he just provided. So perhaps the question
9 needs to be reasked.

10 CO-HEARING OFFICER DODUC: I'm now confused as
11 to what the question is.

12 MR. OBEGI: The question was originally stated
13 as is there any assurance that real-time operations
14 would be implemented to protect fish and wildlife if it
15 reduced water supply?

16 CO-HEARING OFFICER DODUC: Are you able to
17 answer that question?

18 WITNESS MILLER: Well, I'd answer it in this
19 way is that we implement fishery protective actions
20 today, and it impacts water supply.

21 MR. OBEGI: And is it your understanding that
22 the Biological Assessment calls for preparing a drought
23 contingency plan after a single dry or critically dry
24 year?

25 WITNESS MILLER: I'm not familiar with that

1 part of the document. Incidental take permit? Is
2 that --

3 MR. OBEGI: Mr. Hunt, can you pull up State
4 Water Resources Control Board 104, which is the
5 Biological Assessment, and turn to Page 3-222, which is
6 near the very end.

7 MR. HUNT: Can you please repeat the page
8 number?

9 MR. OBEGI: 3-222. It should be after
10 Chapter 3. This identifies further drought procedures.
11 Does the refresh your recollection?

12 WITNESS MILLER: Is this the updated version?

13 MR. OBEGI: It is.

14 WITNESS MILLER: I don't see red lines.

15 MR. MIZELL: I'll indicate this is not the
16 updated BA. The updated BA would be found in DWR-1142.

17 MR. OBEGI: That is the State Water Board
18 exhibit. This is the July not the January.

19 MR. MIZELL: This is the superseded BA.
20 DWR-1142 is the update BA.

21 MR. OBEGI: That's fine. The document speaks
22 for itself.

23 A couple more questions. And just to bounce
24 around in the interest of time, Dr. Greenwood, did you
25 consider any scientific information regarding the

1 effects of spring outflow on Delta smelt in preparing
2 your testimony?

3 WITNESS GREENWOOD: My testimony didn't
4 specifically reference -- actually, my testimony did
5 reference spring outflow as something that was included
6 in the Fish and Wildlife Service Biological Opinion for
7 California WaterFix. I noted that the importance of
8 spring outflow -- or indeed outflow at other times of
9 the year other than the fall outflow focus we had, as I
10 mentioned, those areas will be -- would be addressed in
11 adaptive management for -- for California WaterFix as
12 well as in other processes, such as early initiation of
13 the Biological Opinions and the Delta smelt resiliency
14 strategy that's speaking to rearing habitat and seasons
15 other than fall, which is the focus of our analysis.

16 MR. OBEGI: Can I ask one last question?

17 Mr. Hunt, will you please pull up exhibit
18 State Water Resources Control Board 102, which is the
19 Final EIS/EIR. And I would like to see Appendix 5-E.
20 And this is the supplemental modeling related to the
21 State Water Resources Control Board.

22 Did you consider this modeling in preparing
23 your testimony?

24 WITNESS GREENWOOD: I didn't consider it in
25 preparing my testimony.

1 MR. OBEGI: And have you analyzed the effects
2 of these -- this modeling on fish and wildlife

3 WITNESS GREENWOOD: I don't believe so. I
4 would have to look at the different scenarios that are
5 included in that to be able to assess if any of them
6 were the ones that I included in my analyses.

7 MR. OBEGI: Thank you. I think that's
8 sufficient.

9 I appreciate the Hearing Officers's indulgence
10 and thank the witnesses for their time.

11 CO-HEARING OFFICER DODUC: Thank you,
12 Mr. Obegi.

13 Ms. Nikkel?

14 MS. NIKKEL: Thank you. If the Hearing
15 Officers would indulge me. The statutes require us to
16 be timely, and I think -- I believe this is the
17 appropriate time to lodge an objection and motion to
18 strike the oral testimony that was offered today based
19 on the various documents that Mr. Obegi presented to
20 the witnesses as improper hearsay.

21 To the extent that it is offered to the truth
22 of the matter asserted in document, that evidence is
23 inadmissible hearsay and is not sufficient alone to
24 support a finding. And this objection and motion to
25 strike is being asserted now, but we would request the

1 opportunity to provide the Hearing Officers with a
2 written objection that identifies the particular line
3 and page number of the testimony that the objection
4 applies to once the transcript is available.

5 CO-HEARING OFFICER DODUC: All right. So
6 noted; so granted.

7 And you will have the opportunity to respond
8 at that time, Mr. Obegi

9 MR. OBEGI: Thanks. Must I fear that you have
10 granted the motion already without me having the
11 opportunity to respond?

12 CO-HEARING OFFICER DODUC: No. What I granted
13 was the opportunity to her to file a written objection.
14 I didn't grant the objection itself.

15 MS. NIKKEL: I understood that as well. I do
16 want to confirm that the written objection will be
17 filed after the final transcript is made available.

18 CO-HEARING OFFICER DODUC: I'm granting the
19 request to file a written objection, Mr. Obegi.

20 Before we adjourn, let me circle back to
21 Mr. Mizell. Were you able to as sign during the lunch
22 break, a time estimate on when you might provide the
23 information requested by Mr. Shutes earlier today?

24 MR. MIZELL: I was able to speak with the
25 project team, and we can have that chart developed by

1 Monday.

2 CO-HEARING OFFICER DODUC: By Monday?

3 MR. MIZELL: That's correct.

4 CO-HEARING OFFICER DODUC: That has brought
5 Ms. Nikkel. Are you going to lodge an objection to
6 that as well?

7 MS. NIKKEL: No, I'm going to ask for a
8 clarification. I'm not sure when this panel is going
9 to be done. So my question of clarification is, when
10 that table is made available, will these witnesses will
11 be available for cross-examination regarding it.

12 CO-HEARING OFFICER DODUC: I'm hoping, one,
13 that we will be done with these witnesses this week;
14 two, my understanding of what Mr. Mizell was requested
15 to provide was -- is already in the record in a series
16 of tables, and he is now compiling it into one.

17 So there is no new information that he should
18 be -- would be providing through this; is that correct?

19 MR. MIZELL: I can confirm that that is
20 contract. The only thing we're doing is we're
21 compiling into a single table or tables, depending on
22 how it bests presents itself, information that is
23 already contained within the record in various
24 portions.

25 CO-HEARING OFFICER DODUC: All right.

1 Ms. Des Jardins? I think we might be off air.

2 MS. DES JARDINS: I just wanted to note that
3 the original September 8th filing, it was confusing
4 because there -- it's conflicted literally. And to the
5 extent that it's compiled and requirements are
6 conflicting and it clarifies --

7 (Reporter interruption)

8 MS. DES JARDINS: So the September 8th letter,
9 people raised objections that the criteria were
10 conflicting. And to the extent that it reconciles
11 conflicting information, it isn't.

12 CO-HEARING OFFICER DODUC: I will trust,
13 Mr. Mizell, that you will screen it for any conflicting
14 information.

15 Ms. Nikkel, before you leave, I think we need
16 another clarification. When you say you need the
17 transcript before filing your objection, do you mean
18 the final transcript? Because that will not be
19 available until after a while.

20 MS. NIKKEL: Well, for the clarity of the
21 record, I believe a final transcript would be
22 preferable. I'm willing to entertain other approaches.

23 CO-HEARING OFFICER DODUC: "Final" as in at
24 the conclusion of Part 2 or is there another final
25 date?

1 MS. NIKKEL: My understanding of the
2 procedures for the hearing is that the final transcript
3 is not available until after the conclusion of Part 2.
4 And for purposes of the record, I believe that it would
5 be cleanest to wait until that final transcript is
6 available so that we have the final version of the
7 testimony that was offered and can properly identify
8 where the -- where the objections are --

9 CO-HEARING OFFICER DODUC: Do you not have
10 access to the rough transcript which a lot of people
11 seem to have access to.

12 MS. NIKKEL: I do not without paying for it.
13 And I also don't know if the rough transcript will be
14 the same as -- in substance and respect as the final
15 transcript. And I have no way of knowing that until
16 the final transcript is available.

17 CO-HEARING OFFICER DODUC: You don't want to
18 watch the video recording of this entirely entertaining
19 day all over again?

20 MS. NIKKEL: No.

21 MR. OBEGI: And if I may, we would not have
22 access to the rough transcripts and would be prejudiced
23 in our ability to respond to the motion if it was based
24 on a rough transcript that we did not have access to.

25 CO-HEARING OFFICER DODUC: All right. I guess

1 I will still grant you the request, but --

2 MS. NIKKEL: Is it possible that the final
3 transcript just for this afternoon be made available
4 prior to the end of Part 2?

5 CO-HEARING OFFICER DODUC: Let's turn to our
6 court reporter and smile and ask nicely.

7 (Discussion off the record)

8 CO-HEARING OFFICER DODUC: We will see if we
9 can coordinate that with the court reporting service.

10 MS. NIKKEL: Okay. Thank you.

11 CO-HEARING OFFICER DODUC: Things happen when
12 my attorney leaves early. And on that note, we will
13 return at 9:30 tomorrow for cross-examination by
14 Mr. Stokley representing Group 38.

15 (Whereupon, the proceedings adjourned
16 at 5:36 p.m.)

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1 STATE OF CALIFORNIA)
) ss.
 2 COUNTY OF MARIN)

3 I, DEBORAH FUQUA, a Certified Shorthand
 4 Reporter of the State of California, do hereby certify
 5 that the foregoing proceedings were reported by me, a
 6 disinterested person, and thereafter transcribed under
 7 my direction into typewriting and which typewriting is
 8 a true and correct transcription of said proceedings.

9 I further certify that I am not of counsel or
 10 attorney for either or any of the parties in the
 11 foregoing proceeding and caption named, nor in any way
 12 interested in the outcome of the cause named in said
 13 caption.

14 Dated the 8th day of March, 2018.

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DEBORAH FUQUA
 CSR NO. 12948