

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 & Co-Hearing Officer
7 Dorene D'Adamo, Board Member

8 Staff Present:

9 Andrew Deeringer, Senior Staff Attorney
10 Jean McCue, Water Resource Control Engineer
11 Conny Mitterhofer, Supervising Water Resource Control
12 Engineer

13 PART 2

14 For Petitioners:

15 California Department of Water Resources:

16 James (Tripp) Mizell
17 Jolie-Anne Ansley

18 The U.S. Department of the Interior:

19 Amy L. Aufdenberge

20 INTERESTED PARTIES:

21 For Natural Resources Defense Council, The Bay
22 Institute, and Defenders of Wildlife:

23 Doug Obegi

24 For San Luis & Delta-Mendota Water Authority:

25 Daniel J. O'Hanlon

For North Delta Water Agency & Member Districts and
26 Contra Costa Water District:

27 Kevin O'Brien

1 APPEARANCES (Continued)

2 INTERESTED PARTIES (Continued):

3 For Local Agencies of the North Delta and Friends of
4 Stone Lakes National Wildlife Refuge:

5 Osha Meserve

6 For Central Delta Water Agency, South Delta Water
7 Agency (Delta Agencies), Lafayette Ranch, Heritage
8 Lands Inc., Mark Bachetti Farms and Rudy Mussi
9 Investments L.P.:

10 John Herrick

11 For The City of Roseville, Sacramento Suburban Water
12 District, San Juan Water District, The City of Folsom,
13 Yuba County Water Agency and The City of Roseville:

14 Ryan Bezerra

15 For California Sportfishing Protection Alliance (CSPA),
16 California Water Impact Network (C-WIN), and
17 AquAlliance:

18 Michael Jackson

19 For State Water Contractors:

20 Stefanie Morris
21 Rebecca Sheehan

22

23

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1	I N D E X		
2	NATIONAL RESOURCES DEFENSE COUNCIL, THE BAY INSTITUTE		
3	AND DEFENDERS OF WILDLIFE:		
3	WITNESSES	PAGE	VOL.
4	ROSENFELD, JONATHAN		
	(Witness Previously Sworn)	2	33
5	Direct examination resumed by Mr. Obegi	2	33
	Cross-examination by Mr. O'Hanlon	4	33
6	Cross-examination by Mr. O'Brien	22	33
	Cross-examination by Mr. Bezerra	43	33
7	Cross-examination by Mr. Herrick	107	33
	Cross-examination by Mr. Jackson	141	33
8	Cross-examination by Ms. Sheehan	186	33
9	CALIFORNIA SPORTFISHING ALLIANCE, CALIFORNIA WATER		
	IMPACT NETWORK AND AQUALLINCE		
10	WITNESSES:	PAGE	VOL.
11	BUDGOR, AARON		
	(Witness Sworn)	231	33
12	Direct examination by Mr. Jackson	231	33
	Cross-examination by Ms. Morris	254	33
13	Cross-examination by Mr. Mizell	263	33
	Cross-examination by Ms. Meserve	298	33
14	NATIONAL RESOURCES DEFENSE COUNCIL, THE BAY INSTITUTE		
15	AND DEFENDERS OF WILDLIFE:		
	EXHIBITS	PAGE	VOL.
16	NRDC-1	229	33
17	NRDC-2	229	33
18	NRDC-3	229	33
19	NRDC-4	229	33
20	NRDC-5	229	33
21	NRDC-6	229	33
22	NRDC-7	229	33
23	NRDC-8	229	33
24	NRDC-9	229	33
25			

I N D E X (Continued)		
NATIONAL RESOURCES DEFENSE COUNCIL, THE BAY INSTITUTE AND DEFENDERS OF WILDLIFE:		
EXHIBITS (Continued)	PAGE	VOL.
NRDC-10	229	33
NRDC-12	229	33
NRDC-13	229	33
NRDC-14	229	33
NRDC-15	229	33
NRDC-16	229	33
NRDC-17	229	33
NRDC-18	229	33
NRDC-19	229	33
NRDC-20	229	33
NRDC-21	229	33
NRDC-22	229	33
NRDC-23	229	33
NRDC-24	229	33
NRDC-25	229	33
NRDC-26	229	33
NRDC-27	229	33
NRDC-28	229	33
NRDC-29	229	33
NRDC-30	229	33
NRDC-31	229	33
NRDC-32	229	33

I N D E X (Continued)			
NATIONAL RESOURCES DEFENSE COUNCIL, THE BAY INSTITUTE AND DEFENDERS OF WILDLIFE:			
EXHIBITS (Continued)		PAGE	VOL.
NRDC-33		229	33
NRDC-34		229	33
NRDC-35		229	33
NRDC-36		229	33
NRDC-37		229	33
NRDC-38		229	33
NRDC-39		229	33
NRDC-40		229	33
NRDC-41		229	33
NRDC-42		229	33
NRDC-43		229	33
NRDC-44		229	33
NRDC-45		229	33
NRDC-46		229	33
NRDC-47		229	33
NRDC-48		229	33
NRDC-49		229	33
NRDC-50		229	33
NRDC-51		229	33
NRDC-52		229	33
NRDC-54		229	33

1	I N D E X (Continued)		
2	NATIONAL RESOURCES DEFENSE COUNCIL, THE BAY INSTITUTE AND DEFENDERS OF WILDLIFE:		
3	EXHIBITS (Continued)	PAGE	VOL.
4	NRDC-55	229	33
5	NRDC-56	229	33
6	NRDC-58	229	33
7	NRDC-59	229	33
8	NRDC-60	229	33
9	NRDC-61	229	33
10	NRDC-62	229	33
11	NRDC-63	229	33
12	NRDC-64	229	33
13	STATE WATER RESOURCES CONTROL BOARD: EXHIBITS	PAGE	VOL.
14	SWRCB-24	229	33
15	SWRCB-63	229	33
16	SWRCB-69	229	33
17	SWRCB-70	229	33
18	SWRCB-71	229	33
19	SWRCB-72	229	33
20	SWRCB-73	229	33
21	SWRCB-74	229	33
22	SWRCB-75	229	33
23	SWRCB-76	229	33
24			
25			

I N D E X (Continued)

		PAGE	VOL.
2	STATE WATER RESOURCES CONTROL BOARD: EXHIBITS		
3	SWRCB-77	229	33
4	SWRCB-78	229	33
5	SWRCB-79	229	33
6	SWRCB-80	229	33
7	SWRCB-81	229	33
8	SWRCB-82	229	33
9	SWRCB-85	229	33
10	SWRCB-103	229	33

1
2
3
4
5
6
7
8
9
10
11
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1 Tuesday, April 24, 2018 9:30 a.m.

2 PROCEEDINGS

3 ---000---

4 CO-HEARING OFFICER DODUC: Good morning
5 everyone. It is 9:30 on one of the clocks here,
6 anyway.

7 So welcome back to this Water Right Change
8 Petition for the California WaterFix Project.

9 Since I see all familiar-looking faces, as few
10 as they are right now, I will skip the usual
11 announcements except for the most important one.

12 Please take a moment and put all your
13 noise-making devices -- or check all your noise-making
14 devices -- to make sure that they are on silent,
15 vibrate, do not disturb or airplane mode or, even best
16 of all, off.

17 With that, are there any housekeeping matters
18 before we return to Mr. O'Hanlon for his
19 cross-examination?

20 Not seeing --

21 Oh, Mr. Obegi.

22 MR. OBEGI: We did have an obligation to
23 report back this morning, and I think Dr. Rosenfield's
24 prepared to do so.

25 CO-HEARING OFFICER DODUC: Thank you. Please

1 do that.

2

3 Jonathan Rosenfield,
4 recalled as a witness by the Natural
5 Resources Defense Council, The Bay
6 Institute, and Defenders of Wildlife,
7 having been previously duly sworn, was
8 examined and testified further as
9 follows:

10

11 DIRECT EXAMINATION (RESUMED)

12 WITNESS ROSENFELD: Good morning. Yes.

13 So we had a paper in my written testimony for
14 which I provided the wrong citation, which was quite
15 embarrassing.

16 The actual paper is Klimley et al. -- there's
17 five coauthors, (2017) -- it's from a journal called
18 Animal Biotelemetry 5:22 and the paper's title is
19 "Real-time Nodes Permit Adaptive Management of
20 Endangered Species of Fishes."

21 Also, I was asked to provide reference within
22 the MAST 2015 Report of where I was deriving statements
23 that outflows affect Delta Smelt success.

24 In general, Pages 154 through 162 of the MAST
25 2015 Report covers that topic in detail.

1 CO-HEARING OFFICER DODUC: Thank you.

2 Do we need to repeat any of that?

3 MS. ANSLEY: Maybe the title of the --

4 CO-HEARING OFFICER DODUC: Come up to the
5 microphone, please.

6 MS. ANSLEY: Perhaps one more time the title
7 of the replacement article.

8 WITNESS ROSENFELD: It's Real-time Nodes
9 Permit Adaptive Management of Endangered Species of
10 Fishes.

11 CO-HEARING OFFICER DODUC: All right. Thank
12 you, Dr. Rosenfield.

13 Mr. O'Hanlon, I believe you requested 30
14 minutes.

15 MR. O'HANLON: Yes, I did, although I went
16 over my questions again last night and I think I should
17 be shorter this morning.

18 CO-HEARING OFFICER DODUC: Excellent. Please
19 proceed.

20 WITNESS ROSENFELD: God bless you.

21 MR. O'HANLON: And all my questions relate to
22 te proposed conditions, Mr. Rosenfield's --
23 Dr. Rosenfield's proposed conditions for CVP and SWP
24 Permits.

25

1 CROSS-EXAMINATION BY

2 MR. O'HANLON: Good morning, Dr. Rosenfield.

3 WITNESS ROSENFELD: Good morning.

4 MR. O'HANLON: My name is Daniel O'Hanlon.

5 I'm counsel for the San Luis and Delta-Mendota Water
6 Authority and Westlands Water District.

7 May I please have Dr. Rosenfield's testimony,
8 which is PCFFA (sic) Exhibit 58.

9 And I'm looking at --

10 MR. OBEGI: That should be NRDC.

11 MR. O'HANLON: I'm sorry. NRDC-29, yes. Your
12 written testimony.

13 (Exhibit displayed on screen.)

14 MR. O'HANLON: Okay. To Page 43.

15 (Exhibit displayed on screen.)

16 MR. O'HANLON: All right. Dr. Rosenfield, do
17 you see at Page 43 of your testimony Condition
18 Number 4?

19 WITNESS ROSENFELD: Yes.

20 MR. O'HANLON: I'd like to ask you a few
21 questions about that.

22 WITNESS ROSENFELD: Okay.

23 MR. O'HANLON: It reads (reading):

24 "Carryover Storage: Implement the
25 Revised Shasta RPA."

1 Correct?

2 WITNESS ROSENFELD: Correct.

3 MR. O'HANLON: I'd like to first establish
4 what you're referring to by the "Revised Shasta RPA."

5 May I please have NRDC Exhibit 29.

6 (Exhibit displayed on screen.)

7 MR. O'HANLON: And, Dr. Rosenfield, does NRDC
8 Exhibit 29 describe the revised Shasta RPA you referred
9 to in your Proposed Condition Number 4?

10 WITNESS ROSENFELD: Yes, it does.

11 MR. O'HANLON: All right. Now, the re: line
12 in this letter, which is dated January 19, 2017, to
13 David Murillo, Regional Director of the Bureau of
14 Reclamation and on letterhead of National Marine
15 Fisheries Service.

16 The re: line says (reading):

17 "Proposed Amendment to the
18 Reasonable and Prudent Alternative of the
19 2009 BiOp (sic)."

20 Correct?

21 WITNESS ROSENFELD: Correct.

22 MR. O'HANLON: And this letter describes this
23 as a draft proposal; correct?

24 WITNESS ROSENFELD: That's my recollection.

25 MR. O'HANLON: Why don't we look at the third

1 paragraph --

2 (Exhibit displayed on screen.)

3 MR. O'HANLON: -- second sentence.

4 WITNESS ROSENFELD: (Examining document.)

5 Is the third paragraph the one that begins "on
6 August 2".

7 MR. O'HANLON: The second sentence on the last
8 full paragraph on the letter says (reading):

9 "Please consider this proposed
10 amendment as a draft . . ."

11 Do you see that?

12 WITNESS ROSENFELD: Yes.

13 MR. O'HANLON: It also says (reading):

14 ". . . we expect -- we expect this (sic)
15 to be subject to further discussion and
16 refinement."

17 Correct?

18 WITNESS ROSENFELD: Correct.

19 MR. O'HANLON: Could I please have .pdf Page 5
20 of this exhibit.

21 (Exhibit displayed on screen.)

22 MR. O'HANLON: Okay. There were four
23 enclosures to this letter and this is -- this is one of
24 them.

25 And this Enclosure Number 1, the title page

1 describes it as (reading):

2 "Track Changes Version of the 2011
3 Amended Reasonable and Prudent
4 Alternative that Includes Only the Pages
5 that have Salient 2017 Amendments."

6 So Enclosure 1 is a version of the existing
7 RPA with track changes to show the proposed -- draft
8 proposed edits to the RPA; is that correct?

9 WITNESS ROSENFELD: That's my understanding,
10 yes.

11 MR. O'HANLON: All right. And it has a
12 "DRAFT" watermark on it?

13 WITNESS ROSENFELD: Yes, it does.

14 MR. O'HANLON: All right. Let's look at a
15 couple of examples of what NMFS included in this
16 proposal.

17 May I please have Page -- .pdf Page 13 of this
18 exhibit.

19 (Exhibit displayed on screen.)

20 MR. O'HANLON: All right. And here on Page --
21 .pdf Page 13 of the exhibit, which says Page 21 at the
22 bottom, NMFS proposed new carryover store -- carryover
23 storage targets at Shasta for both spring and the end
24 of September; correct?

25 WITNESS ROSENFELD: Correct.

1 MR. O'HANLON: May I please have .pdf Page 20
2 of this exhibit.

3 (Exhibit displayed on screen.)

4 MR. O'HANLON: This is another example. This
5 says -- It says Page 29 at the bottom.

6 And here, NMFS proposed limits on releases
7 from Keswick if it appeared that certain metrics would
8 not be achievable that year; correct?

9 WITNESS ROSENFELD: Correct.

10 MR. O'HANLON: Has NMFS finalized any of the
11 draft proposals described in this letter in the
12 enclosures?

13 WITNESS ROSENFELD: I'm not aware of their
14 current status.

15 MR. O'HANLON: So you don't know whether
16 they've been finalized or not?

17 WITNESS ROSENFELD: That's correct.

18 MR. O'HANLON: All right. Do you know whether
19 NMFS has amended the provisions of its Biological
20 Opinion regarding Shasta operations since it sent this
21 letter?

22 WITNESS ROSENFELD: You mean finalized?

23 MR. O'HANLON: Well --

24 WITNESS ROSENFELD: Or are you talking about
25 amending this proposal or --

1 MR. O'HANLON: Yeah. Any -- Any version of
2 this.

3 WITNESS ROSENFELD: I'm not aware that
4 they've amended.

5 MR. O'HANLON: So when you refer to "revised
6 Shasta RPA" in your Condition Number 4, you actually
7 mean the draft proposed amendments issued by NMFS in
8 January 2017, not actual revisions to the BiOp;
9 correct?

10 WITNESS ROSENFELD: That's correct.

11 MR. O'HANLON: And may I please have San Luis
12 and Delta-Mendota Water Authority Exhibit 27. It's the
13 one that was on the thumb drive.

14 (Exhibit displayed on screen.)

15 MR. O'HANLON: Dr. Rosenfield, have you seen
16 this letter before?

17 WITNESS ROSENFELD: I need to read it a
18 little bit to be sure.

19 MR. O'HANLON: Sure. Take your time.

20 WITNESS ROSENFELD: (Examining document.)

21 CO-HEARING OFFICER DODUC: If it helps,
22 Dr. Rosenfield, you should have it on the monitor.

23 WITNESS ROSENFELD: Are my keys here, too?

24 (Examining document.)

25 WITNESS ROSENFELD: Can you scroll down?

1 (Exhibit displayed on screen.)

2 WITNESS ROSENFELD: More completely.

3 (Exhibit displayed on screen.)

4 WITNESS ROSENFELD: Keep scrolling.

5 (Exhibit displayed on screen.)

6 WITNESS ROSENFELD: Past this page.

7 (Exhibit displayed on screen.)

8 WITNESS ROSENFELD: I don't believe that I
9 reviewed this document, at least not in detail.

10 MR. O'HANLON: Okay. Are you aware that
11 Reclamation has questioned the feasibility of meeting
12 some of the conditions proposed in -- or, excuse me --
13 amendments proposed in NMFS' January 2017 letter?

14 WITNESS ROSENFELD: I'm generally aware of
15 that, yes.

16 MR. O'HANLON: May I please go back to
17 Dr. Rosenfield's written testimony.

18 (Exhibit displayed on screen.)

19 MR. O'HANLON: Specifically, Page 21.

20 (Exhibit displayed on screen.)

21 MR. O'HANLON: Dr. Rosenfield, at Lines 12 to
22 13 of this page, you state that (reading):

23 "The NMFS Biological Opinion for
24 WaterFix assumes implementation of the
25 revised Shasta Reservoir RPA."

1 Correct?

2 WITNESS ROSENFELD: That's correct.

3 MR. O'HANLON: What do you mean when you say
4 that the NMFS WaterFix BiOp assumes implementation of
5 the draft proposed amendment?

6 WITNESS ROSENFELD: I believe that I
7 referenced the Biological Opinion -- NMFS Biological
8 Opinion at 14, so I'd want to look at the text there.

9 But I think they made a general statement
10 about . . . about that subject.

11 MR. O'HANLON: All right. Can we please have
12 the Biological Opinion, which is State Water Resources
13 Control Board Exhibit 106.

14 (Exhibit displayed on screen.)

15 MR. O'HANLON: I believe it's .pdf Page 18.

16 (Exhibit displayed on screen.)

17 WITNESS ROSENFELD: (Examining document.)

18 MR. O'HANLON: Dr. Rosenfield, now that you
19 have Page 14 of the Biological Opinion on your screen,
20 can you please tell me what -- what on that page led
21 you to the statement that the WaterFix BiOp assumes
22 implementation of the draft proposed amendment?

23 WITNESS ROSENFELD: Can you scroll up to the
24 top line?

25 (Exhibit displayed on screen.)

1 WITNESS ROSENFELD: Can we see the bottom of
2 the page that precedes this?

3 (Exhibit displayed on screen.)

4 WITNESS ROSENFELD: Thanks. Right there.

5 (Examining document.)

6 WITNESS ROSENFELD: Can you scroll down a
7 little bit?

8 (Exhibit displayed on screen.)

9 WITNESS ROSENFELD: Thanks.

10 (Examining document further.)

11 WITNESS ROSENFELD: I believe I was looking
12 at that last sentence, that last half of the last
13 sentence in the middle of the screen (reading):

14 ". . . thus, the Shasta RPA adjustment
15 will control if there are any unforeseen
16 conflicts in Shasta operations and the
17 proposed Cal WaterFix operating
18 criteria."

19 MR. O'HANLON: Okay. But this does not say
20 that implementation of an RPA adjustment was assumed in
21 the effects analysis for the WaterFix BiOp; correct?

22 WITNESS ROSENFELD: No, I -- That's my
23 interpretation of this last sentence. It's -- The --
24 However, the RPA adjustment was not incorporated into
25 temperature modeling, as far as I understand, so there

1 is a little bit of a disconnect between what appears in
2 the rest of the Biological Opinion and that sentence.

3 But that's how I interpreted that sentence,
4 that they're assuming that there will be a Shasta RPA
5 adjustment and that it will control. If the -- If the
6 RPA adjustment is in conflict with operations that are
7 proposed under the CWF, then the adjust -- there will
8 be an adjustment and it will control.

9 MR. O'HANLON: I see. But you -- Let me ask:

10 Did you interpret this to mean that, by the
11 time this Biological Opinion was issued, the RPA had
12 been revised, and that implementation of some revised
13 RPA was assumed for purposes of this Biological
14 Opinion?

15 WITNESS ROSENFELD: Well, no. I mean,
16 given -- In -- In parallel to what you pointed out
17 before, the Shasta RPA adjustment is draft and it's
18 under discussion, and they had projected completion of
19 it by 2017.

20 My understanding is that that completion
21 didn't happen, so I'm referring to the completed RPA.

22 MR. O'HANLON: Okay. And you mentioned that
23 the temperature modeling for the Biological Opinion did
24 not include implementation of the RPA; correct?

25 WITNESS ROSENFELD: That's as best as I can

1 understand it.

2 MR. O'HANLON: Do you know whether any other
3 modeling for the WaterFix BiOp included implementation
4 of the revised RPA?

5 WITNESS ROSENFELD: Not the Shasta RPA, no.

6 MR. O'HANLON: All right. I'd like to go back
7 to Dr. Rosenfield's testimony at Page 48.

8 I'd like to ask you a few questions about the
9 proposed conditions related to outflow.

10 (Exhibit displayed on screen.)

11 WITNESS ROSENFELD: Page 48?

12 MR. O'HANLON: I'm sorry. I have the
13 wrong . . .

14 Scroll up a little bit, please --

15 (Exhibit displayed on screen.)

16 MR. O'HANLON: -- to Page 42.

17 (Exhibit displayed on screen.)

18 MR. O'HANLON: Thank you.

19 All right. At Lines 11 to -- 11 to 12, you're
20 proposing a condition -- what I'll call Condition 2A --
21 that the CVP and SWP be required to (reading):

22 "Maintain December to June outflows
23 at or above 67 to 75 percent of
24 unimpaired Delta outflow."

25 Correct?

1 WITNESS ROSENFELD: Correct.

2 MR. O'HANLON: All right. Is that condition
3 subject to any minimum outflow?

4 WITNESS ROSENFELD: There's generally a
5 healthy and safety -- human health and safety -- I'm
6 sorry.

7 Can you repeat the question again?

8 MR. O'HANLON: Yes. Let me rephrase it.

9 The condition is framed in terms of unimpaired
10 Delta outflow; correct?

11 WITNESS ROSENFELD: Correct.

12 MR. O'HANLON: Percentage of unimpaired Delta
13 outflow.

14 WITNESS ROSENFELD: Right.

15 MR. O'HANLON: Does that include any proposed
16 minimum Delta outflow, like a fixed number?

17 WITNESS ROSENFELD: And out -- Minimum
18 outflow you're saying?

19 MR. O'HANLON: Yes.

20 WITNESS ROSENFELD: No.

21 MR. O'HANLON: All right. Yesterday, you
22 testified that -- that, on average, current Delta
23 outflow is about half of unimpaired Delta outflow;
24 correct?

25 WITNESS ROSENFELD: In a median year, it's

1 less than half during the winter/spring period.

2 MR. O'HANLON: Do you know by how much the CVP
3 and SWP would have to reduce their diversions and
4 exports to achieve Delta outflow that is 67 to 75
5 percent of unimpaired Delta outflow?

6 WITNESS ROSENFELD: I don't.

7 And I imagine that that's a negotiation among
8 different parties of water users, but that's not my
9 expertise.

10 MR. O'HANLON: All right. Do you know whether
11 the CVP and SWP would have to make releases from
12 storage to achieve Delta outflow that is 67 to 75
13 percent of unimpaired Delta outflow?

14 WITNESS ROSENFELD: That's an operational
15 question. I mean, as -- as is written, 67 to 75
16 percent of unimpaired means less than the runoff that
17 there is in the Central Valley.

18 And it's -- I'm proposing -- I'm suggesting
19 here, for example, a seven-day running average, so
20 there's water flowing in the Central Valley.

21 This is saying that two-thirds to
22 three-quarters of that should, on a seven-day running
23 average, reach the western edge of the Delta.

24 So, there's nothing about that that
25 necessitates a release from storage, although there --

1 you know, there are operational considerations that --
2 that could cause that, but that's -- that's . . . a
3 whole modeling exercise.

4 MR. O'HANLON: All right. Do you know what
5 effect this condition, then -- referring now to
6 Condition 2A -- would have on the CVP and SWP's ability
7 to meet upstream temperature requirements?

8 WITNESS ROSENFELD: Can you repeat the
9 question? I'm sorry.

10 MR. O'HANLON: Yes.

11 Do you know what effect this condition -- I'm
12 talking now about the Delta outflow, unimpaired Delta
13 outflow condition -- would have on the CVP and SWP's
14 ability to meet temperature requirements in --
15 upstream, for example, below Keswick?

16 WITNESS ROSENFELD: That, again, would be
17 a -- a modeling exercise that I would have to build in
18 assumptions about how much water is being delivered to
19 other users all along -- all along the way.

20 So there's a -- You know, there's storage,
21 there's outflow, and then there's deliveries. There's
22 three legs to that stool.

23 So, again, it's a -- it's a management-level
24 decision, policy, operations, et cetera.

25 MR. O'HANLON: Okay. That's not something

1 that you're able to testify to; correct?

2 WITNESS ROSENFELD: Not at this point, no.

3 MR. O'HANLON: Do you know whether the CVP and
4 SWP could meet both this condition regarding outflow --
5 Delta -- unimpaired Delta outflow and your Proposed
6 Condition Number 4 regarding Shasta operations?

7 WITNESS ROSENFELD: I believe that they
8 could.

9 MR. O'HANLON: All right. What's that belief
10 based on?

11 WITNESS ROSENFELD: It's based on the
12 understanding that this is saying that -- that 2a calls
13 for less water than is in the watershed to -- as
14 running off of the watershed to flow out of the Delta
15 and the fact that there is storage -- there's storage
16 upstream of the Delta.

17 This flow requirement also only covers the
18 December-through-June period, so it's -- it's not the
19 full year, it's not the full amount of water, and
20 there's storage.

21 So I don't know that there's a conflict
22 between storing it -- an adequate amount of water
23 upstream and allowing this amount of water to flow
24 downstream.

25 MR. O'HANLON: That's not something that

1 you've analyzed, though; correct?

2 WITNESS ROSENFELD: I have not analyzed it.

3 I think it's in the proposal.

4 I have analyzed it in terms of the current RPA
5 and -- and outflow proposals that are similar to this,
6 and there is no -- Even in dry years, very dry years,
7 there's no necessary conflict between temperature
8 maintenance upstream, some deliveries for -- that would
9 support wildlife species like Ducks, Garter Snake,
10 et cetera, that they live in the Central Valley
11 adjacent to the river and Delta outflow requirements
12 like this.

13 MR. O'HANLON: All right. You testified
14 yesterday that you've not done any modeling of CVP/SWP
15 operations under your suite of proposed conditions;
16 correct?

17 WITNESS ROSENFELD: Under these conditions,
18 that's correct.

19 MR. OBEGI: Has The Bay Institute, NRDC, or
20 Defenders of Wildlife had anyone else do modeling of
21 CVP and SWP operations under this suite of proposed
22 conditions?

23 WITNESS ROSENFELD: I can say for TBI that we
24 have not done any modeling of these particular
25 requirements, although we've done a lot of work on --

1 on these requirements and Shasta storage, et cetera, in
2 the past, so that generally informs us.

3 I can't speak to whether NRDC or Defenders has
4 employed somebody particularly given my extended
5 absence.

6 MR. O'HANLON: Okay. Have you seen any
7 results of modeling of how the CVP and SWP would
8 operate under any of -- under this proposed suite of
9 conditions?

10 WITNESS ROSENFELD: No, I have not.

11 MR. O'HANLON: All right. In your Proposed
12 Condition 2b, that would require minimum Delta outflow
13 of 7100 cfs in July and August; correct?

14 WITNESS ROSENFELD: That's correct.

15 MR. O'HANLON: All right. And is that
16 regardless of year-type?

17 WITNESS ROSENFELD: Yes, it is.

18 MR. O'HANLON: And Proposed Condition 2c would
19 require September to November outflows in at least
20 11,400 cfs in wet and above-normal years, and 7400 cfs
21 in other year-types; correct?

22 WITNESS ROSENFELD: Correct.

23 MR. O'HANLON: And do you know whether the CVP
24 and SWP can operate to meet all these outflow
25 conditions, 2a, 2b and 2c, even in dryer years?

1 WITNESS ROSENFELD: I expect that they could
2 but I'm not an operational modeler and, you know,
3 models require a lot of different inputs which are in
4 the opinion of the -- the opinion or judgment of the
5 person who's inputting those inputs. So, you know, it
6 requires sort of a team effort to really suss out the
7 effects of this.

8 As I mentioned, a lot of judgments about which
9 consumptive water users get water, how much water they
10 get under what conditions, et cetera.

11 MR. O'HANLON: All right. I'd like to ask you
12 a few questions about your Condition Number 1, North
13 Delta bypass flows, which is on the previous page.

14 (Exhibit displayed on screen.)

15 MR. O'HANLON: All right. Under this
16 condition, the CVP and SWP would be required to
17 maintain flows past the North Delta diversion of at
18 least 35,000 cfs from November 1 to June 1 of each
19 year; correct?

20 WITNESS ROSENFELD: Correct.

21 MR. O'HANLON: And is -- Are you proposing
22 that that requirement would apply only when the North
23 Delta diversion's in operation?

24 WITNESS ROSENFELD: Yes, I think that's what
25 that . . . that implies.

1 MR. O'HANLON: Do you know what percentage of
2 time there is -- there is that level of flow, 35,000
3 cfs, in the Sacramento River at the location of the
4 proposed North Delta diversion under current
5 conditions?

6 WITNESS ROSENFELD: I don't.

7 But I will say that what happens under current
8 conditions is a reflection of both hydrology in the
9 system and management of storage upstream and
10 deliveries upstream, so . . .

11 MR. O'HANLON: Thank you, Dr. Rosenfield.

12 I have no further questions.

13 CO-HEARING OFFICER DODUC: Thank you,
14 Mr. O'Hanlon.

15 Mr. O'Brien, you're up.

16 And, Dr. Rosenfield, we will take a break
17 after Mr. O'Brien is done, and he's estimated 20
18 minutes.

19 WITNESS ROSENFELD: Okay. Great. Thank you.

20 MR. O'BRIEN: Good morning, Members of the
21 Board, Dr. Rosenfield.

22 My name is Kevin O'Brien.

23 CROSS-EXAMINATION BY

24 MR. O'BRIEN: I'd like to start by referring
25 to your written testimony, NRDC-58 on Page 9, Lines 14

1 to 25.

2 (Exhibit displayed on screen.)

3 MR. O'BRIEN: In this portion of your
4 testimony, Dr. Rosenfield, you describe what you refer
5 to as (reading):

6 "Major threats to Salmon in the
7 Central Valley."

8 Is that correct?

9 WITNESS ROSENFELD: That's correct.

10 MR. O'BRIEN: And one of the factors, the
11 major threats you identified is unsustainable water
12 temperature; correct?

13 WITNESS ROSENFELD: That's correct.

14 MR. O'BRIEN: Do you have an opinion, sir, as
15 to whether the WaterFix Project, if implemented, would
16 exacerbate temperature problems in the Upper Sacramento
17 River?

18 WITNESS ROSENFELD: That's what the modeling
19 seems to indicate, yes.

20 MR. O'BRIEN: Do you have an opinion on that
21 separate from the modeling?

22 WITNESS ROSENFELD: My opinion is informed by
23 the modeling because the Cal WaterFix effects are about
24 operations. And, again, operations are results of big
25 models that rely on a lot of user input, so --

1 user-derived input. So the -- the outputs of the
2 modeling are quite valuable in forming my opinion.

3 MR. O'BRIEN: And what is your opinion?

4 WITNESS ROSENFELD: My opinion is that Cal
5 WaterFix will exacerbate temperature effects downstream
6 of Shasta Reservoir and perhaps downstream of other
7 Project reservoirs in Sacramento Valley.

8 MR. O'BRIEN: And that's because of changes in
9 operation that will occur as a result of WaterFix?

10 WITNESS ROSENFELD: Yes.

11 MR. O'BRIEN: And when I refer to "operation,"
12 I'm talking about the Central Valley Project and the
13 State Water Project.

14 WITNESS ROSENFELD: Yes.

15 MR. O'BRIEN: Now, with respect to water
16 temperature, would you agree that there are a variety
17 of factors that can affect water temperature at any
18 specific location on the Sacramento River?

19 WITNESS ROSENFELD: Can you be more specific
20 about the variety of factors?

21 MR. O'BRIEN: Well, I was going to do that
22 after you answered my foundational question.

23 WITNESS ROSENFELD: Yeah, I can think of a
24 few factors that would affect temperature, sure.

25 MR. O'BRIEN: Why don't you go ahead and tell

1 me what those factors are.

2 WITNESS ROSENFELD: The ambient temperature
3 during the day; the preceding temperatures given the
4 travel time of water from the reservoir to the point
5 that you're talking about; storage in the reservoir is
6 a dominant effect because it affects the ability to
7 release cold water; operations of the reservoir
8 where -- where in the reservoir water is being released
9 from.

10 Even operations in the -- operations of the
11 reservoir in the previous year have been shown to
12 affect the availability of cold water behind large
13 reservoirs.

14 MR. O'BRIEN: Would flow and velocity of flow
15 in the river also be a factor?

16 WITNESS ROSENFELD: The work that my staff
17 has done on that shows that, obviously -- obviously,
18 water is gaining temperature in the hotter months,
19 hotter time periods, as it moves downstream in the
20 river until it becomes -- until the cold rates with air
21 temperature.

22 But the gain in temperature is not that great
23 per river mile, so it takes a long time for water to
24 heat up.

25 So, yes, there's a heating effect in warmer

1 months. There's also a cooling effect in colder
2 months. As water's released from the reservoir, it
3 cools if the air temperature's cold, and that effect
4 increases as you go downstream until there's
5 equilibration with ambient conditions.

6 MR. O'BRIEN: But my question really went to
7 the question of whether the rate of flow in the river
8 would also be a factor that could affect temperature in
9 the river.

10 WITNESS ROSENFELD: You mean the rate of
11 flow, like, at a given point in the river?

12 MR. O'BRIEN: Correct.

13 WITNESS ROSENFELD: And how much flow is
14 released upstream due to some thermal mass?

15 I believe that that is an effect that I've
16 heard discussed. But there's a -- It's a relatively
17 small effect, and it's swamped out sort of by the
18 scatter.

19 If we look at the data empirically, it's
20 swamped out by the scatter of other effects that are
21 happening in the river.

22 MR. O'BRIEN: Okay. Fair enough.

23 Now, with respect to the effects of
24 temperature on Chinook Salmon and, specifically, the
25 hatching of eggs and the generation of embryos by

1 Chinook Salmon.

2 Are you aware that the National Marine
3 Fisheries Service has proposed some additional work to
4 better understand the biological mechanisms that are
5 related to water temperature impacts on Chinook Salmon?

6 WITNESS ROSENFELD: I'm aware that they --
7 that a paper from some researchers at the south --
8 National Marine Fisheries Service Southwest Science
9 Center that was recently released identified the
10 mechanistic relationship between high temperature and
11 egg mortality.

12 I'm not aware of what additional work the
13 National Marine Fisheries Service is doing, but I think
14 that was a compelling look at mechanisms related to
15 temperature.

16 MR. O'BRIEN: Is there a relationship between
17 water temperature and dissolved oxygen in the streams?

18 WITNESS ROSENFELD: Is there -- Can you
19 repeat the question?

20 MR. O'BRIEN: Is there a physical relationship
21 between water temperature and the level of dissolved
22 oxygen in the stream?

23 WITNESS ROSENFELD: Well, there's a physical
24 relationship between water temperature and dissolved
25 oxygen in water in general.

1 The stream part sort of depends on all sorts
2 of factors about streamflow and roughness of the
3 surface, et cetera.

4 But, yes, there's a -- As temperatures
5 increase, water's ability to hold dissolved gases
6 decreases.

7 MR. O'BRIEN: Okay.

8 WITNESS ROSENFELD: That's why your soda
9 explodes on a hot day.

10 MR. O'BRIEN: Thank you for that. I always
11 wondered -- And I always wondered why that happened.

12 WITNESS ROSENFELD: I knew everyone was
13 wondering.

14 MR. O'BRIEN: Would you say that the
15 maintenance of certain levels of dissolved oxygen is an
16 important factor in the survival of Chinook Salmon
17 embryos?

18 WITNESS ROSENFELD: That maintenance of
19 dissolved oxygen is an important factor in survival?

20 Yes, in general, it's quite true.

21 MR. O'BRIEN: I'd like to turn now to Page 21,
22 Lines 10 to 12, of your written testimony.

23 (Exhibit displayed on screen.)

24 MR. O'BRIEN: NRDC-58.

25 You state in the first sentence that

1 (reading):

2 "During the recent drought, the
3 Bureau of Reclamation failed to maintain
4 adequate temperature control . . .
5 resulting in the near complete loss of
6 two separate year classes of juvenile
7 winter-run."

8 Do you see that?

9 WITNESS ROSENFELD: I do.

10 MR. O'BRIEN: What's the basis for that
11 statement?

12 WITNESS ROSENFELD: The basis for that
13 statement is agency reports; the agency testimony to
14 the State Water Board, among other places;
15 communications with Biologists in the field who work in
16 that -- in that geography and in that topical area; and
17 as well as this Martin et al. paper from researchers at
18 the Southwest Fishery Science Center, or whatever it's
19 called; as well as my long history of studying
20 temperature in Upper Sacramento River as they affect
21 winter-run Chinook Salmon.

22 The temperatures in the river in those years
23 were, from a Salmon egg's point of view,
24 extraordinarily high for extended periods of time, and
25 mortality -- high rates of mortality was a given under

1 those conditions.

2 MR. O'BRIEN: You used the term "agency."

3 Can you identify the agencies you were talking
4 about in that last answer?

5 WITNESS ROSENFELD: The National Marine
6 Fisheries Service, I believe. Hard to recall which
7 agencies said exactly what.

8 Department of Fish and Wildlife, State
9 Department of Fish and Wildlife.

10 And I believe the State Water Board itself in
11 its reporting on -- on 2014 and 2015 conditions adopted
12 that point of view as well.

13 MR. O'BRIEN: Have you ever personally
14 performed an independent analysis of the causes of
15 juvenile winter-run mortality that occurred in the
16 Sacramento River in 2014 and 2015?

17 WITNESS ROSENFELD: I'm not sure I understand
18 your question.

19 An independent analysis? At what level?

20 MR. O'BRIEN: Well, you've mentioned the fact
21 that you've relied on these various agencies that you
22 described to support the sentence that we're talking
23 about in your testimony.

24 I'm wondering whether you've ever attempted to
25 do your own separate analysis, separate and apart from

1 whatever analyses the agencies performed, to determine
2 causes of the juvenile winter-run mortality that
3 occurred in 2014-2015.

4 WITNESS ROSENFELD: Yes. I think I said that
5 I was relying also on my expertise in this area.

6 I didn't perform a quantitative analysis as
7 such. But qualitatively, based on what we know about
8 Salmon egg and juvenile response to high temperatures,
9 it was very clear to me -- and I think I made it very
10 clear in testimony to the State Board, and -- and
11 elsewhere -- that these water temperatures were not
12 acceptable in terms of maintaining juvenile egg --
13 egg-to-juvenile survival of winter-run Chinook Salmon.

14 I said as much to National Marine Fisheries
15 Service, California Department of Fish and Wildlife,
16 and I believe USBR administrators as well at the time.

17 MR. O'BRIEN: So you said you have not
18 performed a quantitative -- quantitative analysis of
19 the causation issue; is that correct?

20 WITNESS ROSENFELD: That's correct. And --

21 MR. O'BRIEN: I think it's a "yes" or "no"
22 answer.

23 WITNESS ROSENFELD: I did not perform a
24 quantitative analysis.

25 MR. O'BRIEN: Thank you.

1 And this qualitative analysis that you refer
2 to, is that written down anywhere?

3 WITNESS ROSENFELD: I think it's written in
4 several places, yes.

5 MR. O'BRIEN: Where would I find it?

6 WITNESS ROSENFELD: I'd have to refresh my
7 memory about what I said in what testimony to the State
8 Water Board.

9 But there's hearings about temperature
10 management and storage management, flow management in
11 2014 and 2015, several of them, before the State Water
12 Board where I provided that information and that
13 opinion.

14 I also wrote the to, as I said, the admin --
15 the Regional Administrator of the National Marine
16 Fisheries Service, and the Director of California
17 Department of Fish and Wildlife -- and I forget who
18 else might have been included on that transmission --
19 identifying that the temperatures that were being
20 discussed -- I believe that was in year 2015 -- were
21 well above the standards that would be protective of
22 Chinook Salmon eggs based on the literature that the
23 State geographic extent of protection was also
24 extreme -- of extreme concern because the fish were
25 being limited to a tiny area where other disasters

1 might occur as a result of -- of temperature, and that
2 there are sublethal effects of exposure to the
3 temperatures that for eggs might turn up as mortality
4 for juveniles, and for juveniles might turn up as
5 mortality further downstream when they smoltify, so
6 that the effects of this were going to be disastrous
7 and wide reaching, and especially when two -- when it
8 occurs two years in a row and has two cohorts.

9 So I made these qualitative analyses quite
10 clear and tried to raise the alarm anywhere that I
11 could.

12 MR. O'BRIEN: Well, in my view, there's a
13 difference between your opinions and your analysis.
14 And I'm really interested on your -- in your analysis.

15 And I guess I'm trying to understand -- I
16 wanted to look at the nature and extent of your
17 analysis, your qualitative analysis, of these issues.

18 Where would I go to find that?

19 WITNESS ROSENFELD: I think my previous
20 answer explains that.

21 I mean, we shouldn't confuse analysis with --
22 Quantitative analyses are very often qualitative and
23 cover -- cover the forest rather than getting lost in
24 the trees.

25 MR. O'BRIEN: So if I wanted to find --

1 WITNESS ROSENFELD: And -- And I had, as I
2 stated, the quantitative analyses of the agencies that
3 are responsible for protecting these species to bolster
4 my confidence in my qualitative analyses.

5 MR. O'BRIEN: You mentioned a study by Martin,
6 et al.

7 WITNESS ROSENFELD: That's correct.

8 MR. O'BRIEN: Are you familiar with the Martin
9 Model?

10 WITNESS ROSENFELD: I'm familiar with the
11 model that they described in that paper.

12 MR. O'BRIEN: And can you just briefly
13 describe what the Martin Model is.

14 WITNESS ROSENFELD: The mathematics of it, I
15 won't describe.

16 But they -- Their purpose was to compare
17 estimated mortality based on laboratory studies of
18 temperature effects on Chinook Salmon, or controlled
19 studies in general, compare those to field observations
20 of egg larval survival.

21 And they found that the laboratory studies
22 overestimated survival, underestimated mortality,
23 significantly and were relatively insensitive to
24 increases in temperature, the laboratory studies.

25 Their model -- Their modeling much more

1 closely tracked actual field observations relating
2 temperature to survival; that their model performed
3 much, much better as would be expected because
4 temperature affects eggs, and anybody who's eaten an
5 egg knows that.

6 So their -- their model tracked actual field
7 data in the Central Valley, in particular, much better
8 than modeling of mortality based on simply laboratory
9 field studies.

10 MR. O'BRIEN: Is it your understanding that
11 the Martin Model is still under development?

12 WITNESS ROSENFELD: I don't know the future
13 plans of -- of that model.

14 MR. O'BRIEN: Are you aware that the Delta
15 Stewardship Council's independent review panel has
16 stated that the Martin models' predictions of survival
17 will have sizeable uncertainty?

18 WITNESS ROSENFELD: I'm not aware of that
19 particular statement, no.

20 MR. O'BRIEN: Are you aware that the National
21 Marine Fisheries Service has taken the position that
22 appropriate use of the Martin Model, if any, is the
23 subject of ongoing agency deliberations as part of the
24 reinitiated consultation for the CVP?

25 WITNESS ROSENFELD: I'm not aware of specific

1 statements . . . of that sort.

2 But I am -- You know, having reviewed the
3 Martin paper, their finding of temperature threshold
4 and --

5 MR. O'BRIEN: I think you answered my
6 question, sir.

7 WITNESS ROSENFELD: Sure.

8 MR. O'BRIEN: Let's turn now to Page 24,
9 Line 12.

10 (Exhibit displayed on screen.)

11 MR. O'BRIEN: Dr. Rosenfield, in that portion
12 of your written testimony, you use the phrase
13 "population-level effect."

14 Do you see that?

15 WITNESS ROSENFELD: (Examining document.)

16 I'm just reading the sentence.

17 And now I need to read a sentence or two
18 before it to get some context. Sorry.

19 MR. O'BRIEN: Sure.

20 WITNESS ROSENFELD: (Examining document
21 further.)

22 Okay.

23 MR. O'BRIEN: How do you define the phrase
24 "population-level effect" as used in your testimony?

25 WITNESS ROSENFELD: An effect that would be

1 relevant to the viability and/or overall productivity
2 of the species -- of the -- of the population that's
3 under discussion, in this case winter-run Chinook
4 Salmon.

5 MR. O'BRIEN: In effect, it would be relevant
6 to the viability.

7 I assume you mean relevant in the sense of a
8 negative effect on viability; is that fair?

9 WITNESS ROSENFELD: Well, there can be
10 positive population-level effects as well.

11 MR. O'BRIEN: Okay. That's fair.

12 Would -- In your mind, would the issue of
13 genetic diversity be something you would look at to
14 determine whether a population-level effect has
15 occurred in a particular instance?

16 WITNESS ROSENFELD: Can you be more specific?

17 MR. O'BRIEN: Well, if you have a population
18 of fish, let's say, Chinook Salmon in the Upper
19 Sacramento River, in determining whether a particular
20 instance -- an effect -- let's just use temperature as
21 an example -- was population-level in magnitude, would
22 you want to consider the genetic diversity of the
23 remaining population?

24 WITNESS ROSENFELD: Genetic diversity
25 would -- would be a consideration but far from the only

1 consideration.

2 I think that, in my field, in the field of
3 conservation biology, there's often a weight given to
4 genetic diversity that supersedes the weight of other
5 factors that are important in determining viability
6 that's -- and that extra weight is, I believe,
7 unwarranted.

8 MR. O'BRIEN: That's your opinion?

9 WITNESS ROSENFELD: Yes.

10 (Timer rings.)

11 MR. O'BRIEN: If you were going to go about
12 determining whether a particular effect was a
13 population-level effect -- and let's again use the
14 Chinook Salmon and the Upper Sacramento River as an
15 example -- what would you do? What would your analysis
16 look like?

17 WITNESS ROSENFELD: Can you repeat that
18 question?

19 MR. O'BRIEN: Sure.

20 I'm just trying to get the practical aspects
21 of the analysis of whether particular effect on a
22 species is a population-level effect.

23 And I'm trying to get at the question of what
24 you as a Professional Biologist would do to determine
25 whether a population-level effect had occurred in a

1 particular instance.

2 WITNESS ROSENFELD: Well, I would -- As I
3 said, I would look at factors other than genetic
4 diversity, in addition to genetic diversity perhaps,
5 but abundance, special distribution of the population,
6 the trend in the population, the trend in population
7 abundance, factors that -- that are deemed
8 reasonably -- could reasonably be expected to be
9 threats, survival and other parts of the life cycle,
10 and threats in those parts of the life cycle. Life
11 history diversity as somewhat distinct from genetic
12 diversity would also be a factor.

13 MR. O'BRIEN: Have you performed an analysis
14 of the type you just described with respect to Chinook
15 Salmon in the Upper Sacramento River?

16 WITNESS ROSENFELD: Yes.
17 I mean, my -- It's a qualitative analysis
18 based on long years of studying winter-run Chinook
19 Salmon and the literature related to it.

20 MR. O'BRIEN: Is that analysis written down
21 anywhere?

22 WITNESS ROSENFELD: I believe that parts of
23 it are written down in various places, including my
24 testimony.

25 I've never written a manuscript on . . .

1 I have to stop and see whether that's true.

2 (Examining document.)

3 I actually have written a manuscript on
4 population distinction in Sacramento River Salmonids
5 with respect to the -- their capacity to be listed as
6 an evolutionarily significant units.

7 That was a long time ago, so I don't remember
8 exactly how I addressed the viability of the fish at
9 that time.

10 But since that time, I haven't written
11 any . . . single piece focused just on winter-run
12 Chinook Salmon that analyzed all those threats.

13 But I'm constantly tracking the productivity
14 of the fish, their abundance, their special
15 distribution, their survival upstream, downstream, in
16 the ocean.

17 So I'm kind of constantly in the process of
18 analyzing these data and taking them in.

19 MR. O'BRIEN: But you have not attempted to
20 put all of your analysis of this population-level
21 effect issue into one document, whether that be a
22 memorandum, or a manuscript, or something else; is that
23 correct?

24 WITNESS ROSENFELD: I mean, there's
25 significant writing about winter-run Chinook Salmon in

1 my 2010 TBI et al.'s --

2 MR. O'BRIEN: Excuse me, Dr. Rosenfield. That
3 was not my question.

4 The question --

5 WITNESS ROSENFELD: I'm trying to answer your
6 question as to where I summarized it the most.

7 MR. O'BRIEN: And that's not my question,
8 either.

9 WITNESS ROSENFELD: Okay.

10 MR. O'BRIEN: My question is whether this
11 qualitative analysis that you described of
12 population-level effect of winter-run Chinook Salmon
13 has been written down in any document, whether that be
14 a memorandum, a manuscript, a letter, testimony.

15 Where would I go to find that analysis? And
16 if the answer is, it hasn't been written down, it's a
17 perfectly fine answer. I just want to know where --

18 WITNESS ROSENFELD: The answer is it has been
19 written down in a distributed fashion across many
20 documents, not written as a linear narrative focused on
21 the topic that you're asking about.

22 MR. O'BRIEN: So it's never been written down
23 in one single document.

24 WITNESS ROSENFELD: Not to my recollection,
25 no.

1 CO-HEARING OFFICER DODUC: Mr. O'Brien, what
2 additional line of questioning do you have and how much
3 time do you need?

4 MR. O'BRIEN: I have about three more
5 questions.

6 CO-HEARING OFFICER DODUC: All right. Go
7 ahead, then.

8 MR. O'BRIEN: If I could just have a minute.
9 I think Mr. O'Hanlon may have actually covered this.

10 He did. I'm finished.

11 Thank you.

12 CO-HEARING OFFICER DODUC: Thank you,
13 Mr. O'Brien.

14 Let's take a 15-minute break.

15 We will return around 10:35-ish by that clock,
16 and then Mr. Bezerra will conduct his
17 cross-examination, and he estimated 60 minutes.

18 (Recess taken at 10:21 a.m.)

19 (Proceedings resumed at 10:35 a.m.):

20 CO-HEARING OFFICER DODUC: All right. It is
21 10:35. We are back in session.

22 Mr. Bezerra, since you requested 60 minutes,
23 please list the topics you intend to cover.

24 MR. BEZERRA: Sure.

25 I plan to cover the effect of the WaterFix

1 Project on Delta turbidity; the issue of Delta flows in
2 relation to abundance of Delta fish; and
3 Dr. Rosenfield's proposed terms and conditions, a lot
4 of which I think has been covered by another so
5 hopefully I can slim that down.

6 CO-HEARING OFFICER DODUC: Are those the
7 three?

8 MR. BEZERRA: Yes.

9 CO-HEARING OFFICER DODUC: All right.
10 Actually, one thing before you begin, Mr. Bezerra.

11 MR. BEZERRA: Sure.

12 CO-HEARING OFFICER DODUC: I'm told that
13 Miss Meserve is requesting time to cross on behalf of
14 Group 49.

15 I need clarification if that is in lieu of
16 Group 19 to which she requested yesterday or in
17 addition to and, if so, how much time.

18 All right. Someone please pass that along to
19 her if she's not watching right now.

20 With that, Mr. Bezerra, please begin.

21 MR. BEZERRA: Thank you very much.

22 CROSS-EXAMINATION BY

23 MR. BEZERRA: Dr. Rosenfield, it's good to see
24 at the hearing. I hope you're feeling -- at least
25 seems to be feeling somewhat better, so I'm glad to see

1 that.

2 WITNESS ROSENFELD: Thanks a lot.

3 MR. BEZERRA: My name is Ryan Bezerra. I'm a
4 counsel for the Cities of Folsom and Roseville,
5 Sacramento Suburban Water District and San Juan Water
6 District here in the Sacramento region.

7 Before we get going, I have a request about --
8 for you.

9 You're obviously a very knowledgeable guy and
10 want to explain as much as you can.

11 I've learned through painful experience that
12 Hearing Chair Doduc expects me to be extremely
13 efficient in cross-examination.

14 So if you'd answer my question and then feel a
15 need to explain, if you could just say that and I can
16 decide, or perhaps you can come back to that on
17 redirect by your counsel. If we could try to proceed
18 that way.

19 WITNESS ROSENFELD: I'll do my best to be as
20 quick as possible in everybody's best interest.

21 MR. BEZERRA: I appreciate that. Thank you.

22 Could we please pull up Dr. Rosenfield's
23 written testimony, Exhibit NRDC-58, and specifically
24 Page 37.

25 (Exhibit displayed on screen.)

1 MR. BEZERRA: And, Dr. Rosenfield, do --
2 Please scroll down to the paragraph that
3 begins on Line 15.

4 (Exhibit displayed on screen.)

5 MR. BEZERRA: Thank you.

6 Dr. Rosenfield, do you see that paragraph?

7 WITNESS ROSENFELD: "The San Francisco
8 Estuary ecosystem"?

9 MR. BEZERRA: Right.

10 And in that paragraph, you recite certain
11 findings about how much California WaterFix might
12 affect turbidity in the Delta; correct?

13 WITNESS ROSENFELD: That's correct.

14 MR. BEZERRA: Now, preliminarily, on Lines 15
15 and 16, you seem to be saying that the San Francisco
16 Estuary suffers from a deficit of sediment and
17 turbidity due to previous gold mining.

18 Is that what you meant to say?

19 WITNESS ROSENFELD: No, the deficit's not due
20 to previous gold mining.

21 There was a period when sediments were more
22 abundant as a result of gold mining activities
23 upstream.

24 MR. BEZERRA: Okay. So what did you mean to
25 say in that sentence relative to gold mining?

1 WITNESS ROSENFELD: That that flush of gold
2 mining sediments has -- appears to have moved through
3 the system, or at least that's the current belief.

4 MR. BEZERRA: Oh, okay. I'll come back to
5 that. Thank you very much.

6 Now, on Line 16, your reference to the
7 RDEIR/SDEIS.

8 What Project Alternative in that document are
9 you referencing here?

10 WITNESS ROSENFELD: I really forget the
11 coding of the -- of the Project alternatives from that
12 far back. I want to say Alternative 4A although, you
13 know . . .

14 MR. BEZERRA: Do you mean the Proposed
15 Project, three tunnels, 9,000 cfs --

16 WITNESS ROSENFELD: Yes.

17 MR. BEZERRA: Okay. Thank you.

18 Now, how -- how would you -- How are the
19 reductions in sediment supply calculated for purposes
20 of this paragraph?

21 WITNESS ROSENFELD: I'm not aware of the
22 calculation methods.

23 MR. BEZERRA: Okay. But you understand that
24 certain percentage reductions might occur.

25 WITNESS ROSENFELD: That's correct.

1 MR. BEZERRA: Okay. So what -- what is the
2 percentage -- Percentage of what are you referencing
3 here?

4 WITNESS ROSENFELD: I believe the documents
5 refer to a comparison between a No-Action Alternative
6 and a Project Alternative.

7 MR. BEZERRA: And would this be sediment
8 flowing in the Sacramento River or some other measure
9 of sediment in the Delta?

10 WITNESS ROSENFELD: I believe it's in the
11 Delta as a result of reductions caused by Cal WaterFix.

12 MR. BEZERRA: So this would be reductions of
13 sediment supply to the entire Delta, is what you're
14 referencing here.

15 WITNESS ROSENFELD: That's my understanding.

16 MR. BEZERRA: Okay. Thank you.

17 Okay. If we could please scroll up to
18 Page 37, Line 11, in this document.

19 (Exhibit displayed on screen.)

20 MR. BEZERRA: And, Dr. Rosenfield, do you see
21 the sentence, Delta Smelt are believed to prefer
22 habitats with relatively high turbidity?

23 I believe that's your --

24 WITNESS ROSENFELD: I believe that's -- I
25 think that's Line 7, 8.

1 MR. BEZERRA: Oh, okay. Thank you very much.

2 Sorry.

3 WITNESS ROSENFELD: Is that what you're
4 referring to?

5 MR. BEZERRA: Yes, that's what I'm referring
6 to.

7 Do you see that sentence? Obviously, you do.

8 But what does -- What do you mean by habitats
9 with relatively high turbidity?

10 WITNESS ROSENFELD: Well, habitats that
11 are -- have higher turbidity or less opacity than other
12 habitats that the same organisms might occupy.

13 MR. BEZERRA: Okay. So you're speaking as a
14 general matter here, not as particular parts of the
15 Delta.

16 Is that accurate?

17 WITNESS ROSENFELD: Well, the sentence is --
18 is general.

19 MR. BEZERRA: Okay. Now, in the Delta, does
20 Delta Smelt abundance tend to be higher in years with
21 high turbidity relative to other years?

22 WITNESS ROSENFELD: Can you repeat the
23 question?

24 MR. BEZERRA: Sure.

25 Is Delta Smelt abundance, does it tend to be

1 higher in years with relatively high turbidity as
2 opposed to other years?

3 WITNESS ROSENFELD: I believe there's a
4 correlation with turbidity, as well as other factors,
5 yeah.

6 MR. BEZERRA: Okay. And why are Delta Smelt
7 believed to prefer habitats with relatively high
8 turbidity?

9 WITNESS ROSENFELD: The mechanism is not well
10 determined, so there's a bunch of hypotheses out
11 there -- behavioral, ecological, et cetera -- but I
12 don't think the cause is worked out or that it's
13 necessarily one cause.

14 MR. BEZERRA: Okay. So what -- What are the
15 hypotheses for why Delta Smelt prefer relatively high
16 turbidity habitats?

17 WITNESS ROSENFELD: Some of these are at
18 different levels of analyses so they're not necessarily
19 contradictory to each other.

20 But it may be that Delta Smelt seek out
21 high -- high turbidity environments or environments
22 where the water is more opaque, so that's a behavioral
23 thing.

24 On an ecological level, it may be that they
25 are eaten -- that Delta Smelt are consumed in areas

1 where they're more visible to predators.

2 Going back to the first method, the choosing
3 environment, there's a level of analysis about why are
4 they choosing that environment, is that because there's
5 where their food items are, or that's where it's easier
6 for them to see and prey on their food items, or is it
7 that there is an awareness of predation risk and so
8 they go to seek out cover.

9 Again, there's multiple hypotheses at
10 different levels of -- You know, different researchers
11 would approach the question in different ways based on
12 the researcher's interest.

13 MR. BEZERRA: Thank you.

14 Could we please scroll to Page 33 of this
15 document. Hopefully, it's Lines 8 through 9.

16 (Exhibit displayed on screen.)

17 MR. BEZERRA: And do you see the --

18 WITNESS ROSENFELD: Eight through nine?

19 MR. BEZERRA: Eight through nine.

20 Do you see the sentence, for example, that
21 (reading):

22 ". . . Delta Smelt, Longfin Smelt are
23 believed to prefer relatively high
24 turbidity habitats."

25 WITNESS ROSENFELD: Yes.

1 MR. BEZERRA: And by "relatively high
2 turbidity habitats" for Longfin Smelt, do you mean the
3 same things we just discussed for Delta Smelt?

4 WITNESS ROSENFELD: Well, Longfin Smelt live
5 in the Delta proper for a much smaller part of their
6 life cycle than Delta Smelt do, so this is referring to
7 that part of the life cycle in the Delta.

8 MR. BEZERRA: Okay. Thank you.

9 And so why are Longfin Smelt believed to
10 prefer relatively high turbidity habitats?

11 WITNESS ROSENFELD: The answer is the same as
12 for Delta Smelt.

13 MR. BEZERRA: Okay. Thank you.

14 All right. Going back to Page 37 of this
15 document on --

16 WITNESS ROSENFELD: I'm sorry.

17 Just to clarify.

18 MR. BEZERRA: Sure.

19 WITNESS ROSENFELD: It's not necessarily the
20 same reasons for Delta Smelt. It's that the multiple
21 hypotheses, various levels of analysis, no real
22 evidence to segregate one --

23 MR. BEZERRA: Okay. So --

24 WITNESS ROSENFELD: -- reason from another.

25 MR. BEZERRA: -- what are the multiple

1 hypotheses for Longfin Smelt?

2 WITNESS ROSENFELD: To avoid predation, to
3 increase larval feeding success. Those are probably,
4 you know, the two major ones.

5 MR. BEZERRA: Thank you.

6 WITNESS ROSENFELD: Yeah.

7 MR. BEZERRA: So -- Okay. So if we could
8 please go to Page 37.

9 WITNESS ROSENFELD: Or another one, because
10 they get eaten in high water environment --
11 environments where there's high water clarity. So --

12 MR. BEZERRA: Less turbid water.

13 WITNESS ROSENFELD: Less turbid water, like a
14 hypothesis is that they may just disappear in less
15 turbid water, because they're more vulnerable --

16 MR. BEZERRA: Thank you.

17 WITNESS ROSENFELD: -- so you see them in
18 turbid water.

19 MR. BEZERRA: Thank you.

20 Okay. So, on Line 10, there's a sentence
21 (reading):

22 "Increasing water clarity is
23 recognized as a significant impact on
24 Delta Smelt and other native fisheries in
25 the Delta."

1 Do you see that . . . sentence?

2 WITNESS ROSENFELD: What page again?

3 MR. BEZERRA: Page 37.

4 WITNESS ROSENFELD: Oh, sorry.

5 The sentence at Line 10, "Increasing water
6 clarity is recognized"?

7 MR. BEZERRA: Correct.

8 WITNESS ROSENFELD: Okay.

9 MR. BEZERRA: And you use the phrase "other
10 native fisheries."

11 What other fish are included in that
12 statement?

13 WITNESS ROSENFELD: I have to refresh my
14 memory for a moment.

15 Chinook Salmon.

16 MR. BEZERRA: Okay. Now --

17 WITNESS ROSENFELD: For example, yeah.

18 MR. BEZERRA: -- what do you mean when you say
19 that (reading):

20 "Increasing water clarity is
21 recognized as a significant impact
22 on . . . native fisheries in the Delta."

23 WITNESS ROSENFELD: I mean that various
24 researchers have indicated that water clarity --
25 increasing water clarity is related -- is associated or

1 correlated with declines in native fishes, so it's
2 believed to be of concern.

3 MR. BEZERRA: Okay. Thank you.

4 Now, in -- In your opinion, how would the
5 California WaterFix Project affect or result in that
6 kind of significant impact via turbidity effects?

7 WITNESS ROSENFELD: You're asking me for the
8 mechanism by which Cal WaterFix would --

9 MR. BEZERRA: Well, I just want to understand
10 your statement here about that increasing water clarity
11 would have a significant impact on native fisheries.

12 How -- And how do you link that to the
13 California WaterFix Project?

14 WITNESS ROSENFELD: So Cal WaterFix is
15 diverting water -- The North Delta diversions part of
16 the Cal WaterFix is diverting water from the Sacramento
17 River, which is a source of turbidity, a source of
18 suspended sediment, which is an element of turbidity.

19 And as it diverts water, it's diverting that
20 suspended sediment, so that's -- the suspended sediment
21 is not reaching the Delta, causing a reduction in
22 suspended sediments there.

23 MR. BEZERRA: And so your concern is that that
24 diversion of sediments from the Sacramento River,
25 again, would affect turbidity in the entire Delta.

1 WITNESS ROSENFELD: Yes. And that's the
2 concern that I've read in other documents as well.

3 MR. BEZERRA: And that would affect multiple
4 native fish that use the Delta as its habitat; correct?

5 WITNESS ROSENFELD: Yes. And it would --
6 That use the Delta habitat in their Delta life stage,
7 right.

8 It would also tend to benefit species that
9 prefer higher water clarity, which includes some of the
10 non-native invasive species that we're concerned about.

11 MR. BEZERRA: Okay. Thank you.

12 So, if we could please go to Page 43 of this
13 document, and specifically Line 3.

14 (Exhibit displayed on screen.)

15 MR. BEZERRA: And this is your Proposed Term 3
16 about -- which states, "Turbidity: Limit Delta" --
17 Excuse me. (Reading):

18 "Turbidity: Limit WaterFix-induced
19 reduction of sediment inputs to the Delta
20 to less than 5 percent."

21 Why did you select 5 percent here?

22 WITNESS ROSENFELD: It's a . . .

23 There's no analysis that says 5 percent is a
24 magic number.

25 The intent is -- of that requirement is to

1 recognize the effects of turbidity, recognize the
2 effects of Cal WaterFix on turbidity, and minimize
3 those effects to the extent -- maximum extent possible.

4 MR. BEZERRA: Okay. Minimize the effects on
5 turbidity throughout the Delta of the WaterFix Project.

6 WITNESS ROSENFELD: Correct.

7 And in the -- Throughout the Delta and also in
8 habitats specifically below the North Delta diversion.

9 MR. BEZERRA: Thank you.

10 I'd like to pull up Exhibit BKS-268.

11 And I have a hard copy if you'd like that. It
12 should be pretty readable on the screen, but I can give
13 you a hard copy if you like.

14 WITNESS ROSENFELD: Sure, I'll take a hard
15 copy.

16 MR. BEZERRA: (Handing document to the
17 witness.)

18 (Exhibit displayed on screen.)

19 WITNESS ROSENFELD: Did you mean to give me
20 two?

21 MR. BEZERRA: Yes. One's for Mr. Obegi for
22 his reading pleasure.

23 WITNESS ROSENFELD: Okay.

24 MR. BEZERRA: And this is a copy of a 2013
25 paper by Hestir et al. published in the journal Marine

1 Geology. It's titled (reading):

2 "A step decrease in sediment
3 concentration in a highly modified tidal
4 river delta following the 1983 El Niño
5 floods."

6 Dr. Rosenfield, are you familiar with this
7 paper?

8 WITNESS ROSENFELD: I don't believe I'm
9 familiar with this paper specifically. But some of the
10 author -- I'm familiar with some of the authors' names,
11 so I've read others of their papers.

12 MR. BEZERRA: Okay. Let's see what we can do
13 this.

14 If we can go to Page 308, which is . . .

15 Just go to 308.

16 (Exhibit displayed on screen.)

17 MR. BEZERRA: Thank you. Miss Gaylon's on top
18 of it.

19 If we could go to the first paragraph under
20 heading "4. Results."

21 (Exhibit displayed on screen.)

22 MR. BEZERRA: Do you see in this paragraph,
23 it -- the authors discuss a (reading):

24 ". . . Step increase (sic) in TSS after
25 1983 in the upper estuary."

1 WITNESS ROSENFELD: Did you say -- Can you
2 repeat the question?

3 MR. BEZERRA: Sure.

4 Do you see where the authors state (reading):

5 "There was a significant step
6 decrease in TSS after 1983 in the upper
7 estuary."

8 WITNESS ROSENFELD: Yes.

9 MR. BEZERRA: Okay. Do you understand the
10 term "TSS" to be "total suspended solids"?

11 WITNESS ROSENFELD: Without having read the
12 paper, that would be my assumption.

13 MR. BEZERRA: Okay. Now, you said previously
14 that, in relation to gold mining, there was -- there
15 has been a washout of the gold mining debris?

16 I think that's what you said earlier.

17 WITNESS ROSENFELD: That's the hypothesis
18 that I understand from people who study the movement of
19 sediments through the rivers to the Delta.

20 MR. BEZERRA: Okay. This paragraph beginning,
21 "There was a significant step decrease," does that
22 paragraph reflect your understanding of the work on
23 this subject?

24 WITNESS ROSENFELD: I -- I believe I've seen
25 other dates given for the significant step decrease

1 but, yes, it's my understanding that there was a
2 non-linear decrease in sediment delivered to the Delta
3 in relatively recent times.

4 MR. BEZERRA: Okay. And do you understand
5 that step decrease to be associated with El Niño
6 events?

7 WITNESS ROSENFELD: This paper is the -- is
8 referencing an El Niño event I think other papers
9 are -- haven't . . .

10 I'm not aware of the widespread linkage of
11 that step decrease to El Niño events, but to big water
12 years, that may or may not correspond to El Niños.

13 MR. BEZERRA: Okay. So I just want to unpack
14 that a little bit.

15 So what -- what you're saying is, your -- you
16 do understand that, as a result of very wet water years
17 in recent times, there's been a step decrease in
18 sediment available in the Delta; correct?

19 WITNESS ROSENFELD: I understand that that's
20 the hypothesis that -- that folks who work on this feel
21 confident in.

22 MR. BEZERRA: Okay. And so that would
23 indicate that the California WaterFix Project would be
24 implemented in an environment where there already have
25 been step decreases in available sediment to the Delta;

1 correct?

2 WITNESS ROSENFELD: That's correct.

3 MR. BEZERRA: And so California WaterFix would
4 be implemented in an environment with reduced turbidity
5 relative to historical periods; correct?

6 WITNESS ROSENFELD: Yeah.

7 Turbidity now is lower than it has been in --
8 in the past when we measured -- in the recent past,
9 meaning the period where we measured that.

10 So, yes, Cal WaterFix would be implemented in
11 an environment where -- where that's true.

12 MR. BEZERRA: Okay. Thank you.

13 Okay. I'd like to go to Page 24, Lines 25 to
14 27, in your testimony, NRDC-58.

15 (Exhibit displayed on screen.)

16 MR. BEZERRA: Okay. And there, you -- you
17 describe a strong --

18 WITNESS ROSENFELD: What page? I'm sorry.

19 MR. BEZERRA: I'm sorry. Lines 25 through 27
20 on Page 24.

21 WITNESS ROSENFELD: Yes.

22 MR. BEZERRA: And there, you describe a
23 (reading):

24 ". . . Strong, significant, and
25 persistent influence of winter-spring

1 Delta outflow on abundance of Longfin

2 Smelt in the subsequent fall . . ."

3 Correct?

4 WITNESS ROSENFELD: Yes.

5 MR. BEZERRA: And in making that statement,
6 are you -- you're relying on relative Abundance Index
7 generated from Department of Fish and Wildlife's Fall
8 Midwater Trawl; correct?

9 WITNESS ROSENFELD: The Fall Midwater Trawl
10 and to the bait of two different fishing gears deployed
11 by the IEP Program's Bay Study Program --

12 MR. BEZERRA: Okay. Thank you.

13 WITNESS ROSENFELD: -- which shows some more
14 patterns.

15 MR. BEZERRA: It's -- The Fall Midwater Trawl
16 is a calculated value; correct?

17 WITNESS ROSENFELD: The Fall Midwater Trawl
18 Index for Longfin Smelt abundance is a calculated
19 value, yes.

20 MR. BEZERRA: It's not a -- It's not an
21 accumulation of the raw sampling data. It's calculated
22 from the raw sampling data.

23 WITNESS ROSENFELD: Right, following
24 ecological best practices.

25 MR. BEZERRA: Okay. And in calculating an

1 index, the Department applies certain weighting factors
2 to the trawl's raw sampling data; correct?

3 WITNESS ROSENFELD: That's my understanding.

4 MR. BEZERRA: Okay. Could we please pull up
5 Exhibit BKS-263.

6 (Exhibit displayed on screen.)

7 MR. BEZERRA: Which is a 2008 paper by Newman.

8 And, again, I have a paper copy if you'd like
9 it.

10 WITNESS ROSENFELD: Sure.

11 MR. BEZERRA: (Handing document to the
12 witness.)

13 And could we please go to Page 3 of this
14 document.

15 (Exhibit displayed on screen.)

16 MR. BEZERRA: And can we scroll down, please.

17 (Exhibit displayed on screen.)

18 MR. BEZERRA: I apologize. It's -- It -- It's
19 the fourth .pdf page.

20 (Exhibit displayed on screen.)

21 MR. BEZERRA: There we go.

22 Dr. Rosenfield, do you see the map here in the
23 document?

24 WITNESS ROSENFELD: I do.

25 MR. BEZERRA: Do you understand that the

1 California Department of Fish and Wildlife uses certain
2 areas within the Delta in accumulating its raw data for
3 the Trawl Index?

4 WITNESS ROSENFELD: The . . . The areas are
5 used . . .

6 My understanding is that the areas are used to
7 calculate a mean catch per effort within the area and
8 then expand by an area or a volume weighting.

9 MR. BEZERRA: And the Department weights the
10 catch in certain areas in calculating the Abundance
11 Index; correct?

12 WITNESS ROSENFELD: Correct.

13 MR. BEZERRA: Okay. Does -- How -- How does
14 the Department weight those areas?

15 WITNESS ROSENFELD: I'm not familiar with
16 their exact weightings.

17 MR. BEZERRA: Okay. Do you know whether those
18 weightings vary from year to year?

19 WITNESS ROSENFELD: I don't believe they do.

20 MR. BEZERRA: Do you know if they vary
21 depending on how much fish are caught in given areas?

22 WITNESS ROSENFELD: No, that wouldn't . . .
23 That wouldn't -- That doesn't sound right.

24 MR. BEZERRA: Do you know whether they're
25 weighted according to an assumed volume of water in

1 those areas?

2 WITNESS ROSENFELD: I'm not familiar with
3 exactly how they do it for the Fall Midwater Trawl.

4 For the Bay Study, there's a different but
5 similar . . . stratification and there, I believe, it
6 is by volume of water.

7 But I'm not sure for the Fall Midwater Trawl
8 whether it's volume or area or some other factor.

9 MR. BEZERRA: Do you know for the Fall
10 Midwater Trawl whether or not the Department of Fish
11 and Wildlife catches fish in what it calls non-index
12 areas?

13 WITNESS ROSENFELD: I believe that's true.

14 MR. BEZERRA: And those non-index areas are
15 not used in count -- in calculating the Abundance
16 Index; correct?

17 WITNESS ROSENFELD: That's correct.

18 MR. BEZERRA: The trawl does not capture
19 Longfin Smelt at a constant rate; correct?

20 WITNESS ROSENFELD: Can you define "constant
21 rate"?

22 MR. BEZERRA: It doesn't capture certain
23 amounts -- certain amounts of fish according to volumes
24 of water; correct? It varies. There's no constant
25 rate of catch per amount of water sampled.

1 WITNESS ROSENFELD: That's why they're doing
2 the sampling --

3 MR. BEZERRA: Okay.

4 WITNESS ROSENFELD: -- yes.

5 MR. BEZERRA: And, do you know: Does CDFW
6 attempt to apply any correction factors for the
7 efficiency of the trawl in catching Longfin Smelt in
8 calculating the Abundance Index?

9 WITNESS ROSENFELD: Can you repeat that
10 question?

11 MR. BEZERRA: Sure.

12 The Department does not apply any correction
13 factors to the raw sampling data to account for the
14 trawl's efficiency in catching Longfin Smelt when it
15 calculates the Abundance Index; correct?

16 WITNESS ROSENFELD: I'm not familiar --
17 familiar with any -- with the correction factors that
18 they use or don't use.

19 I know that Mr. Randy Baxter at California
20 Department of Fish and Wildlife is very concerned
21 about -- generally very concerned about making sure
22 that gear fishes is incorporated into estimates, but
23 I'm not sure how it applies to the Fall Midwater Trawl,
24 if at all.

25 MR. BEZERRA: Okay. Thank you.

1 I'd like to go to BKS Exhibit 267.

2 And, again, I'll give you a copy of it.

3 WITNESS ROSENFELD: So many gifts.

4 (Exhibit displayed on screen.)

5 MR. BEZERRA: This is a 2017 paper by Mahardja
6 that you cited in your testimony; correct?

7 WITNESS ROSENFELD: (Examining document.)

8 I need to refresh my memory here.

9 MR. BEZERRA: Sure.

10 And if we could -- We can bring up the
11 testimony; I can point out the reference, if you like.

12 (Exhibit displayed on screen.)

13 WITNESS ROSENFELD: Yeah, that's --

14 MR. BEZERRA: Okay. If we could go to
15 Page 37, Line 7 --

16 (Exhibit displayed on screen.)

17 MR. BEZERRA: -- in NRDC-58.

18 WITNESS ROSENFELD: Page?

19 MR. BEZERRA: 37, Line 7.

20 WITNESS ROSENFELD: 37, Line 7.

21 (Examining document.)

22 WITNESS ROSENFELD: I just want to clarify
23 because I may have been looking at an early version of
24 this paper, but I want to make sure that I cited the
25 right -- the right paper by Mahardja.

1 I believe this is it, yes.

2 MR. BEZERRA: Okay. Thank you.

3 If we could please go to Page 495 in the
4 paper, which is .pdf Page 8.

5 (Exhibit displayed on screen.)

6 MR. BEZERRA: And under the heading "4
7 Discussion," the first sentence states (reading):

8 "Overlooking imperfect detection in
9 ecological monitoring can result in
10 biased estimation of species abundance
11 and distribution."

12 Do you see that sentence?

13 WITNESS ROSENFELD: I see the sentence, yes.

14 MR. BEZERRA: Do you agree with that
15 statement?

16 THE WITNESS: (Examining document.)

17 I think it's a very general statement that --
18 that could be subject to misinterpretation, so can I
19 explain to you what I --

20 MR. BEZERRA: Sure.

21 WITNESS ROSENFELD: -- take it to mean?

22 I mean, imperfect detection is a
23 characteristic of ecological monitoring. There's
24 not -- I don't know of perfect detection in most
25 ecological systems based on monitoring.

1 So, could that result in biased estimation?

2 Yes, it could result in biased estimation, but only if
3 the imperfect detection is biased in a way that's not
4 accounted for.

5 And, furthermore, if the bias is always there
6 to the same extent, but the sampling is being used in
7 the same way over a long period of time, then even
8 though there's a bias, if you're using it -- using the
9 Monitoring Index in a rel -- in a relative fashion,
10 then it -- it somewhat mitigates for the -- for the
11 bias.

12 MR. BEZERRA: What are you understanding -- I
13 think you used the phrase "overlooking imperfect
14 detection."

15 What does that mean to you?

16 WITNESS ROSENFELD: I mean, again, it's a --
17 it's a very general statement. It's like, you know,
18 overlooking not eating your breakfast can result in
19 health problems. Yes, potentially, but not
20 necessarily.

21 So I don't want it to be, you know . . .

22 If one is aware of imperfect detection but
23 continues to do the ecological monitoring in certain
24 ways, correcting for the imperfect detection, or
25 treating the data in the same way rigorously throughout

1 time, then there are still uses for the monitoring.

2 MR. BEZERRA: Okay. Thank you.

3 Now, do you see the next sentence in the paper
4 (reading):

5 "Prior to this study, SFE fisheries
6 managers have had minimal quantitative
7 information on the role of imperfect
8 detection in their long-term monitoring
9 programmes."

10 Do you understand that the term "SFE" refers
11 to the San Francisco Estuary?

12 WITNESS ROSENFELD: That would be assumption,
13 yes.

14 MR. BEZERRA: And do you agree with the
15 statement in this sentence that before (reading):

16 ". . . This study, fisheries managers
17 have had minimal quantitative information
18 on the role of imperfect detection
19 in . . . long-term monitoring
20 programmes."

21 WITNESS ROSENFELD: I think that might be
22 overstating the case.

23 MR. BEZERRA: How much information do you --

24 WITNESS ROSENFELD: This paper provides
25 information but, you know, "minimal" is a term that's

1 in the eyes of the -- of the beholder and, in this
2 case, in the eyes of the author to some extent.

3 So it's good to say that you're making a
4 contribution -- they are -- but I wouldn't want
5 "minimal" to be misread as "none."

6 MR. BEZERRA: Okay. To the best of your
7 knowledge, has the Department of Fish and Wildlife
8 attempted to account for the Fall Midwater Trawl's
9 imperfect detection of Longfin Smelt in calculating
10 that trawl's Abundance Index?

11 WITNESS ROSENFELD: Can you repeat that
12 question?

13 MR. BEZERRA: Sure.

14 To the best of your knowledge, has the
15 Department of Fish and Wildlife attempted to account
16 for the Fall Midwater Trawl's imperfect detection of
17 Longfin Smelt in calculating the trawl's Abundance
18 Index?

19 WITNESS ROSENFELD: The trends of the Fall
20 Midwater Trawl Abundance Index -- which is only an
21 index, not a platinary opinion, that's to say it's not
22 a population estimate -- are very well supported by
23 trends in other sampling programs. So I --

24 MR. BEZERRA: That wasn't my question.

25 WITNESS ROSENFELD: I'm not aware of the

1 exact precautions or discussions that they have
2 internally about how to correct for imperfect
3 detection, but I would say that the patterns detected
4 in the Fall Midwater Trawl are supported very strongly
5 by patterns in other trawls with different methodology.

6 MR. BEZERRA: Okay. And that -- that wasn't
7 my question.

8 My question was, to the best of your
9 knowledge, has the Department of Fish and Wildlife
10 attempted to account for the Fall Midwater Trawl's
11 imperfect detection of Longfin Smelt in calculating
12 that trawl's Abundance Index?

13 WITNESS ROSENFELD: Right. And you used the
14 word "account for," and my answer regarding other
15 sampling programs is one way in which they would
16 account for any problem with a certain sampling
17 program.

18 Is it -- Is it matched by -- Are other
19 sampling programs using other methods finding the same
20 pattern?

21 So I was trying to address your question.

22 MR. BEZERRA: Okay.

23 WITNESS ROSENFELD: But if I take your
24 question as I think you mean it, to mean about the Fall
25 Midwater Trawl, what discussions have there been, I'm

1 not aware of the discussions.

2 MR. BEZERRA: Okay. Thank you.

3 Going back to your testimony, NRDC-58,
4 Page 24, Lines 25 to 27.

5 (Exhibit displayed on screen.)

6 WITNESS ROSENFELD: Page 24?

7 MR. BEZERRA: 24, Lines 25 through 27.

8 WITNESS ROSENFELD: Got it.

9 (Examining document.)

10 MR. BEZERRA: This statement is based on a
11 statistical analysis of a Fall Midwater Trawl's
12 Abundance Index relative to flows; correct?

13 WITNESS ROSENFELD: Again, it's -- it's not
14 necessarily specific to the Fall Midwater Trawl. The
15 Fall Midwater Trawl is one of the indices that's used,
16 but various papers that are cited at the end of that
17 sentence also look at other sampling programs.

18 MR. BEZERRA: Okay. But your statement here
19 is based, at least in part, on a statistical analysis
20 of the Fall Midwater Trawl Index --

21 WITNESS ROSENFELD: Yes.

22 MR. BEZERRA: -- for Longfin Smelt.

23 WITNESS ROSENFELD: In part, yes.

24 MR. BEZERRA: Okay. Thank you.

25 Okay. I'd like to go to the 2016 paper you

1 coauthored with Matthew Nobriga, which is Exhibit
2 NRDC-36.

3 (Exhibit displayed on screen.)

4 MR. BEZERRA: And do you recognize this as
5 your paper?

6 WITNESS ROSENFELD: Yes, I do.

7 MR. BEZERRA: Could we please go to Page 55,
8 which is Page 15 on the .pdf.

9 (Exhibit displayed on screen.)

10 MR. BEZERRA: And could we scroll down to pick
11 up -- There's an incomplete paragraph just above the
12 heading, "Implications for Juvenile Survival."

13 Do you see that sentence?

14 WITNESS ROSENFELD: Yes.

15 MR. BEZERRA: That paragraph. Excuse me.

16 In that paragraph, there's a sentence that
17 says (reading):

18 "Improvements in the scientific
19 understanding of when freshwater flow
20 modulates Longfin . . . production may
21 help to reveal the flow-related
22 mechanisms at work and the area where
23 those mechanisms function."

24 Do you see that sentence?

25 WITNESS ROSENFELD: Yes, I do.

1 MR. BEZERRA: That sentence indicates that
2 there has been no scientific determination about the
3 biological factors driving any statistical correlation
4 between Delta outflows and Longfin Abundance Indices;
5 correct?

6 WITNESS ROSENFELD: I'm sorry. Can you
7 repeat that question?

8 MR. BEZERRA: Sure. I apologize. It was kind
9 of long.

10 That sentence indicates there has been no
11 scientific determination about the biological factors
12 driving any statistical correlation between Delta
13 outflows and Longfin Abundance Indices; correct?

14 WITNESS ROSENFELD: I'm sorry. I need you to
15 repeat the first half of that --

16 MR. BEZERRA: Sure.

17 WITNESS ROSENFELD: -- the first quarter of
18 that --

19 MR. BEZERRA: Yeah.

20 WITNESS ROSENFELD: -- because that's where
21 the keywords are.

22 MR. BEZERRA: That sentence indicates there
23 has been no scientific determination about the
24 biological factors driving any statistical correlation
25 between Delta outflows and Longfin Abundance Indices;

1 correct?

2 WITNESS ROSENFELD: If the operative word is
3 "determination," meaning resolution of all the various
4 hypotheses that might support the mechanistic link,
5 then, no, there's been no scientific consensus on what
6 the mechanism is.

7 But that --

8 MR. BEZERRA: Okay. I appreciate that.

9 WITNESS ROSENFELD: Okay.

10 MR. BEZERRA: And you stated yesterday that
11 Kimmerer has spent years attempting to determine that
12 mechanism; correct?

13 WITNESS ROSENFELD: I don't want to imply
14 that Dr. Kimmerer is ineffective in his work.

15 MR. BEZERRA: No, I understand.

16 WITNESS ROSENFELD: He's been methodically
17 going through a list of mechanisms that he proposed in
18 2002, doing his best to find either support or
19 eliminate hypotheses, which is a good scientific
20 practice.

21 MR. BEZERRA: He has reached no particular
22 conclusion about any particular biological factor
23 there; correct?

24 WITNESS ROSENFELD: I wouldn't state what
25 Mr. Kimmerer's -- Dr. Kimmerer's conclusions are.

1 MR. BEZERRA: Okay.

2 WITNESS ROSENFELD: I mean, in conversation,
3 he's told me what he thinks --

4 MR. BEZERRA: Okay. Thank you very much.

5 WITNESS ROSENFELD: -- was happening, yeah.

6 MR. BEZERRA: In your testimony, when you say
7 that the correlation between winter/spring outflows and
8 relative Longfin Smelt abundance is significant, you
9 mean that's a statistically significant relationship;
10 correct?

11 WITNESS ROSENFELD: That's correct.

12 MR. BEZERRA: Okay. It -- It's possible for
13 more than one environmental factor to have a
14 statistically significant relationship with a fish
15 species abundance; correct?

16 WITNESS ROSENFELD: I'm not sure I understand
17 your question.

18 MR. BEZERRA: Sure. Okay.

19 It -- In -- In the case -- Let's go back to
20 your testimony, Exhibit NRDC-58, Page 24.

21 (Exhibit displayed on screen.)

22 MR. BEZERRA: There we go.

23 On Lines 25 through 27, you refer to a
24 (reading):

25 ". . . Significant . . . influence of

1 winter-spring . . . outflow on abundance
2 of Longfin Smelt . . ."

3 Correct?

4 WITNESS ROSENFELD: Correct.

5 MR. BEZERRA: And what you mean by
6 "significant" there is, there's a statistically
7 significant relationship between outflow there and
8 Longfin abundance; correct?

9 WITNESS ROSENFELD: Correct.

10 MR. BEZERRA: Okay. It is possible for other
11 environmental factors to also have a statistically
12 significant relationship on Longfin abundance; correct?

13 WITNESS ROSENFELD: It is possible, correct.

14 MR. BEZERRA: Okay. Do you know whether there
15 are any other environmental variables operating in the
16 Delta that also have that sort of statistical --
17 statistically significant relationship?

18 WITNESS ROSENFELD: I know that a variety of
19 papers have scanned for . . . correlations between
20 different variables and Longfin Smelt abundance.

21 Thompson, et al., in 2010 comes to mind. And
22 they found a strong effect of spring X2, which is very
23 similar to spring flow. They also found a water
24 clarity effect but then they, in their analysis, found
25 that the water clarity effect was weak overall for

1 Longfin Smelt, so significant but not having a strong
2 effect population.

3 Similarly, Nobriga and Rosenfield -- myself --
4 in our 2016 paper, scanned for the effects of water
5 clarity and didn't find -- it didn't come up as a
6 significant variable in our model.

7 But, again, Longfin Smelt are using the Delta
8 for a particular life stage and then moving out of the
9 Delta.

10 So the effects of turbidity in the Delta, you
11 have to get very spe -- you'd have to look at their
12 success in the Delta to understand the effect of
13 turbidity on that species in the Delta. It may be
14 difficult to detect.

15 MR. BEZERRA: And just for clarity: What is
16 the life stage of Longfin that is using the Delta as
17 habitat?

18 WITNESS ROSENFELD: Well, depending on
19 outflow conditions, they will move into the Delta as
20 spawning adults to deposit their eggs, so -- spawning
21 adults' eggs, and the very early larval life stages.

22 MR. BEZERRA: So Delta -- turbidity in the
23 Delta could affect Longfin spawning as well as larva;
24 correct?

25 WITNESS ROSENFELD: Those are possibilities,

1 yes.

2 MR. BEZERRA: Okay. Thank you.

3 Okay. And could we please go back to -- on
4 your 2016 paper, NRDC-36, and I'd like to Page 50,
5 which is Page 8 of the .pdf.

6 (Exhibit displayed on screen.)

7 MR. BEZERRA: Specifically, the first full
8 paragraph in the left-hand column.

9 (Exhibit displayed on screen.)

10 MR. BEZERRA: Do you see that paragraph?

11 WITNESS ROSENFELD: The one that begins with
12 "We summarized the Delta outflow"?

13 MR. BEZERRA: Correct.

14 WITNESS ROSENFELD: Yes.

15 MR. BEZERRA: And there's a sentence
16 (reading):

17 "We used PCA because sequential
18 monthly means of flow and water quality
19 variables can be closely correlated due
20 to . . . seasonal climate and high
21 year-to-year variation in precipitation."

22 Do you see that?

23 WITNESS ROSENFELD: Yes.

24 MR. BEZERRA: Okay. And one of the referenced
25 water quality variables is water transparency; correct?

1 WITNESS ROSENFELD: I'm just looking again.

2 (Examining document.)

3 WITNESS ROSENFELD: Yes.

4 MR. BEZERRA: And water transparency is
5 related to turbidity. It's the opposite of turbidity;
6 correct?

7 WITNESS ROSENFELD: They're inversely
8 related, yes.

9 MR. BEZERRA: Okay. So just in my attorney
10 brain, when turbidity declines, water transparency
11 increases, in general terms; correct?

12 WITNESS ROSENFELD: It depends on the source
13 of the turbidity but, in general, yes.

14 MR. BEZERRA: Okay. Thank you.

15 So, in the sentence I quoted about PCA,
16 you're -- you state that water transparency closely --
17 can closely correlate with flow; correct?

18 WITNESS ROSENFELD: Yes.

19 MR. BEZERRA: And what do you mean by that?

20 WITNESS ROSENFELD: I mean that water --
21 flowing water is the mechanism by which suspended
22 sediment, in particular, but other forms of suspended
23 solids are suspended in the water column.

24 So river flows would be related to turbidity
25 because rivers carry turbidity based on the amount of

1 flow and the rate of flow, as well as the landscape
2 that they're flowing through, but also tidal action and
3 wind action, all of which are meted through the water.

4 MR. BEZERRA: And PCA is a statistical
5 technique known as Principal Components Analysis;
6 correct?

7 WITNESS ROSENFELD: That's correct.

8 MR. BEZERRA: Okay. Can you explain how that
9 works?

10 WITNESS ROSENFELD: (Laughing.)

11 How long do you have?

12 MR. BEZERRA: Well, let -- let me go back.
13 That's a little broad.

14 PCA is a statistical technique to simplify
15 simplify large amounts of data; correct?

16 WITNESS ROSENFELD: PCA characterizes the
17 variance in data so it reorients the axes if you
18 plotted variables on different axes, and you can have
19 more than two, more than three axes here, so it gets
20 hard to conceptualize.

21 But it will take the cloud of data on those
22 multiple axes and orient them so that they're running
23 along the -- the first principal component will run
24 along the -- the most variation in that cloud, the
25 greatest spread.

1 The next axis will be orthogonal to that,
2 meaning perpendicular, and go through the next most
3 variable part of the data, et cetera, et cetera.

4 So it's characterizing a group of data based
5 on the greatest variability in those data.

6 MR. BEZERRA: And you used that technique in
7 this case -- I believe it states -- because it's --
8 there's a lot of covariation between flows and
9 turbidity; correct?

10 WITNESS ROSENFELD: Correct.

11 MR. BEZERRA: So you were using PCA to try to
12 tease out flows and turbidity as separate variables.

13 Is that accurate?

14 WITNESS ROSENFELD: I'm trying to understand
15 the . . .

16 Can you rephrase your question?

17 MR. BEZERRA: Yeah.

18 Actually, why don't we refer back to your
19 paper there. There's a sentence there. It states
20 (reading):

21 "This covariation makes it difficult
22 to determine the averaging periods that
23 best reflect the mechanistic linkages
24 between environmental conditions and
25 Longfin Smelt production."

1 And you're referring to covariation of flows
2 and water transparency; correct?

3 WITNESS ROSENFELD: Covariation of flows and
4 flows, so flows in one month and the next month --

5 MR. BEZERRA: Okay.

6 WITNESS ROSENFELD: -- as well as covariation
7 between flows and turbidity.

8 MR. BEZERRA: So how did you apply PCWA (sic)
9 to --

10 WITNESS ROSENFELD: PCA.

11 MR. BEZERRA: I'm sorry.

12 How did you use PCA to separate out the flow
13 variable versus the water transparency variable in this
14 analysis.

15 WITNESS ROSENFELD: Well, PCA actually
16 doesn't separate them out the variables. It merges
17 them into a single variable -- a single axis -- a new
18 variable that is characterized by the axis running
19 through the greatest -- like an X-Axis, Y-Axis --
20 running through the greatest amount of variation in the
21 data. So it actually produces a synthetic variable
22 that that is "this is the where the greatest variation
23 lies." That's the . . .

24 MR. BEZERRA: And for purposes of this paper,
25 you produced a synthetic variable for outflow and a

1 synthetic variable for water transparency; correct?

2 WITNESS ROSENFELD: Correct.

3 MR. BEZERRA: In the raw data, those flows and
4 transparency have -- are closely correlated?

5 WITNESS ROSENFELD: There -- There are
6 correlations.

7 MR. BEZERRA: Okay. But for purposes of your
8 analysis, you separated them out as synthetic
9 variables.

10 WITNESS ROSENFELD: We characterized the
11 turbidity and flows as principal components so as not
12 to choose a particular month, for instance, for flows,
13 in which flows are offered as more important than other
14 months.

15 MR. BEZERRA: Okay. Sorry to take you down
16 that rabbit hole. We'll pull back out.

17 So if we could go to Page --

18 WITNESS ROSENFELD: You have my mind thinking
19 of clouds and axes running through that.

20 MR. BEZERRA: If we could go to Page 49 of
21 this paper, which is .pdf Page 7.

22 (Exhibit displayed on screen.)

23 MR. BEZERRA: This table states the variables
24 you calculated for each year -- correct? -- as a result
25 of that PCA analysis for outflows --

1 WITNESS ROSENFELD: Correct.

2 MR. BEZERRA: -- and transparencies.

3 WITNESS ROSENFELD: That's correct.

4 MR. BEZERRA: Okay. So --

5 WITNESS ROSENFELD: And I -- I guess I should
6 clarify that. Something I said may have been misstated
7 or have been -- or may be misinterpreted.

8 The synthetic variables are water transparency
9 variables synthesized into one variable, PC1,
10 temperature variable separate from water temperature
11 synthesized into one.

12 So it's not teasing apart those variables.
13 It's keeping -- We kept those categories of variables
14 separately but produced synthetic variables within
15 those categories.

16 MR. BEZERRA: And just for clarity on this
17 table, too, that column labeled "FMWT Index," that's
18 the Fall Midwater Trawl Abundance Index; correct?

19 WITNESS ROSENFELD: That's correct.

20 MR. BEZERRA: And "Bay Age-0 Index" is from a
21 different trawl; correct? And that's --

22 WITNESS ROSENFELD: It's from -- It's
23 actually a combination of two different trawls.

24 MR. BEZERRA: Okay.

25 WITNESS ROSENFELD: Yes.

1 MR. BEZERRA: And "Bay Age-2" is similarly a
2 combination of other trawls?

3 WITNESS ROSENFELD: Correct.

4 MR. BEZERRA: And those are Abundance Indices.

5 WITNESS ROSENFELD: Correct.

6 MR. BEZERRA: Okay. So, for Delta outflow and
7 water transparency, what does the number in those
8 columns for each of those variables actually indicate?

9 WITNESS ROSENFELD: It's a unitless score
10 that's reflective of where you would be on the
11 Principal Component 1 axis. So, best to think of them
12 as relative.

13 MR. BEZERRA: And so, for outflow, that
14 synthetic variable is then what you used to do a
15 statistical analysis relative to fish Abundance
16 Indices; correct?

17 WITNESS ROSENFELD: Correct.

18 MR. BEZERRA: Okay. And, similarly, for water
19 transparency, you used the same sort of calculation.

20 WITNESS ROSENFELD: Correct.

21 MR. BEZERRA: Okay. Now, previously we -- If
22 we could go back to BKS-268, which is the Hestir paper.

23 (Exhibit displayed on screen.)

24 MR. BEZERRA: And Page 308, which is Page 5.

25 (Exhibit displayed on screen.)

1 MR. BEZERRA: In the -- In the last paragraph
2 in the left-hand column, the first two sentences
3 make -- the first sentence states (reading):

4 "Delta inflows are highly variable,
5 yet there is no significant long-term
6 discharge (sic)" -- excuse me --
7 "long-term trend in discharge from the
8 Sacramento River . . ."

9 Do you see that sentence?

10 WITNESS ROSENFELD: I do.

11 MR. BEZERRA: Do you agree with that
12 statement?

13 WITNESS ROSENFELD: I'm not sure whether
14 they're referring to where they're measuring discharge
15 and whether they're referring to an unimpaired variable
16 or an actual variable.

17 MR. BEZERRA: Okay. If we could go up to the
18 previous page in this document, Page 307 --

19 (Exhibit displayed on screen.)

20 MR. BEZERRA: -- under the heading "3.3.
21 Delta inflows and outflows."

22 Do you see the sentence, "Sacramento River
23 discharge" -- begins "Sacramento River discharge"?

24 WITNESS ROSENFELD: I'm sorry. Page 3 of 7?

25 MR. BEZERRA: Yes. The paragraph under the

1 heading "3.3. Delta inflows and outflows."

2 WITNESS ROSENFELD: Um-hmm.

3 MR. BEZERRA: And do you see the sentence,
4 "Sacramento River discharge"?

5 WITNESS ROSENFELD: (Examining document.)

6 I don't.

7 Under heading "3.3. Delta inflows and
8 outflows"?

9 MR. BEZERRA: Correct.

10 WITNESS ROSENFELD: I see.

11 Got it. Yes.

12 MR. BEZERRA: Does that assist you in
13 understanding how the authors calculated Sacramento
14 River discharge into the Delta?

15 WITNESS ROSENFELD: Yes, I see that.

16 MR. BEZERRA: Okay. Going back to the
17 previous page in that sentence.

18 (Exhibit displayed on screen.)

19 WITNESS ROSENFELD: I want to look, though,
20 also at the time period --

21 MR. BEZERRA: Okay.

22 WITNESS ROSENFELD: -- that they are
23 measuring this.

24 MR. BEZERRA: I can help you with that.

25 WITNESS ROSENFELD: Can you?

1 MR. BEZERRA: Yes.

2 So, if you see there on Page -- Well, let's go
3 up to Page 306.

4 (Exhibit displayed on screen.)

5 MR. BEZERRA: And the right-hand column.

6 WITNESS ROSENFELD: Okay. Yeah, the
7 right-hand column? Yeah.

8 MR. BEZERRA: Of the measuring stations, nine
9 were just missing a few records for the period of
10 record. This is their TSS calculation.

11 Do you understand from this that they did
12 total suspended solids they reviewed from 1975 to 2010?

13 WITNESS ROSENFELD: I do.

14 I see a graphic on the same page, the
15 Figure 2, that's referring to discharge measuring from
16 the 1950s.

17 MR. BEZERRA: Yes. Okay.

18 WITNESS ROSENFELD: So, anyway, just in
19 preparation for what I -- where I think you're going
20 with your next question, I wanted to clarify --

21 MR. BEZERRA: Sure.

22 WITNESS ROSENFELD: -- what they did in this
23 paper since I hadn't read it previously.

24 MR. BEZERRA: Okay. Then under "3.3. Delta
25 inflows and outflows" --

1 (Exhibit displayed on screen.)

2 MR. BEZERRA: -- it says (reading):

3 "We used the same procedure for
4 identifying structural changes and trend
5 analysis for Delta inflows and outflows."

6 That indicates they used 1975 to 2010 --
7 correct? -- for outflows and inflows through the Delta?

8 WITNESS ROSENFELD: I'm not sure that -- that
9 I've seen that, that time period is what they use for
10 total suspended solids.

11 But, again, I'm not sure what they're -- With
12 regard to outflows, I'm not sure what the time period
13 is that they're referring to.

14 MR. BEZERRA: Okay.

15 WITNESS ROSENFELD: And time period matters,
16 because you have -- If you include big flood years,
17 then that means one thing. If you, you know --

18 MR. BEZERRA: Sure.

19 WITNESS ROSENFELD: The time period that
20 you're analyzing matters a lot.

21 MR. BEZERRA: I understand.

22 WITNESS ROSENFELD: But if you would like to,
23 we could proceed with the -- with the assumption that
24 you're telling me, that it's 1975 through 2010.

25 MR. BEZERRA: Sure. Why don't we do that.

1 So on this -- Going back to Page 308 --

2 (Exhibit displayed on screen.)

3 MR. BEZERRA: -- and that sentence (reading):

4 "Delta inflows are highly variable,
5 yet there is no significant long-term
6 trend in discharge from the Sacramento
7 River."

8 Do you agree with that statement for the
9 1975-to-2010 period?

10 WITNESS ROSENFELD: I would have to look at
11 the data myself to . . . and really study this paper.

12 But Delta inflows are certainly highly
13 variable. And I've seen other papers over different
14 time that incorporate different time periods which
15 reach a similar conclusion about the trend in discharge
16 from the Sacramento River.

17 MR. BEZERRA: Okay. And then the next
18 sentence reads (reading):

19 "There was no significant structural
20 change in Sacramento River discharge, nor
21 was there a significant trend or
22 structural change in estimated Delta
23 outflows."

24 Do you agree with that statement for the
25 1975-to-2010 period?

1 WITNESS ROSENFELD: Again, I would have to
2 study the -- the data myself. And the years are
3 important.

4 I also don't know exactly what they mean by
5 "structural change in estimated Delta outflows."

6 But I'm noticing that there -- just in looking
7 at the sentence you referenced, that their key value,
8 their likelihood of statistical significance, is quite
9 close to significant.

10 So, again, emphasizing the effect, the
11 necessity to understand what years are being used and
12 how the -- what timeframe is being used and how this
13 was all done, which I'm not familiar with because I
14 haven't studied this paper.

15 MR. BEZERRA: Okay. Going back to your paper,
16 and Page 49.

17 (Exhibit displayed on screen.)

18 WITNESS ROSENFELD: My testimony or my paper?

19 MR. BEZERRA: No. I'm sorry. Your -- Your
20 paper --

21 WITNESS ROSENFELD: Oh.

22 MR. BEZERRA: -- NRDC-36, and that Table 2.

23 Looking at that column, in 1982, the Fall
24 Midwater Trawl Index was 62,905; correct?

25 WITNESS ROSENFELD: That's what it says, yes.

1 MR. BEZERRA: And then in the following year,
2 1983, that index drops to 11,864; correct?

3 WITNESS ROSENFELD: Correct.

4 MR. BEZERRA: And for the remainder of that --
5 the data in Table 2 through 2013, that index number
6 never reaches 62,905 again; correct?

7 WITNESS ROSENFELD: I believe that's correct,
8 yes.

9 MR. BEZERRA: Okay. And that index number
10 after 1983 never reaches 11,864 again; correct?

11 WITNESS ROSENFELD: That's correct.

12 MR. BEZERRA: Okay. Now, moving down to
13 that -- that column to 1998, which requires going to
14 the next page.

15 (Exhibit displayed on screen.)

16 MR. BEZERRA: In 1998, that number is 6,654;
17 correct?

18 WITNESS ROSENFELD: That's what it says, yes.

19 MR. BEZERRA: And by 2001, that number is 247;
20 correct?

21 WITNESS ROSENFELD: That's correct.

22 MR. BEZERRA: And after 1998, that index never
23 reaches 6,654 again; correct?

24 WITNESS ROSENFELD: That's correct.

25 MR. BEZERRA: Okay. And 1982-83 was a year in

1 which there was found to be a step decrease in Delta
2 turbidity; correct?

3 WITNESS ROSENFELD: I think you're referring
4 back to that previous paper.

5 MR. BEZERRA: Yeah. And I can go back to the
6 papers if you like.

7 WITNESS ROSENFELD: Well, I mean . . . I
8 haven't -- Again, I haven't studied that paper,
9 so . . .

10 MR. BEZERRA: But you general -- You stated
11 you're generally aware of the work that indicates there
12 have been step decreases in Delta turbidity; correct?

13 WITNESS ROSENFELD: Correct.

14 I'm questioning whether there are other papers
15 that -- other work that may have indicated a different
16 year, 1982, 1983, or later, post-1996, for instance,
17 so --

18 MR. BEZERRA: Okay. So, are you aware of work
19 that indicates that there was a step decrease in Delta
20 turbidity following the 1998 El Niño?

21 WITNESS ROSENFELD: I would need to review
22 the papers again to, again, get to the exact date --

23 MR. BEZERRA: Okay. Thank you.

24 WITNESS ROSENFELD: -- you know, and papers,
25 and their analyses.

1 MR. BEZERRA: Okay. I'd like to pull up
2 Exhibit FOR-60.

3 (Exhibit displayed on screen.)

4 MR. BEZERRA: Dr. Rosenfield, are you familiar
5 with this report?

6 WITNESS ROSENFELD: It's from awhile ago but,
7 yes, I believe I read it at the time it came out.

8 MR. BEZERRA: Okay. Could we please go to
9 Page 94, Line 4167 through Line 4170.

10 (Exhibit displayed on screen.)

11 MR. BEZERRA: Do you see the sentence
12 (reading):

13 "The most recent sediment-flushing
14 El Niño event of 1997-98 occurred just
15 before the onset of the POD and may thus
16 have contributed to the POD regime
17 shift."

18 WITNESS ROSENFELD: I see the sentence, yes.

19 MR. BEZERRA: Do you understand the term "POD"
20 to reference the "Pelagic Organism Decline."

21 WITNESS ROSENFELD: I do.

22 MR. BEZERRA: Do you agree with the statement
23 in that sentence?

24 WITNESS ROSENFELD: I believe -- I agree that
25 1997 through 1998 is just before the POD. And, again,

1 the operative word here is "may have contributed to the
2 POD regime shift."

3 So, yes, I agree.

4 MR. BEZERRA: Okay. And going back to your
5 paper, if we can go back to NRDC-36.

6 (Exhibit displayed on screen.)

7 WITNESS ROSENFELD: Can I also ask how
8 many -- how much longer?

9 MR. BEZERRA: We -- You know what, I have one
10 question here and then we can take a break.

11 And I have about 10 minutes, I think, on his
12 proposed terms and conditions.

13 CO-HEARING OFFICER DODUC: Let's go ahead and
14 do that.

15 WITNESS ROSENFELD: Go ahead.

16 MR. BEZERRA: Okay. So, again, this is your
17 paper, and it indicates that 1998 -- or following 1998,
18 the Fall Midwater Trawl Index for Longfin never
19 returned to the same level as occurred in 1998;
20 correct?

21 WITNESS ROSENFELD: That's correct.

22 MR. BEZERRA: Okay. And if you want to take a
23 break, that'll be great.

24 CO-HEARING OFFICER DODUC: Let's go ahead and
25 take a break.

1 And we will return as 11:50.

2 (Recess taken at 11:33 a.m.)

3 (Proceedings resumed at 11:48 a.m.):

4 CO-HEARING OFFICER DODUC: All right,

5 Mr. Bezerra.

6 MR. BEZERRA: If we could go to NRDC-58 and go
7 to Page 42.

8 I have -- This is my last set of questions
9 regarding my proposed terms and conditions.

10 (Exhibit displayed on screen.)

11 MR. BEZERRA: And I understand you prefer the
12 Project be rejected, and so all of these proposals if
13 it were indeed accepted.

14 WITNESS ROSENFELD: Right.

15 MR. BEZERRA: So the first proposal -- I think
16 Mr. O'Hanlon called it 2a -- about December outflows --
17 December through June outflows.

18 Do you see that on Page 42, Lines 11 through
19 12?

20 WITNESS ROSENFELD: I do.

21 MR. BEZERRA: Okay. This would apply to
22 CVP/State Water Project operations generally; correct?

23 WITNESS ROSENFELD: Correct.

24 MR. BEZERRA: Okay. And it would preclude the
25 storage of water in a CVP or SWP reservoir until this

1 condition is met; correct?

2 WITNESS ROSENFELD: I -- I think that's an
3 operational decision. I think there are other factors
4 at play that I'm not an expert on.

5 MR. BEZERRA: Okay. Going down to your
6 Proposal 2b on Lines 19 through 20 (reading):

7 "Maintain July to August outflows at
8 or above 7100 cfs."

9 This would also apply to CVP and SWP
10 operations generally; correct?

11 WITNESS ROSENFELD: Yes.

12 MR. BEZERRA: And this would require releases
13 of water from storage, if necessary, to meet these
14 outflows; correct?

15 WITNESS ROSENFELD: The word "require" is
16 not -- It's not necessarily obvious that that's true.

17 MR. BEZERRA: The Central Valley Project and
18 State Water Project would have to do whatever it is
19 they needed to do to ensure these outflows occur;
20 correct?

21 WITNESS ROSENFELD: Within certain boundaries
22 that we -- that we identified in our opening proposal,
23 yeah.

24 MR. BEZERRA: What are those boundaries?

25 WITNESS ROSENFELD: I would have to look at

1 our opening -- NRDC's Opening Statement -- NRDC et
2 al.'s Opening Statement.

3 My writing is about the biological
4 requirements. There's additional text about . . . that
5 caveat, the biological requirements.

6 MR. BEZERRA: Okay. But you personally are
7 proposing this as a term and condition on the approval
8 of California WaterFix; correct?

9 WITNESS ROSENFELD: Yes.

10 MR. BEZERRA: And it would apply to Project
11 operations generally, not just WaterFix diversions;
12 correct?

13 WITNESS ROSENFELD: Correct.

14 MR. BEZERRA: Okay. And so, if necessary to
15 meet this term and condition, the Central Valley
16 Project or the State Water Project would need to
17 release stored water from reservoirs to comply with
18 this condition; correct?

19 WITNESS ROSENFELD: If necessary, then --

20 MR. BEZERRA: Yes.

21 WITNESS ROSENFELD: If necessary, yes.

22 MR. BEZERRA: Okay. Thank you.

23 And your Condition 2c (reading):

24 "Maintain September to November
25 outflows at or above 11,400 cfs in Wet &

1 Above and 7400 cfs in other year-types."

2 That would apply to CVP and SWP operations in
3 general; correct?

4 WITNESS ROSENFELD: Yes.

5 MR. BEZERRA: And, again, if necessary, water
6 would have to be released from reservoirs to meet this
7 condition; correct?

8 WITNESS ROSENFELD: If there are no other way
9 of doing it, yes.

10 MR. BEZERRA: Yes.

11 Moving on to the next page, Page 43.

12 (Exhibit displayed on screen.)

13 MR. BEZERRA: And your proposed term and
14 Condition 4 (reading):

15 "Carryover storage: Implement the
16 revised Shasta RPA."

17 If -- Are you aware that the current
18 reasonable and prudent alternative in the current
19 Biological Opinion states a preference for releases
20 from Folsom Reservoir, if necessary, to meet the Shasta
21 storage terms?

22 WITNESS ROSENFELD: I'm not specifically
23 recalling that language.

24 MR. BEZERRA: Okay. Your proposal here,
25 Number 4, if necessary to implement this, and also

1 implement your Delta flow -- outflow proposals . . .
2 would this include a proposal to prefer releases from
3 some place other than Shasta in order to meet your
4 outflow proposals?

5 WITNESS ROSENFELD: Can you repeat the
6 question?

7 MR. BEZERRA: Sure. That wasn't clear. I
8 apologize.

9 Your Proposal 4 here, the Shasta RPA, that
10 would require certain minimum levels of storage in
11 Shasta; correct?

12 WITNESS ROSENFELD: Correct.

13 MR. BEZERRA: And that would be during May and
14 September, I believe.

15 Is that accurate?

16 WITNESS ROSENFELD: It may have been -- No.
17 There's an end-of-April storage and a -- either and end
18 of September or end of October --

19 MR. BEZERRA: Okay.

20 WITNESS ROSENFELD: -- requirement.

21 MR. BEZERRA: Some of your previous proposals
22 would mandate July through September outflows; correct?

23 WITNESS ROSENFELD: Can you define "previous
24 proposals."

25 MR. BEZERRA: Sure.

1 WITNESS ROSENFELD: Meaning from this
2 testimony?

3 MR. BEZERRA: Yes.

4 WITNESS ROSENFELD: Yes.

5 MR. BEZERRA: So your proposals 2b and 2c
6 would mandate Delta outflows in July through September
7 among other times; correct?

8 WITNESS ROSENFELD: Among other times, yes.

9 MR. BEZERRA: Okay. So if necessary to meet
10 those proposals by releasing stored water, would that
11 water need to come from other reservoirs besides Shasta
12 if it was necessary to hold water in Shasta to meet
13 your Proposed Condition 4?

14 WITNESS ROSENFELD: There's a lot of ifs in
15 that statement that assume that there's no other --
16 nothing's available to the Projects to meet both
17 storage upstream and flows downstream, such as
18 regulating diversions.

19 MR. BEZERRA: Are you aware that, currently,
20 the Bureau of Reclamation does prefer releases from
21 Folsom Reservoir to meet Delta outflow requirements in
22 certain periods of the year?

23 WITNESS ROSENFELD: That's my general
24 understanding.

25 MR. BEZERRA: Okay. Would that operation --

1 If necessary to meet your -- all of your conditions
2 together, would that operation at Folsom Reservoir need
3 to occur, if necessary, to hold back this water in
4 Shasta?

5 WITNESS ROSENFELD: It wouldn't need to
6 occur. It might require a change in the Bureau of
7 Reclamation's preferences as you stated them.

8 MR. BEZERRA: As -- Okay.

9 Okay. Your Proposal Number 5 (reading):

10 "Floodplain inundation: Achieve the
11 Yolo Bypass RPA acreage and inundation
12 criteria."

13 What are those criteria? How often would the
14 bypass need to be flooded?

15 WITNESS ROSENFELD: I don't recall the exact
16 details.

17 MR. BEZERRA: Would you recall how many acres
18 would need to be flooded?

19 WITNESS ROSENFELD: I don't recall the exact
20 acreage, either.

21 MR. BEZERRA: Or how many years it would need
22 to be flooded?

23 WITNESS ROSENFELD: I don't recall exactly
24 what they specified.

25 I could hazard a guess on all of them, but

1 that would be unwise, so I won't do it.

2 MR. BEZERRA: I appreciate that.

3 I believe you stated you have not conducted
4 any CalSim analysis of the effects of all of your
5 proposed terms and conditions together; correct?

6 WITNESS ROSENFELD: I have not conducted a
7 CalSim analyses, no.

8 MR. BEZERRA: Have you conducted any
9 hydrologic analyses of the effects on CVP and SWP
10 operations of implementing all of your proposed terms
11 and conditions?

12 WITNESS ROSENFELD: As I stated earlier,
13 we've done analysis of current RPA storage requirements
14 with -- well, current RPA storage suggestions with
15 outflow requirements that are similar to those proposed
16 here, not exactly the same.

17 So, to determine whether there's an inherent
18 conflict between storage, maintenance of wildlife
19 populations that are adjacent to the river, and Delta
20 outflow criteria, and we've found in the years that
21 we've analyzed no inherent conflict.

22 MR. BEZERRA: What sort of reductions and
23 diversions were necessary in order to reach that
24 conclusion in your analysis?

25 WITNESS ROSENFELD: We didn't analyze

1 diversions.

2 MR. BEZERRA: Okay. Have you conducted any
3 modeling to determine the effect on Lower American
4 River temperatures of implementing all of your proposed
5 terms and conditions together?

6 WITNESS ROSENFELD: No, I have not.

7 MR. BEZERRA: Are you aware that Steelhead is
8 a listed species present in the Lower American River?

9 WITNESS ROSENFELD: Yes, I am.

10 MR. BEZERRA: Are you aware that increased
11 temperatures in the Lower American River could
12 adversely impact Steelhead?

13 WITNESS ROSENFELD: Well, it depends on
14 when -- when and to what extent those temperatures
15 occur. But I think you said adverse temperatures, so
16 adverse temperatures are adverse.

17 But I'm not willing to concede that all
18 temperature increases are adverse to Steelhead.

19 MR. BEZERRA: Okay. How about -- Would you
20 consider temperature increases between June and October
21 in the Lower American River to be adverse to Steelhead?

22 WITNESS ROSENFELD: Not necessarily.

23 MR. BEZERRA: Okay. And you've conducted no
24 analysis of the effect of all of your proposed terms
25 and conditions on Lower American River temperatures;

1 correct?

2 WITNESS ROSENFELD: That's correct.

3 MR. BEZERRA: Okay. Thank you very much.

4 That completes my cross.

5 CO-HEARING OFFICER DODUC: Thank you,

6 Mr. Bezerra.

7 With that, we will take our lunch break and

8 return at 1 p.m.

9 (Recess taken at 11:58 a.m.)

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1 Tuesday, April 24, 2018 1:00 p.m.

2 PROCEEDINGS

3 ---000---

4 CO-HEARING OFFICER DODUC: It is 1 o'clock.

5 We are back in session.

6 Miss Meserve is here. I understand,
7 Miss Meserve, that you're no longer cross -- conducting
8 cross for LAND.

9 MS. MESERVE: Correct.

10 CO-HEARING OFFICER DODUC: Okay. In that
11 case, then, we will go to Mr. Herrick.

12 MR. HERRICK: Thank you.

13 John Herrick for the South Delta parties.

14 CROSS-EXAMINATION BY

15 MR. HERRICK: Dr. Rosenfield, I have a number
16 of questions. I should be done within a half an hour,
17 so we don't bother you too long.

18 WITNESS ROSENFELD: Okay.

19 MR. HERRICK: Let's start with Page 8 of your
20 testimony, which is NRDC-58.

21 If we could bring that up really fast.

22 (Exhibit displayed on screen.)

23 MR. HERRICK: Dr. Rosenfield, on Page 8,
24 Line 2, you discuss the decrease in numbers from two
25 different timeframes and note that that's a 61 percent

1 decrease; is that correct?

2 WITNESS ROSENFELD: For the referred-to
3 spring-run Chinook Salmon?

4 MR. HERRICK: Yes.

5 WITNESS ROSENFELD: Yes.

6 MR. HERRICK: Are you familiar with CVPIA, the
7 Central Valley Project Improvement Act's requirement
8 for the doubling of anadromous fish?

9 WITNESS ROSENFELD: I am.

10 MR. HERRICK: Do you know how many years it
11 was supposed to be before the doubling occurred?

12 WITNESS ROSENFELD: If memory serves, it was
13 10 years.

14 MR. HERRICK: And, to your knowledge, is there
15 any program being undertaken at this time that's going
16 to meet that deadline?

17 WITNESS ROSENFELD: We're past the 10 years,
18 so I would say no.

19 MR. HERRICK: Is there any program that seeks
20 to meet that -- that -- that doubling in the
21 foreseeable future?

22 WITNESS ROSENFELD: Well, there are programs
23 under the Central Valley Project Improvement Act and,
24 you know, other restoration programs that are at work.

25 But in terms of their likelihood of meeting

1 the target, the trend suggests that we're not making a
2 lot of progress. Anadromous fish populations are
3 declining rather than increasing over their '67 through
4 '91 average.

5 MR. HERRICK: And that was my next question.

6 So the trend is not on a trajectory towards
7 doubling the populations from that timeframe but
8 actually decreasing each year; correct?

9 WITNESS ROSENFELD: That's correct.

10 MR. HERRICK: Now, do you know of any aspect
11 of the California WaterFix that would put us on a
12 trajectory to double those anadromous fish populations?

13 WITNESS ROSENFELD: I'm unaware of any
14 element in the plan that would do that.

15 MR. HERRICK: If we could turn to Page 10 of
16 your testimony, please.

17 (Exhibit displayed on screen.)

18 MR. HERRICK: And in that first full
19 paragraph, you discuss the relationship between flows
20 and populations of juvenile Salmon; is that correct?

21 WITNESS ROSENFELD: That's correct.

22 MR. HERRICK: Now, in your -- In your expert
23 opinion, is survivability through the Delta one of the
24 key factors in both protecting and enhancing the
25 anadromous fish populations?

1 WITNESS ROSENFELD: It is, yes.

2 MR. HERRICK: And are you familiar with the
3 State Board's development of flow criteria that
4 recommends river flows in order to protect fishery
5 populations?

6 WITNESS ROSENFELD: Are you referring to the
7 Phase 1 and Phase 2 of the Water Quality Control Plan
8 update?

9 MR. HERRICK: No. I'm referring -- If we
10 could pull up SWRCB-25, please. Just the cover page is
11 fine.

12 Excuse me for being unclear on that.

13 (Exhibit displayed on screen.)

14 CO-HEARING OFFICER DODUC: This is the 2010
15 Flow Criteria Report.

16 MR. HERRICK: Yes. Isn't that 25? That's --

17 CO-HEARING OFFICER DODUC: Yes.

18 No, I'm just clarifying for Dr. Rosenfield.

19 MR. HERRICK: Sorry.

20 WITNESS ROSENFELD: So, can you repeat the
21 question?

22 MR. HERRICK: Yes.

23 Are you aware of the State Board's development
24 of flow criteria document dated 2010?

25 WITNESS ROSENFELD: Yes, I am.

1 MR. HERRICK: And what is the gist of that
2 document?

3 WITNESS ROSENFELD: That, given the current
4 geometry of the Delta freshwater flows are inadequate
5 to maintain public trust, fishery resources and other
6 aquatic resources.

7 MR. HERRICK: And do the flows recommended in
8 that report seek to improve the populations by
9 increasing the flows over current numbers?

10 WITNESS ROSENFELD: Yes, in general.

11 MR. HERRICK: Okay.

12 WITNESS ROSENFELD: That was the
13 recommendation.

14 MR. HERRICK: Are you familiar with SWRCB-103?
15 If we could pull that up real quickly. Again,
16 just the cover page would be fine.

17 And this is the Scientific Basis Report that
18 the SWRCB produced in support of the recommended
19 changes in the Bay-Delta program.

20 (Exhibit displayed on screen.)

21 MR. HERRICK: Are you familiar --

22 WITNESS ROSENFELD: Yes, I'm familiar with
23 that report.

24 MR. HERRICK: -- with this document?

25 Pardon me?

1 WITNESS ROSENFELD: Yes, I'm familiar it.

2 MR. HERRICK: And do you understand that
3 that's an analysis of the science behind proposed
4 changes to fishery flow conditions and other things?

5 WITNESS ROSENFELD: Yes.

6 MR. HERRICK: And do you have any position on
7 whether or not you agree with those recommend -- that
8 analysis of the science behind those conclusions?

9 WITNESS ROSENFELD: We thought the analysis
10 was --

11 CO-HEARING OFFICER DODUC: Hold on.

12 Mr. Bezerra.

13 MR. BEZERRA: Objection: It's a vague and
14 ambiguous question.

15 This document is multiple hundreds of pages
16 long with multiple recommendations.

17 The question wants to go to specific
18 recommendations. That's fine. But to ask whether the
19 witness agrees or not with the report is vague and
20 ambiguous.

21 MR. HERRICK: I'll rephrase it. I thought I
22 limited it to fishery flows and I said "other stuff"
23 but --

24 CO-HEARING OFFICER DODUC: So let's do that,
25 Mr. Herrick.

1 MR. HERRICK: Let's go to Page 5-32, please.

2 (Exhibit displayed on screen.)

3 MR. HERRICK: I'd better put on my glasses
4 here. Sorry.

5 Dr. Rosenfield, do you see the section marked
6 5.3.4?

7 WITNESS ROSENFELD: Yes.

8 MR. HERRICK: And it talks -- It's headed --
9 the heading is "Conclusion and Proposed Requirements."

10 WITNESS ROSENFELD: Yes.

11 MR. HERRICK: And in the middle of the first
12 paragraph, do you see the sentence that says (reading):

13 "Populations of several
14 estuarian-dependent species of fish and
15 shrimp very positively with flow as do
16 other measures of the health of the
17 estuarian ecosystem."

18 WITNESS ROSENFELD: Yes, I see that.

19 MR. HERRICK: Do you agree with that
20 statement?

21 WITNESS ROSENFELD: Yes.

22 MR. HERRICK: In your opinion, does this
23 document provide an analysis of the science behind that
24 conclusion?

25 WITNESS ROSENFELD: Yes, it does.

1 MR. HERRICK: And do you agree with that
2 analysis?

3 WITNESS ROSENFELD: In general, I agree that
4 the analysis was thorough and reflected the
5 best-available science.

6 There were details in our comments that
7 suggested additional science or different ways of
8 viewing the data or interpreting the data.

9 But, in general, I thought it was a fairly
10 accurate and comprehensive report.

11 MR. HERRICK: Would you agree that there are
12 varying opinions with regard to the degree to which
13 flow is beneficial to fish populations in the Delta?

14 WITNESS ROSENFELD: Yes. I would agree that
15 they're varying --

16 MR. BEZERRA: Objection: The term "fish
17 populations in the Delta."

18 I went through in great detail various
19 abundance indices. There's different indices for
20 different trawl. There's different indices for
21 different fishes.

22 And, again, saying -- lumping them all
23 together makes it a vague and ambiguous question.

24 CO-HEARING OFFICER DODUC: I believe that was
25 a general question.

1 Wasn't it, Mr. Herrick?

2 MR. HERRICK: It was.

3 CO-HEARING OFFICER DODUC: Overruled.

4 MR. HERRICK: Dr. Rosenfield, do you
5 understand that the -- Excuse me.

6 Let me -- Let me go down to the next
7 paragraph.

8 And if you could just read that paragraph real
9 quick, I'm going to ask you about the last sentence in
10 that.

11 WITNESS ROSENFELD: The last paragraph on the
12 page?

13 MR. HERRICK: The last paragraph on the
14 page -- excuse me -- yes.

15 WITNESS ROSENFELD: (Examining document.)

16 Okay. I've read it.

17 MR. HERRICK: And the last sentence talks
18 about (reading):

19 "It" --

20 Being the narrative flow objective.

21 -- "requires maintenance of Delta

22 outflows sufficient to support and

23 maintain the natural production of viable

24 native fish and aquatic species

25 populations rearing in or migrating

1 through the Bay-Delta."

2 Do you see that?

3 WITNESS ROSENFELD: Yes.

4 MR. HERRICK: And do you agree with that
5 statement?

6 WITNESS ROSENFELD: The requirements . . .

7 MR. HERRICK: That the narrative objective to
8 protect those -- those beneficial uses requires that
9 maintenance of flow.

10 WITNESS ROSENFELD: Well, that's what --
11 that's what this says. It may say it elsewhere in this
12 document as well.

13 MR. HERRICK: Okay. That's right.

14 WITNESS ROSENFELD: Yeah.

15 MR. HERRICK: Now, when we were discussing the
16 SWRCB's development of flow criteria document, is it
17 your understanding that document was produced solely
18 looking at the protection of fish and not taking into
19 consideration other beneficial uses or users?

20 WITNESS ROSENFELD: It wasn't solely for the
21 benefit of fish. There were wildlife considerations as
22 well.

23 MR. HERRICK: Excuse me.

24 WITNESS ROSENFELD: But I think you're asking
25 about other human users or uses of water. It was not

1 in the context of those uses.

2 MR. HERRICK: And the flows recommended in
3 that report, were they expected to double the
4 populations of anadromous fish that go through the
5 Delta, or was it just to maintain a viable population,
6 or something else?

7 WITNESS ROSENFELD: I don't recall exactly
8 what standard that report used for Salmonids, whether
9 it was targeted towards doubling or -- or simply
10 viability.

11 I know that our testimony to that report was
12 regarding . . . was intended to get us on the path
13 towards doubling anadromous fish and viability of other
14 native fish species.

15 MR. HERRICK: Whether there's just the viable
16 populations or doubling, would you agree that if you
17 don't then implement those flows as recommended, some
18 other actions might be necessary to provide that
19 viability or doubling?

20 WITNESS ROSENFELD: Yes, if -- if there are
21 other actions that are available.

22 MR. HERRICK: And those actions would need to
23 be identified and the -- and perhaps quantify their
24 effects on the subject fish populations; correct?

25 WITNESS ROSENFELD: Yes.

1 MR. HERRICK: Turning to Page 11 of your
2 testimony, NRDC-58. Sorry.

3 (Exhibit displayed on screen.)

4 MR. HERRICK: And just below the middle of the
5 page, starting on Line, say, 15, do you see your
6 testimony that describes NOAA Fisheries survival
7 percentages -- Well, do you see your sentence there
8 from Lines 15 through --

9 WITNESS ROSENFELD: Yes, I do.

10 MR. HERRICK: Okay. Now, those numbers, the
11 57 percent for winter-run, and 54 percent for
12 spring-run, and 59 percent for Steelhead, those are
13 numbers that the NOAA fishery agency has determined are
14 the necessary survival rates to maintain a viable
15 population of each of those species?

16 WITNESS ROSENFELD: Right.

17 MR. HERRICK: So is that --

18 WITNESS ROSENFELD: Regarding upstream --
19 Regarding upstream survival as well.

20 MR. HERRICK: Upstream survival.

21 So, those numbers are necessary in order to
22 maintain the populations of those species; is that
23 correct?

24 WITNESS ROSENFELD: Well . . . these . . .

25 That's what I was trying to get out in the

1 amendment to my last answer.

2 If you didn't achieve these survival rates
3 through the Delta, you would have to achieve higher
4 survival rates upstream, or in the ocean, but we don't
5 have mechanisms really to affect ocean survival of the
6 wild population other than a fishery.

7 So it's -- These numbers are based on
8 assumptions about improvements to upstream survival as
9 well.

10 MR. HERRICK: But do you under -- But do you
11 understand that these numbers were developed through
12 some sort of statistical analysis of what level of
13 survivability is necessary so the population as a whole
14 does not decline?

15 WITNESS ROSENFELD: Yes. It was a numerical
16 quantitative analysis, yes.

17 MR. HERRICK: And, so, ignoring the other
18 factors, if the WaterFix contributes to a decrease in
19 these survivability numbers, then, in your opinion,
20 would the populations be viable, or would they decrease
21 further?

22 WITNESS ROSENFELD: They would decrease
23 further unless additional improvements were made
24 upstream that mitigated or more than mitigated for the
25 declines that you're talking about here.

1 Basically, in order for the populations to
2 achieve viability, their survival on freshwater needs
3 to be such that they can -- that the population can
4 grow and can grow at a rate that's typical of Chinook
5 Salmon or Steelhead.

6 And so NMFS parsed out where they -- how much
7 survival improvement they expected in various areas.
8 If you didn't achieve it in one area, then you'd have
9 to overachieve it in a different area.

10 So that's what those numbers are based on.

11 And if they're -- If you didn't achieve -- If
12 you didn't achieve these numbers -- To your question,
13 if you didn't achieve these numbers in the Delta and
14 you did nothing but what you're doing or what -- or
15 even achieving NMFS' upstream objectives, then the
16 population would decline.

17 MR. HERRICK: And turning to Page 12 of your
18 testimony --

19 (Exhibit displayed on screen.)

20 MR. HERRICK: -- starting on Line -- I guess
21 that's 20-ish -- you discuss reduction in smolt
22 survival under the Delta Passage Model; correct?

23 WITNESS ROSENFELD: (Examining document.)

24 That's correct.

25 MR. HERRICK: And it continues on through that

1 model with different -- different decreases for
2 different species, I believe; is that correct?

3 WITNESS ROSENFELD: Yeah. On additional
4 pages, yes.

5 MR. HERRICK: Now, without testing your
6 statistical knowledge, your earlier testimony talks
7 about the percentages of survivability necessary to
8 maintain viable populations.

9 Is your testimony on Page 12 showing that a
10 de -- the WaterFix Project is likely to have a decrease
11 in survivability of those populations?

12 WITNESS ROSENFELD: That's correct.
13 Through-Delta survival is projected to decrease under
14 Cal WaterFix operations.

15 MR. HERRICK: Now, are the -- The Salmon
16 populations and Smelt populations referenced in your
17 testimony, are they already on a declining -- are they
18 already declining populations.

19 WITNESS ROSENFELD: Yes. The status quo for
20 most of the native fish species of concern is decline,
21 not maintenance of a particular level but continuing
22 decline.

23 MR. HERRICK: And so if the California
24 WaterFix results in a -- even if it's a 1 percent
25 decline in survivability of one of those species,

1 doesn't that exacerbate the trajectory towards an
2 unviable population and/or extinction?

3 WITNESS ROSENFELD: Yes. That's my
4 testimony.

5 MR. HERRICK: And that is your concern there,
6 and that's why you referenced that; correct?

7 WITNESS ROSENFELD: That's correct.

8 MR. HERRICK: Now, the -- the -- Excuse me.

9 On Page 21, in the middle of the page, you
10 reference the Shasta Reservoir RPA.

11 Do you see that?

12 (Exhibit displayed on screen.)

13 MR. HERRICK: Right there on Line 13, excuse
14 me.

15 WITNESS ROSENFELD: Yes.

16 MR. HERRICK: And I believe Mr. O'Brien went
17 into that. I won't go into that except to ask you:

18 The Shasta Reservoir -- Excuse me. Did I say
19 "reserve"?

20 The Shasta Reservoir RPA, that's an attempt to
21 create a better long-term ability to meet coldwater
22 needs below the dam; is that correct?

23 WITNESS ROSENFELD: That's correct.

24 MR. HERRICK: And it's your testimony that's
25 not in operations yet; correct?

1 WITNESS ROSENFELD: That's my understanding.

2 MR. HERRICK: Okay. So this is important --
3 This -- This was important in your testimony, given
4 that the recent drought did not meet coldwater
5 requirements all the time, and the fish populations
6 were adversely affected; correct?

7 WITNESS ROSENFELD: That is a -- is a very
8 good example of the inadequacy of the existing
9 temperature standard and, in particular, for
10 winter-run, the Bureau of Reclamation's ability to
11 maintain the existing standard, which is inadequate.

12 So the drought really made the situation for
13 winter-run Chinook Salmon and other species more dire,
14 and also illustrated the failings of our current system
15 to provide for them.

16 MR. HERRICK: Now, the drought was, you know,
17 a couple -- a couple-plus years ago.

18 To your knowledge, does -- does the Bureau of
19 Reclamation have any new operations that would improve
20 meeting that coldwater standard in dry times now?

21 WITNESS ROSENFELD: I'm not sure what
22 their -- I believe -- Well, I'm not sure of what their
23 water management -- Temperature Management Plan is for
24 2018.

25 But, no. In general, I believe that they're

1 still operating under the existing RPA in regular
2 consultation with National Marines Fishery Service and
3 others.

4 MR. HERRICK: To your knowledge, does the
5 California WaterFix proposal, or Project, include any
6 mechanism or operations that would provide a greater
7 reliability for coldwater pools for downstream
8 protection?

9 WITNESS ROSENFELD: No. I believe in many
10 cases it decreases the reliability of coldwater pool.

11 MR. HERRICK: Dr. Rosenfield, in your -- In
12 your opinion, is it in the public interest to approve a
13 Project that does not improve the ability to protect
14 fisheries downstream of Shasta with regard to coldwater
15 requirements?

16 WITNESS ROSENFELD: In my opinion, that
17 doesn't serve the public's interest in maintaining
18 commercial fisheries or endangered species or -- or the
19 species that are affected.

20 MR. HERRICK: If we could turn to -- If we
21 could pull up SWRCB-105, please.

22 I believe that's the Fish and Wildlife Service
23 Biological Opinion for the WaterFix.

24 (Exhibit displayed on screen.)

25 MR. HERRICK: Dr. Rosenfield, are you familiar

1 with this document?

2 WITNESS ROSENFELD: Can we . . . Can I read
3 the first sentence or two?

4 MR. HERRICK: Yes.

5 WITNESS ROSENFELD: All these documents look
6 the same after awhile.

7 (Examining document.)

8 MR. HERRICK: This is the cover letter to
9 the . . .

10 WITNESS ROSENFELD: Cal WaterFix Biological
11 Opinion.

12 MR. HERRICK: Yes. Of Fish and Wildlife
13 Service.

14 WITNESS ROSENFELD: Yeah. I'm familiar with
15 it.

16 MR. HERRICK: On Page 1 of that document,
17 which we're looking at the very bottom paragraph, it
18 talks about (reading):

19 "The following activities analyzed
20 as a standard consultation are:"

21 Do you see that?

22 WITNESS ROSENFELD: I see it.

23 MR. HERRICK: And it goes through construction
24 of the tunnels, expansion/modifications of Clifton
25 Court Forebay, and other things.

1 Do you see those?

2 WITNESS ROSENFELD: Yes, I see that list.

3 MR. HERRICK: And is it your understanding
4 that those listed things -- and I guess associated
5 activities -- are covered by the State Permit; is that
6 correct?

7 WITNESS ROSENFELD: Can you define "covered"?

8 MR. HERRICK: Operations under those allow
9 take if they're done in conformity with the opinion
10 itself.

11 WITNESS ROSENFELD: That's my understanding.

12 MR. HERRICK: And then if we turn to the next
13 page, the following page on this document.

14 (Exhibit displayed on screen.)

15 MR. HERRICK: And the first full paragraph
16 talks about activities addressed programmatically.

17 Do you see that in the second line of the
18 first full paragraph?

19 WITNESS ROSENFELD: Where it says, "The
20 following activities require future Federal approvals"?

21 MR. HERRICK: Yes.

22 WITNESS ROSENFELD: Yes.

23 MR. HERRICK: And then it says (reading):

24 ". . . Therefore, addressed
25 programmatically . . ."

1 WITNESS ROSENFELD: Right.

2 MR. HERRICK: And then a list of a number of
3 things.

4 The fourth one is the operation of new and
5 existing CVP and SWP water facilities.

6 Do you see that?

7 WITNESS ROSENFELD: I do.

8 MR. HERRICK: And, then, if you go to the
9 third of the last line of that paragraph, do you see
10 where it says (reading):

11 "No incidental Take Statement is
12 included for activities addressed
13 programmatically because those subsequent
14 consultations will address incidental
15 take associated with those activities."

16 Do you see that?

17 WITNESS ROSENFELD: I see that.

18 MR. HERRICK: Do you understand that to mean
19 that the operations of the California WaterFix are not
20 covered under the Fish and Wildlife Service's
21 Biological Opinion at this time?

22 WITNESS ROSENFELD: That is my understanding.

23 MR. HERRICK: Okay. And so the Fish and
24 Wildlife Service Biological Opinion anticipates further
25 analysis, you know, I think testing, and adaptive

1 management decisions, and all sorts of other things
2 before they will grant a -- include the operations in
3 their Take Permit.

4 WITNESS ROSENFELD: That is my understanding.

5 MR. HERRICK: Or future Take Permit.

6 So, as we sit here now -- which is the popular
7 statement here by attorneys -- we don't know whether or
8 not the Fish and Wildlife Service would issue a Take
9 Permit for the operations of the California WaterFix;
10 do we?

11 WITNESS ROSENFELD: They seem to be holding
12 that possibility open.

13 MR. HERRICK: And the Fish and Wildlife
14 Service may approve it. We don't know. But if they
15 did, it might be based upon RPAs or other conditions in
16 order to try to mitigate any perceived impacts to
17 covered species; correct?

18 WITNESS ROSENFELD: That's correct.

19 MR. HERRICK: Now, is there any problem with
20 waiting for future analysis and conclusions in
21 approving a Project at this time, in your opinion?

22 WITNESS ROSENFELD: It does seem odd to build
23 a project that is so expensive and far-reaching and
24 ambitious without also approving its operations once
25 it's constructed.

1 What I -- When this initially came out and I
2 read it, it was -- you know, it was really hard to
3 understand the approval of a -- of the construction of
4 a project without anticipating the use of that project,
5 because that's -- I think they call that sunk costs,
6 which has a pun in it as well.

7 Once this Project is built, it's hard to
8 imagine that it we don't be used. So the fact that
9 they're not -- the Fish and Wildlife Service was not
10 granting a Permit for the use of the facility did seem
11 odd to me.

12 MR. HERRICK: So, in your opinion, then, if
13 somebody moves forward on a multibillion-dollar project
14 pending an analysis and a Take Permit approval, that
15 means they're assuming they will get the Take Permit;
16 doesn't it?

17 WITNESS ROSENFELD: I'm not -- I can't
18 comment on what's going through other people's mind,
19 but it does seem to be quite a risk.

20 MR. HERRICK: Now, the -- the -- I'll call
21 them Mitigation Measures, but I'm referring to any
22 conditions in a future Take Permit by Fish and Wildlife
23 Service that would allow take of the California
24 WaterFix.

25 But there's no guarantee that any of those

1 conditions will be effective in mitigating any impacts
2 to the fishery population; are there?

3 WITNESS ROSENFELD: Are you repeat the
4 question?

5 MR. HERRICK: Is there any guarantee that
6 conditions in a future Take Permit would actually
7 mitigate for any adverse impacts caused by the
8 California WaterFix?

9 WITNESS ROSENFELD: There's -- There's no
10 guarantee of that. And, in fact, in my review of other
11 documents pertaining to the Cal WaterFix, that's a
12 major concern with what's already identified as
13 Mitigation Measures that are very uncertain.

14 They're not spelled out. Their reliance on
15 future discussions, future tests, and there's an
16 assumption that they all work, but that -- I don't
17 share that assumption with regard to many of the
18 mitigations.

19 So -- So, using that as an example, I would
20 say that the Fish and Wildlife Service's Mitigation
21 Measures for operations in the future, their RPAs or
22 conditions, you know, there's -- there's a similar
23 concern that they may not be implemented, they may not
24 be implemented fully, they may not be effective if
25 implemented, we may not know for a long time whether

1 they're working or not.

2 So all of those concerns are live with regard
3 to the Fish and Wildlife Service opinion.

4 MR. HERRICK: Now, if those -- if any
5 Mitigation Measures in a to-be-granted Take Permit
6 don't work, then they would probably try some other
7 measures.

8 Wouldn't that be rational on their part, Fish
9 and Wildlife Service?

10 WITNESS ROSENFELD: It's a -- It's a very
11 bureaucratic progress that's under a political
12 microscope.

13 So what will happen in the future, I wouldn't
14 know. But, generally, there's a lot of talk in this
15 ecosystem and in the documents for Cal WaterFix about
16 adaptive management, and that's -- The principal of
17 adaptive management is that you try something, you
18 study whether it works and how it works, and then you
19 adjust.

20 So, in that context, that -- everybody --
21 management agencies and others seem to adopt quite
22 readily an adaptive management. That would be the
23 course of action as you described.

24 MR. HERRICK: And I'm just trying to, you
25 know, maybe a shorter answer.

1 You know, if the initial set of criteria for
2 mitigation don't work, you would assume the Fish and
3 Wildlife Service would try some other ones or seek to
4 find other ones; correct?

5 WITNESS ROSENFELD: I would hope that that
6 would be the case --

7 MR. HERRICK: Yes.

8 WITNESS ROSENFELD: -- yes.

9 MR. HERRICK: And so let's say this Petition
10 is granted within the next year or two, and then it
11 takes 12 to 14 years of construction, and then we
12 determine what the Mitigation Measures are and they may
13 not work or not.

14 What happens to the -- let's just say the
15 winter-run population during 14 to 20 years from now
16 until we figure out how to protect fish?

17 WITNESS ROSENFELD: Right. Well, the
18 winter-run Chinook Salmon population, as well as other
19 imperiled populations and not officially listed
20 populations in this watershed, are at a declining
21 trend. Their numbers are at or near historic lows.
22 They're in great danger of becoming extinct or being
23 extirpated from this estuary.

24 So, not -- So, the time for action to protect
25 those species is -- is now, and if not several years

1 past.

2 And delaying action for another decade or more
3 in the series of events you described would not be in
4 the best interests of protecting those fish. It might
5 result in them disappearing while we wait for the
6 mitigations to work or not work and more studies to
7 determine whether they work.

8 MR. HERRICK: So absent something else
9 happening now or soon, determining the mitigation or
10 limitations on the California WaterFix 14, 15, 16 years
11 from now is -- is a -- a prescription for a decreased
12 population of many of these species of concern; isn't
13 it?

14 WITNESS ROSENFELD: Given the current trends
15 and the -- the environmental conditions that are
16 believed or understood to drive those trends, and the
17 operations that drive those environmental conditions,
18 yes.

19 MR. HERRICK: So, in light of that, in your
20 opinion, is it in the public interest to -- to approve
21 the WaterFix Project under the proposals, terms, and
22 timeframes we're talking about here?

23 WITNESS ROSENFELD: As currently proposed, it
24 does not seem to be in the interest of protecting fish
25 species or water quality in the Delta, given the

1 effects that are already identified in the analyses as
2 being negative compared to a No-Action Alternative,
3 some of which I've covered in my testimony.

4 MR. HERRICK: And without -- I'll finish up
5 here quickly.

6 But the NMFS Biological Opinion, which is
7 SWRCB-10 -- excuse me -- SWRCB-106, although it -- it
8 may cover the operations of the Project, it, too,
9 anticipates further analysis, adaptive management, and
10 efforts to make sure that any adverse impacts on the
11 listed -- or the species are mitigated; correct?

12 WITNESS ROSENFELD: Can you repeat that? I'm
13 sorry.

14 MR. HERRICK: Sorry.

15 The NMFS Biological Opinion allows for
16 adaptive management in the future and later decisions
17 to make sure that any adverse impacts of the California
18 WaterFix would be mitigated to some extent; correct?

19 WITNESS ROSENFELD: Yes, that's true.

20 MR. HERRICK: And -- But that -- that leaves
21 us in the same position we are with the Fish and
22 Wildlife Service Biological Opinion in that, from now
23 until the time the Project begins operating, the
24 fishery species will -- will continue to decline -- the
25 fishery species of concern will continue to decline;

1 correct?

2 WITNESS ROSENFELD: That's correct.

3 And with regard to the NMFS Biological Opinion
4 and the questions you've been asking, the Mitigation
5 Measures that I see in there are ill-defined in terms
6 of exactly how they'll work, when they'll be
7 implemented, how we'll switch from one regime to
8 another regime, whether the monitoring that underpins
9 those shifting operations will be accurate to the level
10 that's expected, which seems unlikely in many cases.

11 So, even the mitigations that are identified
12 in there seem speculative, at best, to me.

13 MR. HERRICK: Thank you.

14 Let me just have one or two last questions. I
15 think I'm at my time here.

16 You were asked some questions about a draft
17 memo, which is NRDC Number 63.

18 Could we pull that up, please, real quick?

19 (Exhibit displayed on screen.)

20 MR. HERRICK: NRDC-63.

21 And as you can see, this is that ICF memo.

22 Do you recall the questions you were asked
23 about that?

24 WITNESS ROSENFELD: I do.

25 MR. HERRICK: And it deals with turbidity

1 impact -- or impacts to turbidity pursuant to the
2 California WaterFix?

3 WITNESS ROSENFELD: That's correct.

4 MR. HERRICK: And is it correct to say that
5 most of this memorandum talks about how one would
6 calculate the amount of turbidity or sediment needed to
7 mitigate for the Project?

8 WITNESS ROSENFELD: That's my recollection of
9 the document.

10 MR. HERRICK: And, to your knowledge, has
11 anyone figured out how one would mitigate a decrease in
12 sediment entering the Delta?

13 WITNESS ROSENFELD: No, I'm not aware of.

14 MR. HERRICK: Was that one of your concerns in
15 the discussion of turbidity, is that although it may be
16 recognized as an impact, and people may plan on doing
17 something about it, nobody knows how to do it yet;
18 correct?

19 WITNESS ROSENFELD: Right.

20 There's -- As I remember in one of the
21 documents -- and I hesitate to identify which document
22 it was -- but there was a lot of discussion about we
23 will develop a plan, or Cal WaterFix Proponents,
24 Operators, will develop a plan for reintroducing
25 sediments into the Delta and maintaining Delta sediment

1 loads, and it was repeated over and over again that
2 that was of concern.

3 I believe it was an official Fish and Wildlife
4 Service Biological Opinion, although it may have been
5 in the CESA findings as well.

6 And so that -- You know, they don't identify a
7 plan, but that doesn't mean that there will be a plan,
8 or the plan will be effective, or that it will be
9 developed in time, or that we'll know that it's working
10 or not working before the impacts of decreasing
11 turbidity have their effect.

12 MR. HERRICK: It would be no small thing to
13 figure out a way to increase turbidity in some channel
14 of the South Delta or anywhere in the Delta; would it?

15 WITNESS ROSENFELD: Well, people come up with
16 surprising solutions.

17 MR. HERRICK: That's a very optimistic answer.

18 WITNESS ROSENFELD: No. I mean, I don't want
19 to prejudge how easy or hard it would be.

20 It's, obviously, of concern to a lot of
21 researchers and Managers, the turbidity levels, and
22 there's not a lot of -- I'm not aware of a lot of
23 viable alternatives to -- to maintain or increase those
24 turbidity levels, although I'm -- I remain confident
25 that we can find such alternatives. But, again, they

1 haven't been identified yet, so . . .

2 So, when a document says we expect that
3 turbidity levels will be maintained and we'll develop a
4 plan for that, you have to take that with a grain of
5 salt, especially when you're dealing with species that
6 are very close to extinction, you know.

7 You need a plan, and you need a plan to
8 actually work, and you need to be sure that it's going
9 to work, before you make a major change to the habitat
10 of imperiled species.

11 MR. HERRICK: We could easily lose the Delta
12 Smelt population before such a plan is developed;
13 couldn't we?

14 WITNESS ROSENFELD: Yes. Given the current
15 status of Delta Smelt, winter-run Chinook Salmon, it
16 would be all too easy for those populations to
17 disappear quite quickly.

18 MR. HERRICK: Thank you.

19 Madam Chair Hearing Officers, I don't -- I'm
20 not sure how to proceed.

21 I don't think the two Biological Opinions or
22 the Scientific Basis Report are in evidence yet.
23 They're listed, but they -- there's nothing next to
24 them on the web page that says some order let them in
25 or something.

1 If -- If it would be appropriate, I would
2 offer them into evidence if no one else has or --

3 CO-HEARING OFFICER DODUC: I believe PCFFA
4 moved at least the Scientific Basis document. I'm not
5 sure about the other.

6 MR. HERRICK: The two Biological Opinions?

7 MR. DEERINGER: We can check on the Biological
8 Opinions, but I believe PCFFA-168 is the 2017
9 Scientific Basis Report.

10 MR. HERRICK: Okay. Absent any change, then,
11 is it okay for me to offer SWRCB-105 and '6, which are
12 the two Biological Opinions?

13 CO-HEARING OFFICER DODUC: When we ask for you
14 to submit cross exhibits -- cross-examination exhibits,
15 you may do so.

16 MR. HERRICK: Thank you. Thank you very much.

17 That's all I have. Thank you.

18 CO-HEARING OFFICER DODUC: All right. Thank
19 you, Mr. Herrick. As always, another excellent cross.

20 Dr. Rosenfield, Mr. Jackson is up next with
21 another 30 minutes of cross.

22 Would you like to take a short break?

23 WITNESS ROSENFELD: Sure, a short break.

24 CO-HEARING OFFICER DODUC: Why don't we take a
25 short five-minute break while Mr. Jackson comes up.

1 Actually I'll give you even more.

2 We'll resume at 1:45.

3 WITNESS ROSENFELD: Okay. Thank you.

4 (Recess taken at 1:37 p.m.)

5 (Proceedings resumed at 1:45 p.m.):

6 CO-HEARING OFFICER DODUC: All right. We are
7 back in session.

8 And, Mr. Herrick, in our ruling of April 23rd,
9 we did move into exhibits Petitioner's case in --
10 Part 2 case in chief exhibits. We did move into the
11 record Petitioner's Part 2 case in chief exhibits,
12 which includes SWRCB-105 and 106, which are the BiOps.

13 We are checking on the scientific basis
14 document to see whether my recollection is correct, and
15 we will confirm that. If not, you may move that as
16 part of your cross-examination exhibits when the time
17 is appropriate.

18 MR. HERRICK: Thank you very much.

19 CO-HEARING OFFICER DODUC: And apparently we
20 started a new tradition, Mr. Herrick. A reward of
21 fruit and other good food for an efficient, effective
22 cross-examination.

23 I now have red bell peppers up.

24 All right.

25 CO-HEARING OFFICER MARCUS: See if you can

1 earn that, Mr. Jackson.

2 CO-HEARING OFFICER DODUC: And also doughnuts,
3 Mr. Jackson.

4 Mr. Jackson, your cross is up with food as
5 bribes along the way.

6 MR. JACKSON: Thank you very much. I'll go as
7 fast as I can go.

8 CO-HEARING OFFICER DODUC: Fast but, more
9 importantly, get what you need to get out of it.

10 MR. JACKSON: Thank you.

11 CROSS-EXAMINATION BY

12 MR. JACKSON: Dr. Rosenfield, I'm going to ask
13 you a few questions that are general questions to
14 start, and then we'll move on to more specific
15 questions.

16 Would you describe the importance of the
17 San Francisco Bay and the Sacramento-San Joaquin Delta
18 in terms of fishery species in California.

19 WITNESS ROSENFELD: Well, the Bay and -- Is
20 this on? Yeah.

21 The Bay and the Delta are the rearing grounds
22 and/or migratory thoroughfares through which several
23 anadromous fish and non-anadromous fish, that they use
24 the estuary for rearing grounds, the non-anadromous
25 ones.

1 And there are several species of those fish
2 that are also caught in commercial fisheries off the
3 coast and are recreational species.

4 So, for instance, Chinook Salmon are
5 commercially fished and recreationally fished as well;
6 White Sturgeon; there's a recreational fishery for
7 Starry Flounder supports -- partially supports a
8 commercial fishery, used to support it a lot more when
9 there more Starry Flounder.

10 So, those are examples of the importance of
11 the Bay and Delta and San Francisco Estuary as a whole
12 in -- in terms of their effects on fisheries resources.

13 MR. JACKSON: When you speak of the
14 San Francisco Estuary as a whole, what are you
15 including?

16 WITNESS ROSENFELD: Well, it -- Obviously,
17 different people use the term differently.

18 I mean the -- the area including the Delta,
19 the area of tidal influence downstream to the area
20 where freshwater flows -- where freshwater stops
21 modifying either the salinity or other water quality
22 characteristics such as turbidity.

23 So, when I talk about it, I'm talking about
24 the Delta, the embayments of San Francisco Bay, the
25 various embayments that are part of San Francisco Bay

1 out to the nearshore ocean.

2 MR. JACKSON: And what is the importance of
3 the watershed area of both the Delta -- to the Delta
4 and the Bay.

5 WITNESS ROSENFELD: Well, the watershed area
6 is where the freshwater inputs come from to the Delta
7 and the estuary. And the estuary itself is defined in
8 large part by the interaction of fresh water with salt
9 water, the salt water coming from the ocean following
10 regular tidal cycles and storm cycles, something that's
11 beyond our control.

12 The watershed, we have some control over how
13 much water makes it from the watershed into the estuary
14 so we have -- we have some control over the dynamics of
15 the estuary in that sense.

16 MR. JACKSON: Is it fair to say that the Bay
17 and Delta are in ecological crisis at the present
18 moment?

19 WITNESS ROSENFELD: Can you define "crisis."

20 MR. JACKSON: Are there conditions that, if
21 not resolved soon, could result in the loss of
22 important species in the Delta?

23 WITNESS ROSENFELD: Certainly, that's true.

24 MR. JACKSON: Is that true also in the Bay?

25 WITNESS ROSENFELD: Well, some of the species

1 are the same species, so, you know, the species don't
2 necessarily -- they're not looking at it from a Google
3 Maps/Google Earth perspective, so, the difference
4 between the Delta and the Bay is not necessarily
5 apparent to them, although it may be because of the
6 other environmental characteristics.

7 So, yes, I'm talking about species in the
8 Delta and in the Bay that live in either area or
9 migrate through both areas. They are -- Using your
10 definition of "crisis," they are in crisis.

11 MR. JACKSON: Does the crisis include problems
12 with both water flow and water quality?

13 WITNESS ROSENFELD: It -- The water flow is
14 a -- is a driver of water quality, is among the drivers
15 of water quality. And there are water quality concerns
16 that are at least partially related to flow into the
17 est -- into the Delta and estuary.

18 MR. JACKSON: Are there water quality problems
19 that are . . .

20 Are there any water quality problems that are
21 not in some way related to flow?

22 WITNESS ROSENFELD: You're -- Are you
23 speaking about in the Delta and the Bay?

24 MR. JACKSON: Yes.

25 CO-HEARING OFFICER DODUC: Mr. Bezerra.

1 MR. BEZERRA: Objection: Vague and ambiguous
2 as to "in some way." I don't know what that means.
3 What relationship are we talking about between flow and
4 water quality variables?

5 MR. JACKSON: If --

6 CO-HEARING OFFICER DODUC: Mr. Jackson.

7 MR. JACKSON: If Dr. Rosenfield can answer the
8 question, then it's fine. If he can't, I'll amend the
9 question. I --

10 CO-HEARING OFFICER DODUC: Dr. Rosenfield?

11 WITNESS ROSENFELD: I was going to say that
12 my understanding of people who -- from people who do
13 this kind of work is that water temperature is
14 generally in equilibrium by the time water from the
15 river reaches the Delta. So changing flow levels
16 upstream would not necessarily affect temperature --
17 water temperatures in the Delta or downstream.

18 But in terms of pollutants, toxins,
19 undesirable organisms, things that are affected by
20 water quality, there are many of those water quality
21 concerns that are affected by the amount of freshwater
22 entering the estuary.

23 MR. JACKSON: In general, is . . .

24 Does more flow help immunity rate problems
25 like salinity, dissolved oxygen, and exotic species?

1 CO-HEARING OFFICER DODUC: Mr. Bezerra.

2 MR. BEZERRA: Objection: Compound; also vague
3 and ambiguous as to what flows, when, where, how.

4 MR. JACKSON: Again, if Dr. Rosenfield can
5 answer the question . . .

6 CO-HEARING OFFICER DODUC: I think a little
7 bit more specificity would be helpful, Mr. Jackson.

8 MR. JACKSON: All right. Just picking a
9 parameter of water quality like dissolved oxygen, does
10 more -- does more flow in general help with dissolved
11 oxygen problems?

12 WITNESS ROSENFELD: There are places where
13 increasing the flow of water would ameliorate dissolved
14 oxygen problems such as in the San Joaquin ship channel
15 and certainly rivers upstream on the San Joaquin side.
16 So it can have that effect.

17 The -- In the Delta, it depends on where you
18 are in the Delta, what kind of flows you're talking
19 about, from what source, et cetera.

20 MR. JACKSON: Does -- Does flow assist in
21 establishing conditions -- appropriate salinity
22 conditions for certain species?

23 WITNESS ROSENFELD: Freshwater flow is . . .

24 CO-HEARING OFFICER DODUC: Mr. Bezerra.

25 MR. BEZERRA: Again, vague and ambiguous.

1 But what species are we talking about? What
2 flows? What seasons? What --

3 CO-HEARING OFFICER DODUC: Let's hear what
4 Dr. Rosenfield has to say.

5 WITNESS ROSENFIELD: Can you repeat the
6 question?

7 MR. JACKSON: Yes.

8 In general, does -- does higher flow help
9 ameliorate salinity problems? Does it . . .

10 In terms -- Are there certain species that
11 need brackish water, for instance, in order to survive?

12 WITNESS ROSENFIELD: There are certain species
13 that, through all or part of their life cycle, do
14 better in brackish water, yes.

15 MR. JACKSON: In terms of exotic species, does
16 more flow generally favor native species over exotic
17 species in the San Francisco Bay-Delta?

18 WITNESS ROSENFIELD: The research that I've
19 seen, and some that I've conducted with my staff, shows
20 that increased freshwater flows in the winter/spring
21 months in particular is correlated with declines in
22 certain non-native species.

23 MR. JACKSON: And could you name some of
24 those?

25 WITNESS ROSENFIELD: Inland Silverside, and I

1 believe some of the Centrarchid Bass species.

2 MR. JACKSON: And these species are predators
3 of the native Salmonids and pelagic fish?

4 WITNESS ROSENFELD: They are fish predators,
5 yes.

6 MR. JACKSON: Does . . . Does the existing
7 set of problems in the -- in the Bay-Delta partially --
8 Is it partially caused by lack of inflow into the Delta
9 in some years?

10 CO-HEARING OFFICER DODUC: Mr. Bezerra.

11 MR. BEZERRA: Objection: Vague and ambiguous.
12 What are the existing set of problems in the
13 Delta?

14 What flow are we talking about relative to
15 them?

16 MR. JACKSON: We went through the question of,
17 is there an ecological crisis in the Delta. He
18 answered that there was.

19 I can go through everything in the Board's
20 fact sheets that indicate the individual problems.

21 CO-HEARING OFFICER DODUC: Mr. Rosenfield, to
22 what extent are you able to answer that question?

23 WITNESS ROSENFELD: I think I'd prefer some
24 more specificity.

25 CO-HEARING OFFICER DODUC: All right.

1 MR. JACKSON: All right. In regard to
2 Salmonid passage on the Sacramento River, are there --
3 are there time periods in which more inflow would make
4 it more likely that they survive the passage into the
5 sea?

6 WITNESS ROSENFELD: Are you talking about
7 adult passage or juvenile?

8 MR. JACKSON: Juvenile.

9 WITNESS ROSENFELD: Juvenile.

10 Yes, increased freshwater flows are, in many
11 places, correlated with better survival of the fish.

12 At certain levels, the flows also inundate --
13 increases the flow levels in certain areas, inundate
14 additional habitat that's believed to be beneficial to
15 migrating Salmon, which prepares them -- if they
16 utilize the habitat prepares them -- better prepares
17 them for survival in the -- in the ocean when they get
18 there, because they grow better in habitat.

19 So, flow does have an effect on the survival
20 and productivity of Chinook Salmon in the system we
21 have now for sure.

22 MR. JACKSON: Does flow have -- additional
23 flow have an effect on the pelagic fish?

24 WITNESS ROSENFELD: Yes, it does.

25 Increases in flow levels in the winter and

1 spring months, different months for different species,
2 et cetera, has a -- Flows Are positively correlated
3 with population indices for a variety of species that
4 otherwise have very little to do with each other
5 ecologically, or not very similar.

6 So it's having an effect across a range of
7 species, probably through different mechanisms for
8 those different species.

9 MR. JACKSON: Does the existing science point
10 to what the mechanisms are that are improved by
11 additional flow?

12 CO-HEARING OFFICER DODUC: Mr. Bezerra.

13 MR. BEZERRA: Objection: Vague and ambiguous
14 as to "existing science."

15 Are we talking specific papers, specific
16 species even?

17 CO-HEARING OFFICER DODUC: Ms. Ansley.

18 MS. ANSLEY: I would join in that objection.

19 My -- And my problem with these questions that
20 go to multiple species or just saying the words,
21 sometimes additional flow, and not giving us a
22 magnitude.

23 Later, the record could be pointed to to
24 support things that -- that these general statements
25 might not necessarily have been about.

1 So, I think that these objections to vague and
2 ambiguous are important because Dr. Rosenfield's
3 testimony is very specific.

4 He does point to specific scientific studies,
5 but as we see from the testimony, that different
6 species have different effects, and different flow
7 levels in certain species can have different effects.

8 So what I'm worried about here, is, I know
9 we're trying to move through this, but I'm worried
10 about the clarity of the record later and what his
11 statements can be used to support.

12 CO-HEARING OFFICER DODUC: All right.

13 MR. JACKSON: The purpose of the questions is
14 that, sitting here through the last 150 days or so --

15 CO-HEARING OFFICER DODUC: Has it been that
16 many?

17 MR. JACKSON: Well, Part 1 as well.

18 But is that we're losing sight of the Delta as
19 an ecological hole, and we're arguing over scientific
20 papers individually, and whether or not they're
21 consistent, and there's hundreds of them.

22 I'm trying to get back to the ecology of the
23 largest estuary on the West Coast of the Americas.

24 CO-HEARING OFFICER DODUC: All right. We will
25 note Mr. Jackson's question for that purpose.

1 WITNESS ROSENFELD: Does that mean I respond?

2 CO-HEARING OFFICER DODUC: To the extent that
3 you're able to. Or if you need additional details,
4 then ask for them.

5 WITNESS ROSENFELD: If Mr. Jackson can repeat
6 the question, I'll try and add the -- some level of
7 specificity per the objections that were raised.

8 MR. JACKSON: I hate to do this, but could you
9 read back my question.

10 (Record read.)

11 WITNESS ROSENFELD: So, for certain species,
12 the -- the -- there is good science that indicates
13 particular mechanisms that are beneficial to certain
14 fish species, thinking specifically, as an example,
15 Sacramento Splittail benefit from inundated
16 floodplains. So that's a mechanism by which flow at a
17 certain level provides habitat for them to spawn and
18 rear in.

19 The mechanisms for other species are . . .

20 For -- For species like Starry Flounder, for
21 instance, the leading hypothesis there would have to do
22 with gravitational circulation currents that are
23 established when flows reach a certain level. The
24 strength of those flows causes a counter current on the
25 bottom that would move bottom-dwelling fish into the

1 Bay, probably the same mechanism for Crangon Shrimp,
2 the delay.

3 And my answer is, you know, have those things
4 been researched and other alternative hypotheses been
5 eliminated? Not to my knowledge. But I'm also not
6 really aware of alternative hypotheses for those two
7 species in that mechanism. Not to say that there
8 isn't.

9 For other species of interest to the mech --
10 there are a wide variety of hypothesized mechanisms and
11 there is efforts under -- underway to get what at those
12 mechanisms are.

13 My paper with Matt Nobriga at Fish and
14 Wildlife Service was designed to take a next step to
15 understand the mechanisms related to the Longfin Smelt
16 relationship with the Longfin Abundance Indices,
17 relationships with outflow, try and narrow that down to
18 a time period in the life cycle where flow appears to
19 be having an effect versus time periods where flow does
20 not seem to be having an effect.

21 Once you know the time period in the life
22 cycle, you can begin to hone in on mechanisms.

23 So -- So, the answer is that science is -- You
24 know, the current state of science is moving towards an
25 improved understanding of mechanisms for those species

1 where we don't understand the mechanisms. In other
2 cases, we do understand the mechanisms quite well.

3 But, you know, there are a lot of things in
4 the world that we don't understand the mechanisms for,
5 including gravity. And understanding the mechanisms is
6 not really required to form an opinion about how to
7 protect fish species, given the evidence that you have.

8 And so my professional opinion in my
9 statements, in my testimony, are based on mechanisms
10 where we understand the mechanisms and strong
11 statistical correlations backed by ecological
12 understanding of the mechanisms that might be related
13 to the -- to the driving force of flow.

14 MR. JACKSON: Did you testify, Dr. Rosenfield,
15 in the 2010 Public Trust hearings before the Board?

16 WITNESS ROSENFELD: It's a long time ago now,
17 but, yes, I believe I did.

18 MR. JACKSON: Did you review the findings of
19 the Board in that hearing?

20 WITNESS ROSENFELD: I did.

21 MR. JACKSON: Do you agree with the findings
22 of the Board in that hearing?

23 WITNESS ROSENFELD: I was . . . very
24 impressed with the overall assimilation of the evidence
25 that the Board received and its interpretation of all

1 of the evidence it received from multiple parties
2 regarding the effects -- well, regarding the declines
3 of native fish species, the precarious nature of
4 their -- of their existence, water quality parameters,
5 et cetera.

6 And on the effects of freshwater flows, how
7 declines in freshwater flows would exacerbate the
8 precarious state of those species, or water quality
9 conditions, and increases in flows would tend to
10 protect the species that they were describing there.

11 So, in general, I was impressed with the
12 report. I'm sure there were details of it that I'm not
13 recalling right now where I would disagree. That sort
14 of comes along with being a scientist and reading other
15 people's science.

16 But, in general, I agreed with the finding
17 that current levels of freshwater flow are inadequate
18 to protect the public trust resources that were the
19 subject of that hearing.

20 MR. JACKSON: Did you also review the Cal Fish
21 and Wildlife report on basically what the fish needed?

22 WITNESS ROSENFELD: Are you referring to the
23 submission of Cal Fish and Wildlife -- which was
24 Department of Fish & Game at the time -- to the
25 legislature --

1 MR. JACKSON: Yes.

2 WITNESS ROSENFELD: Yes, I reviewed that
3 Biological Objectives Report.

4 MR. JACKSON: Does the biological -- Did you
5 agree with the Biological Objectives Report?

6 CO-HEARING OFFICER DODUC: Mr. Bezerra.

7 MR. BEZERRA: Objection: Vague and ambiguous.

8 Again, we've got a large document with many
9 statements in it, and the question is asking for the
10 witness' agreement as to all of them, apparently.

11 I believe Miss Des Jardins submitted this as
12 an exhibit. We could probably pull that up and
13 Mr. Jackson could ask specific questions about it if he
14 likes.

15 CO-HEARING OFFICER DODUC: I understand
16 Mr. Jackson is trying to pursue more general lines of
17 questioning.

18 Mr. Jackson, was there a particular area in
19 that report, particular issue, that you wish
20 Dr. Rosenfield to opine on?

21 MR. JACKSON: Yes, there is, and it's about
22 two questions away.

23 CO-HEARING OFFICER DODUC: Okay.

24 MR. JACKSON: If --

25 WITNESS ROSENFELD: Can you repeat the

1 question?

2 MR. JACKSON: -- to go forward.

3 I'll restate the current question.

4 The current question is: Did you also find
5 the Cal Fish & Game, at that time, report to the State
6 Legislature in regard to fishery species and their
7 needs to be . . . correct?

8 WITNESS ROSENFELD: Well, I found that the
9 conclusion -- which I'll paraphrase -- that -- that the
10 levels of -- current levels of freshwater flow were
11 insufficient to protect public trust fisheries in the
12 Delta and watershed as they are currently configured.

13 I found that to be correct.

14 I remember certain analyses or recommendations
15 in there that I did not feel went far enough, would not
16 be protective enough of the species.

17 So -- But, in general, their presentation and
18 analysis was good and, you know, another -- another
19 perspective on the problems that we face.

20 So, I mean, on a professional level, I
21 appreciated the input and agreed with a lot of what was
22 said, but there are details that I did not think were
23 protective enough.

24 MR. JACKSON: The -- In -- In the last eight
25 years since that particular hearing, have you . . .

1 read scientific information that would cause you to
2 believe that those two documents are no longer relevant
3 to the problems in the Delta?

4 WITNESS ROSENFELD: To the contrary. I think
5 the research that's come out -- I mean, there were
6 hearings, as I recall -- they were in 2012, which were
7 a followup to the 2010 report on this very question:
8 Was there new information -- I'm paraphrasing. Was
9 there new information that would modify it in the
10 findings of the 2010 report?

11 And even at that time, within the span of two
12 years, the publications that came out seemed to
13 reinforce the finding -- the general findings of the
14 State Water Board's report and the general findings of
15 the Department of Fish and Game's report regarding the
16 negative effects of decreasing or -- or levels of
17 freshwater flow that were too low as a result of human
18 consumptive uses of that water over storage of the
19 water.

20 Since 2012, the evidence continues to
21 mount . . . more strongly, indicating the need for --
22 to improve freshwater flows as part of other fixes to
23 the ecosystem. There are certainly physical habitat
24 things that need to be fixed as well.

25 But the evidence seems to clearly indicate

1 that any solution to protecting the public trust
2 fisheries, that are not currently being protected that
3 well, will involve improvements to freshwater flow in
4 some seasons in -- in various locations throughout the
5 watershed.

6 CO-HEARING OFFICER DODUC: Mr. Bezerra.

7 MR. BEZERRA: I'm going to object to that last
8 answer as hearsay.

9 Mr. Rosenfield apparently was restating what
10 he understands many scientific papers' statements to
11 have been. It's all hearsay.

12 CO-HEARING OFFICER DODUC: We'll note that.

13 WITNESS ROSENFELD: I can restate it as my
14 opinion of the papers that I've read.

15 CO-HEARING OFFICER DODUC: I would think you
16 would have the same objection.

17 MR. BEZERRA: Correct.

18 WITNESS ROSENFELD: Okay.

19 CO-HEARING OFFICER DODUC: We'll just note the
20 objection, Dr. Rosenfield.

21 WITNESS ROSENFELD: Okay.

22 MR. JACKSON: In both of those reports in
23 2010, the . . .

24 There was a recommendation that 75 percent of
25 unimpaired flow on the Sacramento River -- I believe it

1 was December to May, but it may have been January to
2 June -- would improve estuarian qualities.

3 Do you -- You do agree with that number, the
4 75 percent?

5 WITNESS ROSENFELD: Can you repeat the
6 question?

7 MR. JACKSON: In that particular -- In those
8 two particular reports to the legislature after the
9 2010 hearing, the recommendation of the State Water
10 Resources Control Board, supported by Cal Fish & Game,
11 was 75 percent of unimpaired flow during the
12 winter/spring months.

13 Is that your memory?

14 MR. BEZERRA: Ob --

15 CO-HEARING OFFICER DODUC: Mr. Bezerra.

16 MR. BEZERRA: Objection: Vague and ambiguous;
17 and compound.

18 We're talking about two different reports, one
19 by this Board, one by the Department, and I believe
20 Mr. Jackson stated at the beginning he could not
21 remember what averaging period we were using for the
22 flows.

23 This is easily resolvable by pulling up the
24 report and referring to the specific finding if we want
25 to ask questions about it.

1 CO-HEARING OFFICER DODUC: Mr. Jackson.

2 MR. JACKSON: Yeah. I don't think I need to
3 pull up the report. I'm asking whether or not, NRDC --

4 CO-HEARING OFFICER DODUC: In general.
5 Whether or not in general Dr. Rosenfield agrees with
6 the findings?

7 MR. JACKSON: Agrees with the finding.

8 CO-HEARING OFFICER DODUC: In terms of the
9 flows --

10 WITNESS ROSENFELD: Right.

11 CO-HEARING OFFICER DODUC: -- from those two
12 reports.

13 WITNESS ROSENFELD: My recollection is that
14 the State Water Board had a 75 percent of unimpaired
15 flow recommendation from the Sacramento River during
16 the winter/spring months.

17 I don't recall at this moment whether the Cal
18 Fish & Game also expressed it in terms of a percentage
19 of unimpaired.

20 But, focusing on the State Water Board's
21 recommendation, which I do remember, yes, that -- their
22 finding tracked very well our recommendations for flow
23 on the Sacramento River as well as Cal Fish & Game's
24 recommendations for flow, and other parties.

25 So they rolled up those recommendations into a

1 percentage of unimpaired that was covering the -- Our
2 recommendations on the river systems were not initially
3 expressed in terms of percentage of unimpaired flows.
4 They were expressed in terms of functional flow effects
5 and what flows were necessary to produce those effects.

6 And Board staff, as I understand it, ruled
7 those into a percentage of the unimpaired, which I
8 thought was an improvement on the flow recommendations
9 that we had made initially.

10 MR. JACKSON: In regard to outflow, is
11 there . . .

12 Is there any advantage biologically for fish
13 to increasing outflow on the San Joaquin part of the
14 system?

15 CO-HEARING OFFICER DODUC: Miss Ansley.

16 MS. ANSLEY: I'm going to lodge the same
17 objection as before: This is vague and ambiguous.

18 I mean, a biological effect for fish is just
19 too vague and ambiguous to -- to -- to answer
20 meaningfully since he's already testified that there
21 are fish that indeed like brackish environments, fish
22 that like freshwater environments.

23 His testimony is specific to the species that
24 he references with information. So I believe that the
25 question should be posed in a way that can provide a

1 meaningful answer as to a particular species even.

2 (Timer rings.)

3 CO-HEARING OFFICER DODUC: In general,
4 Dr. Rosenfield, would you agree that increasing flows
5 on the --

6 I guess -- Were you focusing on the
7 San Joaquin, Mr. Jackson?

8 MR. JACKSON: Yes, I was.

9 CO-HEARING OFFICER DODUC: -- would be
10 beneficial to various fish species?

11 WITNESS ROSENFELD: Yes, that's correct,
12 particularly in the winter/spring months, that would be
13 a benefit.

14 MR. JACKSON: And why would it be a benefit?

15 CO-HEARING OFFICER DODUC: And that would be
16 your -- Was it -- Did you need more time or is that
17 your last question, Mr. Jackson?

18 MR. JACKSON: I can make that my last
19 question.

20 CO-HEARING OFFICER DODUC: Let's make it your
21 last question.

22 MR. JACKSON: Oh, with --

23 CO-HEARING OFFICER DODUC: Second to last.

24 MR. JACKSON: -- a subheading.

25 CO-HEARING OFFICER DODUC: All right.

1 MR. JACKSON: I've got a Question 1 and an A
2 on it.

3 CO-HEARING OFFICER DODUC: Okay.

4 WITNESS ROSENFELD: Can you repeat
5 Question 1?

6 MR. JACKSON: Yes.

7 Would there be a benefit to fish and wildlife
8 in the Delta to increase flows on the San Joaquin
9 River?

10 CO-HEARING OFFICER DODUC: And he answered
11 that already, so your followup question?

12 MR. JACKSON: My followup question is:

13 Would it be advantageous to release water from
14 Friant Dam to contribute to flow on the San Joaquin
15 River?

16 CO-HEARING OFFICER DODUC: As a Fishery
17 Biologist, do you have an opinion on that,
18 Dr. Rosenfield?

19 WITNESS ROSENFELD: Yeah. That's an
20 operational question.

21 I mean, in the area downstream of Friant Dam
22 before it reaches the Merced River, that work is being
23 done to specify what flows are necessary to support the
24 reintroduction of Salmonids, among others, to that
25 stretch of river. Below that, we need to have other

1 river inputs.

2 And so, you know, the question would be
3 advantageous to what water users, which is not a
4 question that I would answer.

5 MR. JACKSON: Actually, the question was:
6 Would it be advantageous to fish below Friant?

7 WITNESS ROSENFELD: To fish below Friant?

8 MR. JACKSON: Yes.

9 WITNESS ROSENFELD: And are you talking about
10 additional flows in addition to what's being discussed
11 in the San Joaquin River Restoration Program?

12 MR. JACKSON: Yeah. I'm not talking about the
13 San Joaquin River Restoration Program.

14 WITNESS ROSENFELD: So I'm not sure I
15 understand your question.

16 MR. JACKSON: I'm talking about releasing
17 water for fish from Friant Reservoir sufficient to keep
18 them in good condition.

19 WITNESS ROSENFELD: But you're talking
20 downstream of Friant --

21 MR. JACKSON: Right.

22 WITNESS ROSENFELD: -- but upstream of
23 Merced?

24 MR. JACKSON: Yes.

25 CO-HEARING OFFICER DODUC: Dr. Rosenfield, I

1 would repeat your earlier response that you're not an
2 expert on operational matters.

3 And in your opinion, I believe, as long as
4 there is increased flow of sufficiency to benefit
5 fishery resources, that would be your interest.

6 WITNESS ROSENFELD: That -- Correct.

7 The -- The flows downstream of Friant to
8 maintain fish -- downstream of Friant, per se, is the
9 subject of a whole another process that I am aware of
10 but rarely participate in directly as an expert.

11 So I do not care to comment on what additional
12 flows are necessary in addition to what's being worked
13 out in that process.

14 MR. JACKSON: Thank you, sir.

15 WITNESS ROSENFELD: Thank you.

16 MR. JACKSON: No further questions.

17 CO-HEARING OFFICER DODUC: Thank you,
18 Mr. Jackson.

19 Dr. Rosenfield, Miss Meserve is next with
20 about 10 to 15 minutes of cross-examination.

21 Are you okay to proceed?

22 WITNESS ROSENFELD: (Nodding head.)

23 CO-HEARING OFFICER DODUC: All right. And
24 unless Miss Morris -- Miss Sheehan, will you be
25 conducting across on behalf of Miss Morris?

1 MS. SHEEHAN: (Nodding head.)

2 CO-HEARING OFFICER DODUC: Then we will take a
3 break after Miss Meserve is done.

4 MR. OBEGI: I'd like to lodge an objection to
5 the substitute cross-examination.

6 The ruling yesterday was that if Miss Morris
7 was not here, she would lose the right to
8 cross-examine. And having a substituting attorney
9 cross-examine him out of order is prejudicial to our
10 interest.

11 CO-HEARING OFFICER DODUC: Mr. Obegi, my
12 understanding yesterday, while Miss Morris was making
13 her request, was that she said she might have to send
14 in a substitute.

15 MR. OBEGI: It would have been -- That was not
16 how she represented it to me at the time. And if that
17 was the case, they should have gone in order, and --
18 but we've lodged our objection.

19 CO-HEARING OFFICER DODUC: You've lodged your
20 objection.

21 But that was my understanding of her request
22 which we approved yesterday.

23 All right. Miss Meserve.

24 MS. MESERVE: Thank you.

25 Good afternoon. Osha Meserve for Friends of

1 Stone Lakes National Wildlife Refuge.

2 I just have a few questions about the bases
3 for his conclusion regarding the survival rates of
4 Salmon, and a couple of questions about bypass flows,
5 and the fish screens.

6 And I believe Mr. Herrick asked most of the
7 questions I had on sediment.

8 CO-HEARING OFFICER DODUC: Yes. The
9 outstanding cross of Mr. Herrick.

10 (Laughter.)

11 MS. MESERVE: Yes. It's always a good time to
12 embarrass Mr. Herrick.

13 So, if -- I did have an exhibit on the thumb
14 drive. If Mr. Baker could please put that up. I've
15 marked it as FSL-52.

16 (Exhibit displayed on screen.)

17 MS. MESERVE: And this is a study which I
18 believe you're familiar with, Dr. Rosenfield, by
19 Klimley?

20 WITNESS ROSENFELD: Yes. This is the paper
21 that I was referencing in my testimony that I provided
22 the wrong literature citation for that I corrected this
23 morning.

24 MS. MESERVE: And so you reviewed this report
25 in preparing your testimony; is that correct?

1 WITNESS ROSENFELD: I do.

2 MS. MESERVE: And thinking about -- or you can
3 refer to your conclusion -- about the significantly
4 lower survival rate for -- with lower flows, was this
5 report part of the basis for that conclusion?

6 WITNESS ROSENFELD: For the lower survival of
7 Salmon in the Sacramento River under lower-flow
8 conditions versus high-flow conditions, yes.

9 MS. MESERVE: If we could please scroll to
10 Page 10 of this report.

11 (Exhibit displayed on screen.)

12 MS. MESERVE: Is this graphic here regarding
13 survival rates of tagged fish, was that one of the
14 things you were referring to?

15 WITNESS ROSENFELD: I believe I was more
16 relying on the statement in the text.

17 MS. MESERVE: Do these -- And, again, if you
18 need more time to take a look.

19 But do these graphs tend to show that, when
20 the flows were higher, the survival rates were also
21 higher?

22 WITNESS ROSENFELD: I'm inferring from the
23 graphic.

24 MS. MESERVE: I do have a paper version if
25 that would help.

1 WITNESS ROSENFELD: That might help.

2 Thanks.

3 (Examining document.)

4 WITNESS ROSENFELD: I'd have to review the
5 paper again to get the textual context of -- of this
6 graphic.

7 It's not immediately transparent to me what
8 the Y-Axis is in these graphs, the frequency, whether
9 that's a relative percentage, in which case this graph
10 would be showing differences in timing among years.

11 MS. MESERVE: Is there any other part of this
12 report that you, sitting here today, would believe your
13 statement on Page 10 was based on that you'd like to
14 point out right now?

15 WITNESS ROSENFELD: Give me a minute to look
16 through.

17 (Examining document.)

18 WITNESS ROSENFELD: Yeah. It's on -- The
19 passage that was -- sticks in my mind as I sit here,
20 is, from the first column, first paragraph of Page 12
21 of the document.

22 (Exhibit displayed on screen.)

23 WITNESS ROSENFELD: Let's see. Where is it?

24 It's about in the middle of that first
25 paragraph. It says (reading):

1 "A total of 12 (8 percent) of the
2 150 tagged smolts released at the two
3 sites were detected at the Sacramento
4 node. During the El Niño conditions of
5 spring 2016, 54 (27 percent) of 200
6 tagged smolts were detected at the
7 Sacramento nodes. These smolts not only
8 exhibited higher migratory success but
9 also moved downstream faster than the
10 smolts during spring 2015. This higher
11 survival and faster movement coincided
12 with the higher flows in the Sacramento
13 River during 2016."

14 MS. MESERVE: And, so, in general, that
15 statement along with the rest of this report supports
16 your conclusion on Page 10?

17 WITNESS ROSENFELD: Let me go to Page 10.

18 MS. MESERVE: And that's on Line 21 of
19 Page 10.

20 WITNESS ROSENFELD: (Examining document.)

21 MS. MESERVE: Feel free to correct me if I'm
22 not right.

23 WITNESS ROSENFELD: Yeah. So this is one
24 example of a study using newer-technology acoustically
25 tagged fish is probably more accurate than previous --

1 or more informative, I should say, than previous
2 technologies. This is one example.

3 I believe I've cited other examples of where
4 that technology documented higher success of migrating
5 Chinook Salmon under higher-flow conditions than under
6 lower-flow conditions, so this is one example of that.

7 MS. MESERVE: And now moving to the specifics
8 of the proposed North Delta diversions which also
9 impact flows.

10 Thinking about the -- your knowledge of fish
11 species in the Delta, there are numerous fish species
12 that spend all or part of their life history in the
13 Delta; is that correct?

14 WITNESS ROSENFELD: Yes, that's correct.

15 MS. MESERVE: And those include both listed
16 fish as well as unlisted fish; is that correct?

17 WITNESS ROSENFELD: Listed under the
18 Endangered Species Act or non-listed, yes.

19 MS. MESERVE: Or under the State Endangered
20 Species Act?

21 WITNESS ROSENFELD: Either, yes.

22 MS. MESERVE: And, in your opinion, would you
23 characterize all of these fish, whether listed or not,
24 as public trust resources?

25 WITNESS ROSENFELD: I'm not an attorney, so I

1 hesitate to tread into the ground of what counts as
2 public trust resource or not.

3 But I understand that the public trust covers
4 fisheries in particular, so, to the extent that there
5 are fisheries for the fishes, yes.

6 And to the extent that those fish, even if
7 there aren't fisheries, support other public trust
8 resources like terrestrial species or other fishes or
9 marine mammals, then yes.

10 MS. MESERVE: Other -- Another example, would
11 that also include, like, Native American uses of fish
12 for their ceremonies?

13 WITNESS ROSENFELD: Can you rephrase that as
14 a question.

15 MS. MESERVE: For instance, as the Pacific
16 Lamprey, I believe, is used by tribal peoples in their
17 ceremonies.

18 WITNESS ROSENFELD: Can you phrase that as a
19 full question?

20 MS. MESERVE: Would you also consider
21 important, rather than using the public trust
22 resources, the use by tribal peoples of certain fishes
23 that are present in the Delta sometimes?

24 WITNESS ROSENFELD: I consider that
25 important, yes.

1 CO-HEARING OFFICER DODUC: Miss Ansley.

2 MS. ANSLEY: Yeah. I'd like to lodge an
3 objection.

4 I've been through Dr. Rosenfield's Statement
5 of Qualifications, and I'm not sure there's been a
6 foundation laid that he has expertise in Native
7 American uses of fish species or other species in the
8 Delta.

9 MS. MESERVE: I think that would go to the
10 weight of his opinion.

11 MS. ANSLEY: Well --

12 CO-HEARING OFFICER DODUC: Dr. Rosenfield, to
13 what extent are you familiar with native cultural uses
14 of various fisheries?

15 WITNESS ROSENFELD: I read some papers on it
16 in this area, including archeological papers that study
17 mittens and document the use of fishes in the -- that
18 are currently found in the estuary by Native Americans
19 prior to --

20 CO-HEARING OFFICER DODUC: All right.
21 Overruled.

22 WITNESS ROSENFELD: -- European entry.

23 MS. MESERVE: And then thinking about the
24 presence of the various fish in the Delta, which is a
25 long list, would it be fair to say that there would

1 likely always be some of these native fish species
2 present in the Delta?

3 WITNESS ROSENFELD: Can you define "always"?

4 MS. MESERVE: Well, as background, I searched
5 in the EIR and elsewhere for a presence table that
6 would show when all these different fish were present,
7 and there actually is no single table.

8 But from studying the list, it appeared that
9 during some time of the year, all of the fish that were
10 studied, whether listed or unlisted, some were in the
11 area of the proposed diversions.

12 So I'm asking you whether you would believe
13 the same thing that I found.

14 CO-HEARING OFFICER DODUC: Miss Ansley.

15 MS. ANSLEY: I think my objection is that, in
16 the beginning, the question was the Delta, but in the
17 end with her further explanation, she was now talking
18 about the proposed diversion, which I take to mean the
19 North Delta diversion.

20 So, perhaps the question could be clarified as
21 to where fish presence is being asked.

22 MS. MESERVE: I think what I mean is in the --
23 in the vicinity of the diversions and downstream of the
24 diversions.

25 CO-HEARING OFFICER DODUC: Do you have that

1 knowledge, Dr. Rosenfield, to answer that question?

2 WITNESS ROSENFELD: Not at my fingertips for
3 every month of the year.

4 CO-HEARING OFFICER DODUC: All right.

5 MS. MESERVE: Would you think that the
6 disclosure of such information would be helpful?

7 WITNESS ROSENFELD: I would think that it
8 would be good to know when species are present, if
9 you're trying to avoid impacts to those species from a
10 point source of impact.

11 MS. MESERVE: Did you look for that same
12 information in the EIR or other Project documents?

13 WITNESS ROSENFELD: I generally relied for
14 the timing on a table similar to what you describe --
15 or a set of tables similar to what you describe, in the
16 Department of Fish & Game's 2010 Biological Objectives
17 Report submitted to the State Legislature where they
18 lay out month by month what life stage of each species
19 is present in the area.

20 It's not specific to the North Delta
21 diversion, but that's where I go to to recheck timing
22 of things if I need -- need confirmation.

23 MS. MESERVE: I shall hit you up for that page
24 number.

25 Okay. Now, is it your understanding that

1 real-time operations of the North Delta diversions
2 relate only to the listed Salmon and Smelt species?

3 WITNESS ROSENFELD: That's my understanding.

4 MS. MESERVE: And I understand that, on
5 Page 41 of your testimony, you recommended a 35,000 cfs
6 bypass flow from November 1st to June 1st, but I'm
7 going to ask you about the pulse flow protections that
8 are proposed as part of this Petition.

9 And with respect to those pulse flow
10 protections, they are only in effect October through
11 June; is that correct?

12 WITNESS ROSENFELD: Pulse flow protections.

13 MS. MESERVE: I'm sorry?

14 WITNESS ROSENFELD: You're asking about when
15 are the pulse flow protections in effect?

16 MS. MESERVE: That's correct.

17 WITNESS ROSENFELD: I'd have to review my
18 notes about the exact months.

19 MS. MESERVE: If we could please have Exhibit
20 SWRCB-107. That's the ITP that was issued for the
21 Project.

22 (Exhibit displayed on screen.)

23 And . . . I think, just due to taking a little
24 bit longer on that one question, I'd need just a couple
25 more minutes if that would be all right.

1 And we could go to Page 190 of the ITP so that
2 Dr. Rosenfield can see the time period.

3 WITNESS ROSENFELD: Well, while we're getting
4 there, I want to thank whoever's driving the screen and
5 scrolling through these documents.

6 (Exhibit displayed on screen.)

7 WITNESS ROSENFELD: They're much more
8 efficient than I was in my home research.

9 MS. MESERVE: Wouldn't it great if we all had
10 Mr. Baker all the time?

11 WITNESS ROSENFELD: Yes.

12 CO-HEARING OFFICER DODUC: Or Miss Gaylon from
13 this morning.

14 MS. MESERVE: Yes. Any of the projectionists,
15 we're all very appreciative.

16 So if you read this, Dr. Rosenfield, down
17 under real-time operations, do you see where it says
18 October through June?

19 WITNESS ROSENFELD: (Examining document.)

20 You're looking at Section 9.9.4 or -- or --

21 MS. MESERVE: Wait. I'm sorry. Down -- Down
22 lower on the screen, 5.1.

23 WITNESS ROSENFELD: I see. Okay.

24 MS. MESERVE: Just to --

25 WITNESS ROSENFELD: Controlling during

1 December through June period, yes.

2 MS. MESERVE: Right.

3 So those pulse flow protections provide more
4 than the 5,000 or 7,000 cfs bypass which was otherwise
5 applied in addition to some other requirements; right?

6 WITNESS ROSENFELD: That's my understanding.

7 MS. MESERVE: And with respect to the months
8 of July through November, when there's no pulse flow
9 protections, would you be concerned about entrainment,
10 impingement or other negative effects on other fish
11 besides the list of Salmon and Smelt?

12 WITNESS ROSENFELD: Besides the listed Salmon
13 and Smelt in the months . . .

14 Can you repeat the months?

15 MS. MESERVE: In the months of July through
16 November; in other words, the months when there's no
17 pulse flow protections.

18 WITNESS ROSENFELD: Off the top of my head,
19 I'm not sure which . . . species are in that area
20 during that time, so I'd have to review.

21 And, also, I have to review, I mean, more --
22 perhaps more importantly, which of the species that
23 would be in the area would receive any benefit from a
24 pulse flow protection.

25 But in that time period, pulse is a flow, you

1 know, unless there are bigger storms, are less common
2 than in other times of year. So if your question is
3 specific to pulse flows, that's one thing. If it's
4 bypass flows, that would be a different thing.

5 MS. MESERVE: But just going back to your
6 testimony, you didn't believe that the pulse flow
7 protections were adequate and suggested higher levels
8 of flows; correct?

9 WITNESS ROSENFELD: That's correct.

10 MS. MESERVE: And I'm just noting that there's
11 some other months that aren't covered, but it sounds
12 like you didn't look at those specific months that are
13 outside of the time period you mention on Page 41 of
14 your testimony?

15 WITNESS ROSENFELD: I didn't look at those
16 months, no.

17 MS. MESERVE: Do you think that would be
18 worthy of consideration, in your opinion, as to whether
19 there should be additional flows provided during those
20 other months for certain species?

21 WITNESS ROSENFELD: If it were brought to my
22 attention that there were certain species that --
23 particularly that are species that are very -- have
24 very depressed population levels that are present in
25 that area during those months, then, yeah, it would be

1 something I'd want to look into.

2 But, again, as I sit here, maybe I've been
3 myopically focused on the Chinook Salmon and the bypass
4 flows on the Smelt, and the bypass flows, but I don't
5 recall what other species would be in that area during
6 those months that I would be concerned about
7 entrainment and impingement.

8 MS. MESERVE: But we already discussed there
9 are several other species besides the Smelt and the
10 winter-run Salmon, the Chinook -- the winter- and
11 spring-run Chinook Salmon that do reside in the area of
12 the North Delta diversions and the Delta; correct?

13 WITNESS ROSENFELD: Yeah. One species we
14 haven't talked about is Sturgeon.

15 So your questions are making me want to go
16 look at where are the Sturgeon during those months.
17 Larval Sturgeon, in particular, could be -- and I
18 covered this in our comments on the WaterFix
19 RDEIR/SDEIS. The potential effects to Sturgeon, in
20 particular Sturgeon larvae or juveniles that are reared
21 in the Lower Sacramento River, and how they might be
22 affected by operations of the North Delta screens.

23 But I don't recall, as I sit here, which
24 months those larvae and juveniles are in that area, so
25 I would have to look.

1 CO-HEARING OFFICER DODUC: And, Miss Meserve,
2 how much further do you have?

3 MS. MESERVE: In fact, just about three more
4 questions, I think.

5 CO-HEARING OFFICER DODUC: All right.

6 MS. MESERVE: Sorry it look a little longer.

7 And then just thinking about the sweeping
8 velocities that were required in the ITP of the .20
9 feet per second, that was only designed for Salmon and
10 Smelt; isn't that correct?

11 WITNESS ROSENFELD: Those were certainly the
12 focal species. I don't recall whether the other
13 species were factored in, but it's related to research
14 by some of my colleagues about the performance of
15 Salmon and Smelt in relation to a screen and the
16 different factors of velocity.

17 So, yes, that was the focus.

18 MS. MESERVE: And would you think that it
19 would be important to look at whether different
20 sweeping velocities would be needed for other fish in
21 the vicinity of the North Delta diversions?

22 WITNESS ROSENFELD: Well, for instance, you
23 know, fish whose life history involves eggs that are
24 floating downstream, free-floating in the -- in the
25 water column, they could be impacted by the screens.

1 They wouldn't be effectively screened by the
2 screens as legs or as larvae, so sweeping velocities
3 might be important in protecting them.

4 Or they might have no effect at all. It's
5 hard to know.

6 MS. MESERVE: And did you see information
7 about those types of larvae in the ITP or other
8 documents you've reviewed for your testimony?

9 WITNESS ROSENFELD: I don't recall seeing
10 information specific to other species.

11 MS. MESERVE: Do you consider the proposed
12 North Delta diversion screens to be experimental in
13 nature?

14 WITNESS ROSENFELD: I do.

15 RIGHT4: And then moving on to sediment.

16 CO-HEARING OFFICER DODUC: That was quite a
17 long list of three questions, Miss Meserve.

18 I want to make sure Dr. Rosenfield is not too
19 overtired.

20 WITNESS ROSENFELD: I'm getting there, but if
21 we're --

22 CO-HEARING OFFICER DODUC: All right.

23 WITNESS ROSENFELD: -- only a few left.

24 CO-HEARING OFFICER DODUC: A few left.

25 MS. MESERVE: Yes.

1 My last question was just to follow up on the
2 Sediment Reintroduction Plan that was discussed by
3 Mr. Herrick's questions.

4 Was it because you considered the
5 Reintroduction Plan in the ITP, and elsewhere, to be
6 experimental that you proposed to limit the amount of
7 sediment that could be removed to 5 percent of what was
8 in the river?

9 WITNESS ROSENFELD: I don't recall seeing a
10 specific plan or a very detailed and comprehensive plan
11 about sediment reintroduction to the Sacramento River
12 after diversion from the North Delta.

13 MS. MESERVE: I should clarify.

14 It's development of a Sediment Reintroduction
15 Plan in the future that I'm referring to.

16 WITNESS ROSENFELD: Right.

17 So, the concern about the lack of specificity
18 and the lack of ability to verify whether such a plan
19 would work once it is developed led me to recommend
20 that a condition of the operation of the North Delta
21 diversions, if it were approved, would be that it can't
22 affect turbidity inputs to the Delta more than
23 5 percent.

24 MS. MESERVE: Thank you.

25 No further questions.

1 CO-HEARING OFFICER DODUC: Thank you.

2 With that, we will take our break.

3 Miss Ansley.

4 MS. ANSLEY: Just really fast.

5 It's my understanding that Ms. Morris is
6 actually jumping in a taxi at the airport.

7 We have her questions, of course, and we can
8 start. We can always start. But to that extent, she
9 is definitely on her way and has made a big effort to
10 catch an earlier flight back from her speaking
11 engagement.

12 And, also, for housekeeping matters, we may
13 also want to address Mr. Jackson's witnesses, two of
14 which are here today, not one.

15 And so I believe we can also just try to
16 develop some logistics to see how much we can get done
17 today.

18 CO-HEARING OFFICER DODUC: All right. Well,
19 we are taking a break right now, and we will return at
20 3 o'clock.

21 (Recess taken at 2:44 p.m.)

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

23 CO-HEARING OFFICER DODUC: It is 3 o'clock.
24 We are back in session.

25 Ms. Sheehan.

1 I'm sorry. I think there's a housekeeping
2 matter that Miss Meserve needs to address.

3 MS. MESERVE: Thank you.

4 Mr. Baker pointed out that I had misnumbered
5 the exhibits that I used with the Klimley study. It
6 should have been referred to as FSL-53. And I will be
7 submitting a Revised Exhibit Index for Friends of Stone
8 Lakes that reflects that number.

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

11 We have cross-examination.

12 Miss Sheehan.

13 MS. SHEEHAN: Hi. My name is Becky Sheehan.
14 I'm with the State Water Contractors, second string.
15 Second, or maybe she's almost here momentarily.
16 Anyway, you're stuck with me for now.

17 CROSS-EXAMINATION BY

18 MS. SHEEHAN: Dr. Rosenfield, it's nice to see
19 you.

20 WITNESS ROSENFELD: Nice to see you, too.

21 MS. SHEEHAN: I'll try real hard not to keep
22 you too long and get you out of here.

23 WITNESS ROSENFELD: Thank you so much.

24 And thank you to the Board Members and other
25 attorneys for keeping an eye out on me. I appreciate

1 it.

2 MS. SHEEHAN: Yeah. Well, I'm glad you were
3 able to come.

4 So, going back to this morning -- just diving
5 right into it here -- you identified the pages from the
6 MAST Report that you relied on in your testimony, which
7 is NRDC-58, Page 34, Line 6 through 7.

8 And you identified the pages that you were
9 citing to as Pages 154 through 162, if I wrote that
10 down correctly.

11 And isn't it -- Did I write that down
12 correctly?

13 I wrote down --

14 WITNESS ROSENFELD: I'm just trying to find
15 my own notes.

16 MS. SHEEHAN: All right. I wrote down --

17 WITNESS ROSENFELD: 154 to 162.

18 MS. SHEEHAN: Yes, that's what I wrote down.

19 Okay. When I look at those pages, it appears
20 to be describing a multivaried analysis; is that
21 correct?

22 WITNESS ROSENFELD: If we could call it up,
23 that might --

24 MS. SHEEHAN: Sure.

25 WITNESS ROSENFELD: -- help, but yes.

1 MS. SHEEHAN: So I have -- Mr. Baker, could
2 you please pull up State Water Contractors Number 5.

3 (Exhibit displayed on screen.)

4 MS. SHEEHAN: Do you recognize this as being
5 the MAST Report?

6 WITNESS ROSENFELD: Yes.

7 MS. SHEEHAN: Okay. If we could please go
8 to -- Well, you said 154 but, actually, I think 153
9 might be a little bit more informative because it's the
10 beginning of the section.

11 (Exhibit displayed on screen.)

12 WITNESS ROSENFELD: Okay.

13 MS. SHEEHAN: So, it says, "Multivariate
14 Analysis."

15 Do you see that on the page?

16 WITNESS ROSENFELD: Yes.

17 MS. SHEEHAN: Okay. Then if you'd go to 154,
18 the -- I'll represent to you that the rest of this
19 is -- through 1 -- Page 162 is a description of the
20 multivariate analysis.

21 Is that your understanding as well?

22 WITNESS ROSENFELD: Yes.

23 MS. SHEEHAN: Isn't it true that this
24 multivariate analysis is qualified by in the MAST
25 Report as being for illustrative purposes only?

1 WITNESS ROSENFELD: I don't re -- It is
2 qualified. I don't remember it being for illustrative
3 purposes only, but . . .

4 MS. SHEEHAN: Okay. Well, maybe we can go to
5 Page 152.

6 (Exhibit displayed on screen.)

7 MS. SHEEHAN: Do you see the highlighted
8 language up there at the top?

9 WITNESS ROSENFELD: Yes.

10 MS. SHEEHAN: Do you want to just read that
11 for a moment?

12 WITNESS ROSENFELD: Sure.

13 Do you want me to read it out loud or --

14 MS. SHEEHAN: You don't have to.

15 WITNESS ROSENFELD: Okay.

16 MS. SHEEHAN: Everyone can read it for
17 themselves.

18 Whoops.

19 (Exhibit displayed on screen.)

20 MS. SHEEHAN: There we go. You can read it.

21 WITNESS ROSENFELD: (Examining document.)

22 Yes, I see that.

23 MS. SHEEHAN: So, do you -- Does this refresh
24 your recollection that the multivariate analysis is one
25 of the analyses that this report says is for

1 illustrative purposes only?

2 WITNESS ROSENFELD: That's how the authors
3 wanted to characterize it, yes.

4 MS. SHEEHAN: Okay. And that -- It also said
5 that this analysis should be subject to peer review
6 before it can be used for -- to draw any conclusions?

7 WITNESS ROSENFELD: Yes, I see that --

8 MS. SHEEHAN: Okay.

9 WITNESS ROSENFELD: -- qualification.

10 MS. SHEEHAN: All right. Then if we could go
11 to the Klimley report.

12 And I also have a copy of it as well.

13 Can you please go to State Water Contractors
14 4.

15 (Exhibit displayed on screen.)

16 MS. SHEEHAN: I believe this is the same study
17 that Miss Meserve just showed and you just recognized
18 as being the Klimley that you relied on?

19 WITNESS ROSENFELD: Yes.

20 MS. SHEEHAN: And I think you went over this a
21 bit with Miss Meserve.

22 But you relied on this paper to support your
23 conclusions in several locations in your paper -- in
24 your testimony, but generally to . . .

25 You said it was demonstrating that there is a

1 relationship between flow and survival of out-migrating
2 juvenile Salmon?

3 WITNESS ROSENFELD: Spring-run Chinook --

4 MS. SHEEHAN: Spring-run.

5 WITNESS ROSENFELD: -- Salmon in particular,
6 yes.

7 MS. SHEEHAN: Thank you for that
8 clarification.

9 Okay. And isn't it true that the objective of
10 this study was to highlight real-time acoustic
11 water-churning nodes as being a tool for Managers and
12 Conservation Biologists?

13 WITNESS ROSENFELD: Yes, that's the -- seems
14 to be their focus.

15 MS. SHEEHAN: Their focus.

16 And could we please go to Page 10 of this
17 report.

18 (Exhibit displayed on screen.)

19 MS. SHEEHAN: If you could look at -- right
20 there under "Results."

21 And maybe read that paragraph right there
22 under "Results" for a moment.

23 WITNESS ROSENFELD: (Examining document.)

24 Yes, I see that.

25 MS. SHEEHAN: So, is it your understanding as

1 well that the intent of the authors of this paper was
2 to communicate studies to look at this, you know,
3 real-time detection tool for Managers, and that they
4 weren't necessarily analyzing the results to attribute
5 it to cause, like a -- maybe a flow relationship or any
6 other kind of covariate?

7 WITNESS ROSENFELD: Well, in the quote that I
8 read before, they -- they did link it to a covariate of
9 flow.

10 And I'll say that your statement of what their
11 intent is seems accurate, but it's pretty common for
12 scientists to read people's papers and pull out
13 information that is valuable aside from the focus of
14 the paper.

15 MS. SHEEHAN: Uh-huh.

16 WITNESS ROSENFELD: The focus of the paper is
17 often determined by the comments of the editors
18 requiring a focused castings and a global perspective
19 and, you know, that may not be the most interesting
20 cast for the reader.

21 MS. SHEEHAN: But the Klimley authors, they
22 didn't reach a result as far as a relationship between
23 flow and survival; correct?

24 WITNESS ROSENFELD: They show a result and
25 were very specific about the flow -- the flow

1 conditions that occurred in that they set their --
2 their findings in the context of flows in two different
3 years.

4 MS. SHEEHAN: Right.

5 But did they do an analysis to determine
6 whether there was specifically a flow survival
7 relationship based on their studies?

8 WITNESS ROSENFELD: They noted that flows
9 were higher during the high-flow period, and that their
10 experiment in the high-flow year was done in the
11 high-flow period.

12 So, you know, this is one example of one study
13 in one year. And I've cited it with other papers that
14 make similar findings in different years studying
15 different fish to draw my conclusions that there are
16 increasingly papers that are showing these flow
17 survival relationships.

18 MS. SHEEHAN: I'm not sure if that directly
19 answered my question.

20 I understand that you've looked at other
21 literature, but I really wanted to address Klimley
22 directly --

23 WITNESS ROSENFELD: Um-hmm.

24 MS. SHEEHAN: -- and what the Klimley study
25 authors analyzed and what conclusions the Klimley

1 authors reached.

2 And isn't it true that the Klimley authors did
3 not look at -- did not evaluate whether there was a
4 flow survival relationship?

5 WITNESS ROSENFELD: As I said, there are --
6 there are statements that I read earlier set their
7 findings in the context of flows in different years.

8 So, as a knowledgeable scientific reader of
9 their paper, I can -- Yeah. Regardless of what they
10 intend -- intended or what they wanted to focus on, the
11 data are there to make the assessment that I did.

12 MS. SHEEHAN: All right. So I -- I get that
13 you're reaching a different conclusion, that you're
14 looking at -- I believe it's Page 12 specifically --
15 and you're looking at the two studies in 2015, and
16 you're looking at those results, and you're looking at
17 the ones that -- in 2016, and you're looking at those
18 results, and that you specifically are interpreting
19 those to reach a particular conclusion.

20 But my question is, did the Klimley authors do
21 an analysis to determine whether there's specifically a
22 flow survival relationship?

23 CO-HEARING OFFICER DODUC: And do you mean an
24 analysis in this study, this --

25 MS. SHEEHAN: In this study, in this paper.

1 MR. OBEGI: I'm going to raise two objections
2 actually.

3 The first is that I believe the question is
4 asking what is in the paper itself, and the Best
5 Evidence Rule would be the document itself. It's not
6 asking Dr. Rosenfield's opinion of it.

7 The second objection is that DWR's conferring
8 with counsel for the cross-examination, which seems
9 highly improper given that they've completed their
10 cross-examination, and I'd ask that counsel for DWR
11 leave the area of State Water Contractors'
12 cross-examination.

13 CO-HEARING OFFICER DODUC: Let me seek advice
14 from the attorneys.

15 MR. DEERINGER: Speaking only for myself, I'm
16 not aware of any ruling by the Hearing Officers in this
17 proceeding that attorneys are not allowed to confer and
18 coordinate during cross-examination.

19 CO-HEARING OFFICER DODUC: And we've had
20 occasions where Miss Meserve, Mr. Keeling and others
21 have assisted other parties.

22 Thank you for reminding me of that,
23 Mr. Deeringer, so that is overruled.

24 And he also had an objection about -- Your
25 first objection.

1 MR. OBEGI: That the question is not asking
2 for --

3 CO-HEARING OFFICER DODUC: Using a legal term
4 that I'm not familiar with.

5 MR. OBEGI: That the questioner was not asking
6 for the witness' opinion but was, instead, asking him
7 to restate what was in the paper itself.

8 And that's the Best Evidence Rule would be
9 that the paper itself speaks for itself, doesn't
10 require a question from the witness.

11 MR. DEERINGER: So, as our ruling letter --
12 Actually, I should say the Hearing Officers. Excuse
13 me.

14 The Hearing Officers' ruling yesterday stated
15 asking a witness to recite or characterize the contents
16 of a document is not of evidentiary value.

17 However, in some cases, it may be necessary in
18 order to lay a foundation to ask the witness his
19 opinion.

20 (Ms. Morris enters hearing room.)

21 MR. DEERINGER: And, so, if a question is
22 coming about the witness' opinion about the document,
23 then that would be proper.

24 MS. SHEEHAN: So, if I may add, I would just
25 point out that I'm not asking, as some folks have done,

1 to look at a table and read the table to me, for
2 example, and tell me --

3 CO-HEARING OFFICER DODUC: I noticed that.
4 Good job.

5 MS. SHEEHAN: I'm not doing that and that has
6 been where some of the objections have been as to
7 papers.

8 What I'm trying to determine is: Since
9 Dr. Rosenfield relied on this paper, to what extent is
10 it his interpretation of data in the paper that he's
11 relying on, and to what extent is it the authors'
12 conclusions that he is relying on.

13 CO-HEARING OFFICER DODUC: Thank you for that
14 clarification.

15 Overruled.

16 Mr. Obegi, Dr. Rosenfield, you probably need
17 the question repeated by now.

18 WITNESS ROSENFELD: Yes.

19 MS. SHEEHAN: All right. So maybe we could
20 bring up Page 12.

21 (Exhibit displayed on screen.)

22 CO-HEARING OFFICER DODUC: We welcome
23 Miss Morris, although Miss Sheehan has been doing a
24 fine job.

25 MS. SHEEHAN: She must have good cardio

1 because she's not that winded.

2 All right. So . . .

3 (Laughter.)

4 MS. SHEEHAN: You'll see there at the top of
5 Page 12 on the left-hand column, I believe those are
6 the numbers, the 5.3, I believe there's an 8 and
7 27 percent that you cite in your testimony.

8 And, so, while the authors are describing
9 these results, are they reaching any specific
10 conclusion -- or isn't it true that they're not
11 reaching any specific conclusion as to whether there is
12 a relationship between flow and survival of
13 out-migrating spring-run Salmon, juvenile Salmon?

14 WITNESS ROSENFELD: Again, I would say the
15 last sentence in that paragraph (reading):

16 "This higher survival and faster
17 movement coincided with the higher flows
18 in Sacramento River during 2016."
19 It sets this context of flow.

20 So, you know, what other analyses they would
21 do, or could do, there might be other analyses that
22 they could do.

23 I'm not pre-judging or post-judging how they
24 did their study. But they presented data; they set it
25 in the context of flow.

1 My testimony relies on that and my own look
2 at -- at their data to suggest what they've suggested,
3 that flow is a -- is a variable that is part --
4 partially or wholly responsible for the difference
5 between the 27 percent survival and the 8 percent
6 survival.

7 MS. SHEEHAN: Okay. But you would agree that
8 you should perhaps interpret the paper in the context
9 that the authors intended their analysis to be.

10 And as we looked at on Page 10, it was in the
11 context of: Look at this tool that we have that we
12 could use to inform real-time Managers.

13 WITNESS ROSENFELD: And I would repeat that I
14 wouldn't agree with that -- that, that a knowledgeable
15 reader of such papers needs to be constrained by the
16 intent and the framing of the authors in interpreting
17 the results, as long as they're being responsible about
18 their interpretation of the results.

19 MS. SHEEHAN: Okay. And, then, could we agree
20 that this paper is showing the results for just three
21 studies? There were two in 2015 that you cite and
22 there's only one in 2016 that you also cite.

23 And those three studies are the basis of your
24 opinion. Even though maybe this paper reports other
25 results, you only cite those three. Is --

1 WITNESS ROSENFELD: That's my recollection of
2 those studies with regard to spring-run Chinook Salmon.

3 They don't form the entire basis of my
4 opinion. I'm citing this paper along with other
5 papers, and my existing knowledge.

6 MS. SHEEHAN: Okay. Thank you.

7 Just one moment. I'm going to talk to
8 cocounsel seeing as she just got in here.

9 Okay. So switching gears a bit.

10 Yesterday, I believe that you testified that
11 you had not done any additional modeling in support of
12 your testimony; is that correct?

13 WITNESS ROSENFELD: CalSim or other
14 hydrodynamic modeling, that's correct.

15 MS. SHEEHAN: Did you do any new modeling?
16 Or, I guess, did you do any modeling at all to support
17 your conclusions in your testimony?

18 WITNESS ROSENFELD: "Modeling" is a pretty
19 broad term.

20 So, there's modeling that predates the writing
21 of this testimony that -- of population biological
22 responses of whether there are conflicts between
23 upstream and downstream biological applications of
24 water, for instance, that I'm relying on as part of my
25 knowledge.

1 So that could be called modeling in some --

2 MS. SHEEHAN: Okay.

3 WITNESS ROSENFELD: -- circumstances.

4 MS. SHEEHAN: But did you do any independent
5 analysis of the effects of Cal WaterFix in support of
6 your testimony?

7 WITNESS ROSENFELD: Independent
8 analysis . . .

9 MS. SHEEHAN: That you yourself did to try to
10 assess the effects of Cal WaterFix.

11 WITNESS ROSENFELD: Yeah. My independent
12 analysis was reading the Project documents and related
13 documents -- some that I cited, some that I didn't,
14 that form the basis of my analysis.

15 MS. SHEEHAN: So your analysis is based on
16 literature review. So, the planning documents for Cal
17 WaterFix, for example, and studies.

18 Is that a correct characterization of the
19 basis of your opinion?

20 WITNESS ROSENFELD: In addition to the
21 aforementioned modeling that I have done prior to this
22 testimony that informs my opinion of the value of
23 different flow rates and protective measures for the
24 fishes.

25 CO-HEARING OFFICER DODUC: Mr. Bezerra.

1 MR. BEZERRA: Yes. I'm going to move to
2 strike the previous answer.

3 To the extent that Dr. Rosenfield is relying
4 on a previous analysis that I think has been
5 undisclosed in this hearing as reflecting modeling,
6 that violates the October 30th, 2015, Notice of Hearing
7 of this hearing which requires that anyone relying on
8 modeling appropriately disclose that modeling so that
9 all other parties can understand how that modeling
10 works and verify its operations.

11 CO-HEARING OFFICER DODUC: Dr. Rosenfield,
12 would you clarify what you mean by those -- by that
13 reference to modeling that you relied on.

14 WITNESS ROSENFELD: Yeah. I mean, I was
15 trying to say that the people's definition of
16 "modeling" varies, and that, for instance, as part of
17 my testimony to the 2010 Public Trust Flows Criteria
18 Report, I did what some people would refer to as
19 modeling of population biological responses to
20 different flows.

21 So, if -- if the question --

22 CO-HEARING OFFICER DODUC: And -- I'm sorry.

23 WITNESS ROSENFELD: -- referred to that as
24 modeling, then I'm relying on that for the basis of my
25 testimony.

1 CO-HEARING OFFICER DODUC: And that is not in
2 the record for these proceedings.

3 WITNESS ROSENFELD: My -- I don't believe my
4 testimony is in the -- is in the record for these
5 proceedings.

6 CO-HEARING OFFICER DODUC: But your modeling
7 for the 2010 proceeding is not.

8 WITNESS ROSENFELD: That's what I mean.

9 CO-HEARING OFFICER DODUC: Okay.

10 WITNESS ROSENFELD: I don't believe it is.

11 MS. SHEEHAN: So, Dr. Rosenfield, the analysis
12 you just referenced, the 2010 -- the analysis that you
13 did for the 2010ed -- I'm sorry -- 2010 Flow Report,
14 that was not specific to Cal WaterFix; correct?

15 WITNESS ROSENFELD: It was not specific to
16 Cal WaterFix.

17 MS. SHEEHAN: And is there any modeling that
18 you were talking about, and however you want to
19 interpret that term, to be maybe more than just CalSim
20 modeling, but modeling, a broader term, is any of that
21 modeling directly modeling the potential effects of
22 Cal WaterFix?

23 WITNESS ROSENFELD: No. I'm saying that work
24 that I've done in the past informs my opinion of what I
25 read in the Project documents and my literature review.

1 MS. SHEEHAN: Okay. Could you please identify
2 for me what studies you're specifically referencing
3 that is informing your decision regarding the effects
4 of Cal WaterFix.

5 WITNESS ROSENFELD: There's years and years
6 of work. I mean, my -- I'm only trying to say that my
7 background and knowledge involves research that I've
8 done, including research that led to publications,
9 research that led to reports, research that informs my
10 opinion.

11 MS. SHEEHAN: So --

12 MS. MESERVE: I just want to join
13 Mr. Bezerra's objection.

14 It's one thing for the witness to rely on his
15 knowledge generally in informing his opinions, which is
16 quite all right.

17 It's another thing to say that those modeling,
18 that he's relying on those in some deeper fashion.

19 So, to the extent --

20 CO-HEARING OFFICER DODUC: Miss Morris.

21 MS. MORRIS: -- that he's --

22 CO-HEARING OFFICER DODUC: Hold on.

23 My understanding of Dr. Rosenfield's response
24 was that he didn't know what specifically Miss Sheehan
25 meant by "modeling" --

1 WITNESS ROSENFELD: That's correct.

2 CO-HEARING OFFICER DODUC: -- and his answer
3 was simply to say that that was the analysis that he
4 did.

5 So if your objection is to the term "modeling"
6 that he conducted, we will have to refer back to
7 Miss Sheehan for that.

8 MS. SHEEHAN: So, what I'm trying to get to
9 directly -- And I've read many of your studies over the
10 years, and there certainly would be, I would suspect,
11 in forming your opinion about how the system works and
12 certainly relevant issues.

13 But are you representing here that there is a
14 specific study that you have done that specifically
15 looked at the Cal WaterFix Project and modeled the
16 potential effects of the Cal WaterFix Project?

17 WITNESS ROSENFELD: I think I should ask you
18 to define "modeled."

19 MS. SHEEHAN: I will take your definition.
20 I'm fine with that.

21 But actually modeled the Cal WaterFix Project
22 is what I'm asking, not just generally modeling
23 relevant issues.

24 WITNESS ROSENFELD: Right.

25 So, modeling the results or the operations of

1 Cal WaterFix, I did not do specifically. I relied on
2 the copious modeling that was done in other places, or
3 lack of modeling where I thought it should have been
4 done.

5 CO-HEARING OFFICER DODUC: Mr. Bezerra.

6 Hold on, Miss Sheehan.

7 MR. BEZERRA: Again, I'm going to move to
8 strike that answer on the same grounds.

9 Earlier today, Dr. Rosenfield referred in
10 general terms to hydrologic, quote-unquote, modeling
11 that he said, I believe, he had conducted previously of
12 the terms and conditions, or something similar to the
13 terms and conditions he's proposing.

14 And he stated the opinion that, based on that
15 previous modeling, he believed that all of the terms
16 and conditions he's proposing are workable.

17 But that modeling is not in the record of this
18 hearing, as far as I can tell. And to the extent
19 Dr. Rosenfield is relying on whatever that modeling is,
20 it violates the Notice of Hearing for this hearing.

21 CO-HEARING OFFICER DODUC: Mr. Herrick.

22 MR. HERRICK: Four different attorneys have
23 asked Dr. Rosenfield the same line of questions about
24 modeling. He answered them to all prior three ones;
25 he's answered them now.

1 They keep asking him if there's anything else
2 he's locked at and use "modeling" as broad as you want.
3 This is getting to the point of absurdity when you ask
4 him a question and then move to strike his answer.

5 So, I don't know what the confusion is. He's
6 not submitting any un -- non-previously disclosed study
7 or anything. He's trying to answer the question as to
8 what he's based his opinion on.

9 So we can ask him another hundred times, but
10 he's already answered it to three different counsel,
11 and I don't know what the purpose here is of asking
12 questions and then preventing him from answering.

13 CO-HEARING OFFICER DODUC: Thank you,
14 Mr. Herrick.

15 My understanding of Dr. Rosenfield's answer is
16 that he is not relying on any specific, quote
17 "modeling" unquote, but that his testimony is based on
18 the body of knowledge and expertise that he has
19 developed over the many years of his fisheries
20 profession. And we'll just leave it at that.

21 Is that correct, Dr. Rosenfield?

22 WITNESS ROSENFELD: That's a correct
23 interpretation.

24 Thank you.

25 CO-HEARING OFFICER DODUC: All right.

1 MS. SHEEHAN: Thank you.

2 And I am fine with that answer. That's what I
3 suspected to be true, and so I'm glad we -- that was
4 cleared up.

5 I did want to reference Pages 27 through 29 in
6 your testimony, which I believe is NRDC-58.

7 (Exhibit displayed on screen.)

8 MS. SHEEHAN: So Page 27.

9 (Exhibit displayed on screen.)

10 MS. SHEEHAN: Okay. So starting here on
11 Page 27, I believe you were addressing the analysis
12 that was done in the ITP looking at the relationship
13 between abundance and X2, based on I believe it was
14 Kimmerer (2009).

15 And I believe your recommendation is that an
16 analysis should have been done based on an approach
17 such that was used in the Nobriga-Rosenfield 2016
18 paper.

19 Did I get that right?

20 WITNESS ROSENFELD: That the Nobriga and
21 Rosenfield 2016 paper would have been an end
22 improvement, yes.

23 MS. SHEEHAN: Okay. And -- But you didn't --
24 you didn't do the analysis using the Nobriga-Rosenfield
25 2016 approach; correct?

1 WITNESS ROSENFELD: We didn't.

2 And the numbers that we would have needed
3 weren't available -- or the latest numbers are
4 different than the numbers that existed at the time, I
5 believe.

6 MS. SHEEHAN: So the modeling has been
7 available. The modeling of predicted flows has been
8 available from DWR for a long time.

9 So which numbers are you referring to in your
10 answer?

11 WITNESS ROSENFELD: My understanding is that
12 the modeling was updated in February, perhaps, of this
13 year, or maybe it was 2017.

14 MS. SHEEHAN: Okay.

15 WITNESS ROSENFELD: So, the answer to your
16 question is no, we didn't redo the analysis. We had
17 assumptions of Cal WaterFix operations.

18 MS. SHEEHAN: And isn't it true that the
19 Cal WaterFix H3+ modeling was available last February?

20 WITNESS ROSENFELD: I'm not familiar with the
21 "H3+" terminology. But there have been various updates
22 to the modeled exports and outflows that I'm aware of.

23 MS. SHEEHAN: So the most -- When I say
24 "Cal WaterFix H3+," I'm referring to the current
25 Project, so it would be the most updated modeling.

1 And isn't it true that that modeling was
2 available last February?

3 Actually, it was February 2017. I'll restate
4 it, February 2017.

5 WITNESS ROSENFELD: That tracks with my
6 understanding, yeah, and that's after the publication
7 of --

8 MS. SHEEHAN: Okay. And that was before your
9 testimony was due -- right? -- because testimony was
10 originally due November?

11 WITNESS ROSENFELD: My testimony was due
12 then.

13 MS. SHEEHAN: Well, everyone's was. But I
14 think you had an extension so that --

15 WITNESS ROSENFELD: Yes.

16 MS. SHEEHAN: -- you had it later.

17 Okay. And, then, I'm going to move on.

18 And I wanted to get a better understanding of
19 how you interpret AIC scores.

20 Do you recall yesterday there was some
21 discussion about AIC scores and, of course, you're
22 familiar with them because you've used them yourself in
23 other papers, particularly Nobriga-Rosenfield (2016),
24 for example.

25 So is it correct you're familiar?

1 WITNESS ROSENFELD: I'm generally familiar
2 with the AIC.

3 MS. SHEEHAN: Okay. And when you were
4 speaking with DWR yesterday, they brought up Burnham
5 et al. (2011) and I want to bring it up now, too.
6 Where's my . . .

7 It is DWR-1162. It's on the disk that I just
8 gave you as well if that's easier.

9 (Exhibit displayed on screen.)

10 MS. SHEEHAN: So my recollection is that you
11 didn't have a detailed understanding of this paper; is
12 that correct?

13 WITNESS ROSENFELD: That's correct.

14 MS. SHEEHAN: But are you generally familiar
15 with the work of Dr. Burnham?

16 WITNESS ROSENFELD: I'm not very familiar
17 with Dr. Burnham.

18 MS. SHEEHAN: Okay. And I do have a question
19 that I want to pose, though, and it's on Page 25.

20 (Exhibit displayed on screen.)

21 MS. SHEEHAN: Could you scroll up a little
22 bit?

23 (Exhibit displayed on screen.)

24 MS. SHEEHAN: And it's specifically about the
25 statement that's highlighted here. This is, of course,

1 Dr. Burnham's opinion that AIC values that are greater
2 than approximately 20 have essentially no empirical
3 support.

4 And my question is: Do you agree with that?

5 WITNESS ROSENFELD: I don't have the basis to
6 agree or disagree.

7 It seems like a reasonable statement given my
8 understanding of AIC, but I'm not an expert in
9 production of AIC scores or the mechanics there.

10 MS. SHEEHAN: But you used this approach in
11 some of your papers, so I would imagine that you have
12 knowledge of how to interpret results?

13 WITNESS ROSENFELD: I do. And the lead
14 author on that paper, Matt Nobriga, has a better
15 understanding.

16 MS. SHEEHAN: Um-hmm.

17 WITNESS ROSENFELD: So I have an
18 understanding; he has an understanding.

19 I can't speak to exactly what his
20 understanding is, but I -- when it comes to AIC scores,
21 I defer to Matt's -- Mr. Nobriga's expertise there.
22 He's more familiar --

23 (Timer rings.)

24 WITNESS ROSENFELD: -- with the methodology
25 than I am.

1 MS. SHEEHAN: So, if I understand you --

2 CO-HEARING OFFICER DODUC: Miss Sheehan -- I'm
3 sorry. How much more time do you need? And what
4 additional lines of questioning do you have?

5 MS. SHEEHAN: Probably -- One second, please.

6 (Counsel confer.)

7 MS. SHEEHAN: It looks like we might need 20
8 minutes. The clock was running during some of the
9 objections and --

10 CO-HEARING OFFICER DODUC: What additional --

11 MS. SHEEHAN: And the subject matter is -- I'm
12 just about done with this topic.

13 And we're trying to stick very close to his
14 testimony. We're not trying to deviate from it at all.

15 I did have a question about specifically
16 Longfin Smelt.

17 And I believe Miss Morris has some questions
18 regarding some of the studies of the fishes in the
19 Delta that I believe Dr. Rosenfield is familiar with.

20 CO-HEARING OFFICER DODUC: All right. Are you
21 okay to proceed for another 20 minutes, Dr. Rosenfield,
22 or do you want to take a short break.

23 WITNESS ROSENFELD: I think we should take a
24 short break. Or I would like to take a short break.

25 CO-HEARING OFFICER DODUC: All right. Let's

1 take --

2 MR. OBEGI: Before we break, can I raise an
3 objection to the questions about the AIC scores.

4 I believe they lack foundation. The witness
5 has testified that he's not familiar with this paper
6 and he's not an expert on this.

7 CO-HEARING OFFICER DODUC: And, Mr. Obegi, his
8 answer to Miss Sheehan's questions reflect that.

9 MR. OBEGI: I'm just -- If we're going to
10 continue down this road, I want to have my objection
11 reflected.

12 CO-HEARING OFFICER DODUC: I believe she said
13 she's wrapping up.

14 We're taking a break, and we will return --
15 Will a break until 3:40 be sufficient, Dr. Rosenfield?

16 WITNESS ROSENFELD: Yes, that would be great.

17 CO-HEARING OFFICER DODUC: Let's do that.

18 (Recess taken at 3:32 p.m.)

19 (Proceedings resumed at 3:40 p.m.):

20 CO-HEARING OFFICER DODUC: All right. We are
21 resuming.

22 And as requested, we've provided another 20
23 minutes to your cross, Miss Sheehan and Miss Morris.

24 MS. SHEEHAN: Thank you.

25 Mr. Baker, could you please go to NRDC-38,

1 Page 38, Table 3.

2 (Exhibit displayed on screen.)

3 MS. SHEEHAN: If you look at flow in the
4 regional model, Dr. Rosenfield, you'll see flow is near
5 the bottom --

6 WITNESS ROSENFELD: I'm sorry. Can you
7 review what paper this --

8 MS. SHEEHAN: Oh, I'm sorry.

9 WITNESS ROSENFELD: -- is and the context?

10 MS. SHEEHAN: This is the Notch paper we were
11 just -- well, we discussed yesterday -- you discussed
12 yesterday with DWR and it has to do with some of the
13 AIC --

14 WITNESS ROSENFELD: Okay.

15 MS. SHEEHAN: -- discussion.

16 WITNESS ROSENFELD: Great.

17 MS. SHEEHAN: This is NRDC-38 and Page 38,
18 Table 3, reporting results.

19 The regional model flow, for example, has an
20 AIC score of 171.

21 WITNESS ROSENFELD: That's flow alone, yes.

22 MS. SHEEHAN: Yes. Thank you.

23 Would you interpret that as having any
24 empirical support?

25 WITNESS ROSENFELD: No.

1 MS. SHEEHAN: Okay. Thank you.

2 And so one more question.

3 Yesterday, you were asked about your
4 testimony, NRDC-58, Page 24, Lines 21 through 24.

5 (Exhibit displayed on screen.)

6 MS. SHEEHAN: Yeah. 21 through 24.

7 And when you were asked about what study
8 supports this conclusion you have, or statement you
9 have here, regarding Longfin Smelt being a forage fish
10 and being consumed as a major prey source for species
11 such as Starry Flounder, I believe you said that Jassby
12 (1995) provides support for that statement.

13 Do you recall that?

14 WITNESS ROSENFELD: That was my recollection,
15 yes.

16 MS. SHEEHAN: Okay. And so I've been having a
17 little trouble finding where Jassby 1995 says that,
18 although -- So maybe we could just pull that up real
19 quick.

20 And that's state Water Contractors' Number 3.

21 (Exhibit displayed on screen.)

22 MS. SHEEHAN: Yes.

23 The closest I could find was Figure 3.
24 However, I don't see, necessarily, support for that.

25 So, do you agree that this figure does not

1 show that Starry Flounder consume Longfin Smelt?

2 WITNESS ROSENFELD: I agree that this figure
3 does not indicate that Longfin Smelt are a significant
4 contributor to Starry Flounder populations.

5 So, I may have misremembered Jassby, but it
6 doesn't affect my conclusion based on my own
7 understanding and research on the geography and ecology
8 and behavior of Longfin Smelt and Starry Flounder.

9 MS. SHEEHAN: So, I don't have a lot of
10 information about -- not a very lot of information
11 about what study would support conclusions regarding
12 species that prey upon Longfin Smelt.

13 So, could you provide me with the source that
14 you're relying on?

15 WITNESS ROSENFELD: I'm relying on my
16 knowledge of the distribution of Longfin Smelt, the
17 distribution of Starry Flounder, the fact that Starry
18 Flounder are a predatory species, and Longfin Smelt
19 co-occur, both topographically and at depth with Starry
20 Flounder; that it seems very unlikely to me that Starry
21 Flounder would not prey on Longfin Smelt, and the more
22 abundant Longfin Smelt are, the more likely it is that
23 that predation occurs.

24 MS. SHEEHAN: Do any of the studies that you
25 cite in your bibliography, starting on Page 44 of your

1 testimony, do any of those studies address this issue
2 to support your conclusion regarding whether Starry
3 Flounder prey on Longfin Smelt?

4 WITNESS ROSENFELD: Not to my knowledge.

5 MS. SHEEHAN: Okay.

6 MS. MORRIS: Good afternoon.

7 I just have a couple questions and I'll move
8 this quickly as possible without speaking so quickly.

9 So, you're appearing today, and as a witness
10 in this proceeding on behalf of several entities,
11 including NRDC; correct?

12 WITNESS ROSENFELD: That's correct.

13 MS. MORRIS: And is it fair to say that you
14 are familiar with and work with NRDC and you have a
15 general understanding of what they do and the type of
16 work that they do?

17 WITNESS ROSENFELD: Well, I work with
18 particular employees of NRDC. It's a very large
19 organization. So I'm familiar with the work of the
20 people that I work closely with --

21 MS. MORRIS: Great.

22 WITNESS ROSENFELD: -- not so much with
23 others.

24 MS. MORRIS: Yeah. Thank you for making me be
25 more specific.

1 I was really being -- wanting to narrow in on
2 the work NRDC in the Delta.

3 So are you familiar with generally the work
4 the NRDC does in the Delta?

5 WITNESS ROSENFELD: Generally.

6 MS. MORRIS: Do you know if NRDC invests in
7 Delta science and research?

8 WITNESS ROSENFELD: I don't know.

9 MS. MORRIS: Have you -- Do you have any
10 recollection of any study or research that they founded
11 in the last five years?

12 WITNESS ROSENFELD: I should clarify my
13 previous answer.

14 They do employ Dr. Christina Swanson, who is
15 an expert in many aspects of Delta hydrology and fish
16 physiology, fish conservation.

17 So, it's been awhile since I've talked to
18 Dr. Swanson, but she certainly -- I'm aware that she
19 does work still on Delta issues even though her purview
20 is broader now.

21 But, in the last five years, I don't recall
22 which publications, if any, that I've seen from her.

23 MS. MORRIS: What about NRDC funding work
24 outside of the organization, investing in other
25 scientists that are performing work, such as, like,

1 U.C. Davis?

2 MR. OBEGI: Objection: Relevance.

3 CO-HEARING OFFICER DODUC: Miss Morris.

4 MS. MORRIS: I'm just trying to get an
5 understanding.

6 I think that we've opened the scope of this
7 proceeding very broadly beyond just the water
8 quality -- I'm sorry -- just beyond WaterFix and some
9 of the flow issues.

10 And I'm just trying to gain an
11 understanding -- almost done, I have two more quick
12 questions -- about NRDC's role in that proceeding.

13 I think it goes to --

14 CO-HEARING OFFICER DODUC: For -- I'm sorry.
15 For what purpose?

16 MS. MORRIS: I think it goes to the value of
17 their testimony.

18 CO-HEARING OFFICER DODUC: All right. Go
19 ahead.

20 MS. MORRIS: Thank you.

21 WITNESS ROSENFELD: I have no expertise in
22 the funding behavior of NRDC.

23 MS. MORRIS: Okay. And do you know if NRDC
24 has investigated the impacts of in-Delta pumping and
25 diversions on fisheries in the Delta?

1 WITNESS ROSENFELD: Can you repeat that
2 question?

3 MS. MORRIS: Are you aware if NRDC has
4 investigated the impacts on in-Delta pumping and
5 diversions on fisheries in the Delta?

6 WITNESS ROSENFELD: Can you define what you
7 mean by "investigated"?

8 MS. MORRIS: Have they done any research?
9 Have they looked at any studies? Have they conducted
10 any studies? Have they contributed to any studies?

11 WITNESS ROSENFELD: The second in your list
12 there was . . .

13 MS. MORRIS: Conducted. Done any research,
14 looked at -- and funded any studies or contributed to
15 any studies?

16 WITNESS ROSENFELD: Well, research as in
17 investigation?

18 I'm pretty aware that Mr. Obegi reads
19 copiously and participates in meetings and conferences,
20 proceedings like this. And so he's quite knowledgeable
21 and that seems to follow under your scope of
22 investigation.

23 MS. MORRIS: Okay. How about -- I'm well
24 aware of the work in regards to the SWP and CVP and
25 some expert projects.

1 How about the in-Delta diversions, the roughly
2 1800 unscreened diversions in the Delta?

3 WITNESS ROSENFELD: I'm unaware of their
4 research activities with -- on those issues
5 specifically.

6 MS. MORRIS: How about the Bay Institute?
7 Have they researched any of the impacts from those
8 roughly 1800 diversions in the Delta on fisheries?

9 WITNESS ROSENFELD: I believe that there was
10 investigation of that at TBI that preceded my
11 employment there, so I can't speak with precision to
12 it.

13 Since I've come onboard, my professional
14 opinion is that the in-Delta diversions are not a major
15 driver of fisheries declines despite a lot of
16 investment, for instance, by the CALFED program in
17 tidying up those diversions.

18 MS. MORRIS: Would your opinion be the same as
19 to average inflows from in-Delta farming, that it has
20 no impact on fisheries?

21 WITNESS ROSENFELD: Can you ask that as a
22 question?

23 MS. MORRIS: It was a question.

24 Is your opinion the same that you just
25 repeated as to the in-Delta diversions as to ag runoff

1 in the Delta from Delta agricultural?

2 WITNESS ROSENFELD: I'm still not sure I
3 understand the question.

4 MS. MORRIS: You just opined that you did not
5 think that there was a major impact on fisheries from
6 in-Delta diversions, the roughly 1800 in-Delta
7 diversions; correct?

8 WITNESS ROSENFELD: That's correct.

9 MS. MORRIS: And my question is: Is it also
10 your opinion that the -- there are no impacts from ag
11 runoff in the Delta, the return flows?

12 WITNESS ROSENFELD: Ag runoff in the Delta,
13 meaning ag runoff that originates in the Delta, or ag
14 runoff that originates in the watershed and goes into
15 the Delta?

16 MS. MORRIS: The question was specifically in
17 the Delta, from Delta farming.

18 WITNESS ROSENFELD: Yeah. So, return flows
19 have an effect on the hydrology of the Delta, so, to
20 the extent that we studied hydrology in the Delta,
21 that's an effect there.

22 Return flows also carry sediment which, as
23 we've discussed at length today, is a form of turbidity
24 that is of impact to native fish species.

25 And return flows may also carry pesticides

1 which we also consider a source of concern that
2 we're -- that we pay attention to.

3 MS. MORRIS: So your opinion is that those
4 return flows may have an impact on fisheries?

5 WITNESS ROSENFELD: It's possible that ag
6 return flows would have impact on fishery.

7 MS. MORRIS: And I wanted to look at State
8 Water Resources Control Board --

9 CO-HEARING OFFICER DODUC: Hold on,
10 Miss Morris, please.

11 MS. MORRIS: OSHA Meserve for LAND.

12 I would move to strike all the questions and
13 answers that were just provided.

14 I don't see how that's relevant to this
15 hearing and the hearing issues, whether there may be
16 other sources of problems in the Delta, as Ms. Morris
17 seems to be indicating with her questions.

18 We're here on a Water Rights Petition, which
19 is a proposal, and it seems the relevant material is
20 what the effect of that proposal would be on the
21 existing conditions, not what any of the other
22 stressors would be.

23 CO-HEARING OFFICER DODUC: Mr. Mizell.

24 MR. MIZELL: Yes.

25 I'd just like to point to the ruling that came

1 out yesterday indicating that this is indeed broader,
2 and we are looking at what is an appropriate Delta Flow
3 Criteria on this Project that would require us
4 apparently to consider what the other contributors are
5 to the decline of the species at this point, as well as
6 what the status of those species are and what
7 contribute to the change in the status since the last
8 time that the Board made a decision on that.

9 CO-HEARING OFFICER DODUC: Thank you,
10 Mr. Mizell.

11 Overruled, Miss Meserve.

12 MS. MORRIS: Thank you.

13 So, again, looking at State Water Resources
14 Control Board 107, which is the California WaterFix
15 ITP.

16 (Exhibit displayed on screen.)

17 MS. MORRIS: Yesterday, you testified that you
18 weren't familiar with the biological criteria in
19 Section 9.7, Biological Criterion, specifically 2, of
20 the ITP, correct?

21 And it's shown on the screen, too, if you need
22 to look at it.

23 WITNESS ROSENFELD: Give me a minute to read
24 it, please.

25 (Examining document.)

1 WITNESS ROSENFELD: Okay. I've read it.

2 MS. MORRIS: Okay. Do you need me to repeat
3 the question?

4 WITNESS ROSENFELD: Yes, please.

5 MS. MORRIS: Yesterday, you testified that you
6 were not familiar with this biological criteria and,
7 specifically, Biological Criterion 2 in Section 9.7 on
8 Page 172; correct?

9 WITNESS ROSENFELD: I don't recall that
10 exchange.

11 MS. MORRIS: Okay. So are you familiar with
12 it?

13 WITNESS ROSENFELD: I'm reading it now.
14 It's refreshed my memory of -- of -- of this,
15 but I don't -- I mean . . .

16 MS. MORRIS: Did you read it before you
17 prepared your testimony?

18 WITNESS ROSENFELD: Yes, I did.

19 MS. MORRIS: Okay. And did you take it into
20 consideration in your opinions that were -- that you
21 expressed in your testimony?

22 WITNESS ROSENFELD: Yes, I did.

23 MS. MORRIS: And -- And yesterday, you also
24 testified that, in -- in -- Sorry. Strike all of that.
25 It's the running from the airport.

1 Let me start again.

2 Yesterday, you also testified, based on
3 questions from Miss Ansley, that the criterion say
4 "shall."

5 Specifically, Criterion 2 says, "The Permittee
6 shall."

7 And those criterion were mandatory; correct?

8 WITNESS ROSENFELD: I remember that exchange,
9 yes.

10 And, similarly, in Biological Criterion 1,
11 does it also say, "Permittee shall"?

12 WITNESS ROSENFELD: (Examining document.)

13 Yes, it does.

14 MS. MORRIS: And also looking at Biological
15 Criterion 3, doesn't it say, "Permittee shall"?

16 WITNESS ROSENFELD: Yes.

17 MS. MORRIS: I have no further questions.

18 Thank you for accommodating our schedule.

19 CO-HEARING OFFICER DODUC: Thank you,
20 Miss Morris.

21 Thank you, Miss Sheehan.

22 And that concludes cross-examination for
23 Dr. Rosenfield.

24 Do you have redirect, Mr. Obegi?

25 MR. OBEGI: In interest of his health, I do

1 not.

2 And, so, if I may --

3 CO-HEARING OFFICER DODUC: At this time, does
4 that conclude your case in chief?

5 And, if so, will you move your exhibits into
6 the record?

7 MR. OBEGI: It does.

8 And at this time, I would like to move the
9 following exhibits into evidence:

10 NRDC-1 through NRDC-10; NRDC-12 through
11 NRDC-56; NRDC-58 through NRDC-64; State Water Resources
12 Control Board 24; 69 to 82; 85, 63 -- sorry, not in
13 order -- and 103.

14 CO-HEARING OFFICER DODUC: And, Mr. Obegi,
15 yesterday you mentioned preparing an errata for
16 Dr. Rosenfield's testimony.

17 MR. OBEGI: Yes. And so my intent is that
18 tomorrow I will prepare an errata that includes the
19 correct citation for the Klimley report, makes the
20 two -- strikes the two provisions from his testimony
21 that were stricken, and submit it with an updated
22 Exhibit Index.

23 CO-HEARING OFFICER DODUC: All right. Any
24 objections?

25 MR. MIZELL: (Shaking head.)

1 CO-HEARING OFFICER DODUC: So received into
2 the record.

3 (Natural Resources Defense Council, The Bay Institute,
4 and Defenders of Wildlife Exhibits NRDC-1 through
5 NRDC-10, NRDC-12 through NRDC-56, NRDC-58 through
6 NRDC-64 received in evidence)
7 (State Water Resources Control Board Exhibits SWRCB-24,
8 SWRCB-63, SWRCB-69 to SWRCB-82, SWRCB-85 & SWRCB-103
9 received in evidence)

10 CO-HEARING OFFICER DODUC: Thank you,
11 Mr. Obegi and Dr. Rosenfield. Thank you very much.

12 Best wishes to your continued recovery.

13 WITNESS ROSENFELD: Thank you so much.

14 CO-HEARING OFFICER DODUC: Mr. Jackson, do you
15 have Mr. Budgor here?

16 MR. JACKSON: Yes, I do.

17 CO-HEARING OFFICER DODUC: Excellent.

18 Thank you, Mr. Budgor, for bearing with us the
19 last few days. I understand you've been here waiting
20 patiently.

21 WITNESS BUDGOR: Well, you know, infinity is a
22 long time.

23 (Laughter.)

24 CO-HEARING OFFICER DODUC: And while
25 Mr. Budgor and Mr. Jackson are setting up, may I get

1 estimates of cross-examination for Mr. Budgor?

2 MR. MIZELL: Tripp Mizell, DWR.

3 We estimate 45 minutes.

4 CO-HEARING OFFICER DODUC: Aha.

5 Miss Morris?

6 MS. MORRIS: I think maybe 20 minutes.

7 CO-HEARING OFFICER DODUC: This is longer than
8 I anticipated. We were going to adjourn at 5 o'clock.

9 We need to double-check on the availability of
10 this room as well as the audio recording.

11 Miss Meserve.

12 MS. MESERVE: I would like to reserve 10
13 minutes for cross, although I could forego it if it
14 meant the difference between Dr. Budgor getting home.

15 CO-HEARING OFFICER DODUC: Well, since he has
16 been waiting patiently the last few days, I would
17 prefer that he not have to come back tomorrow.

18 And --

19 MS. GAYLON: We can go until 6:00.

20 CO-HEARING OFFICER DODUC: All right. We will
21 stay to accommodate Mr. Budgor since he has been so
22 accommodating in waiting for us.

23 WITNESS BUDGOR: Thank you very much.

24 CO-HEARING OFFICER DODUC: Mr. Budgor, if I
25 could ask you to stand and raise your right hand.

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Aaron Budgor,
called as a witness by California
Sportfishing Protection Alliance,
California Water Impact Network, and
AquAlliance, having been duly sworn, was
examined and testified as follows:

CO-HEARING OFFICER DODUC: Thank you.

And please make sure your microphone is on.

There's a push and then the green light should come on.

WITNESS BUDGOR: Okay. Can you hear me?

DIRECT EXAMINATION BY

MR. JACKSON: Dr. Budgor, is CWIN-202 a true
and correct copy of your testimony in this matter?

WITNESS BUDGOR: Could you pull that up and
make sure that I'm looking at the same thing?

(Exhibit displayed on screen.)

MR. JACKSON: Excuse me.

Is CWIN-202 a true and correct copy of your
qualifications?

WITNESS BUDGOR: Yes, it is.

MR. JACKSON: Is CWIN-210, what we call the
Santa Barbara Report, a true and correct copy of the
testimony that you have to give in this case?

WITNESS BUDGOR: Yes. I'll be talking to that

1 particular exhibit.

2 MR. JACKSON: Thank you.

3 Is -- Did you work on the testimony that was
4 CWIN-207 that has Arve Sjovold's name on it?

5 WITNESS BUDGOR: Yes. I was involved in the
6 preparation of this report, gathering of the data, and
7 supervising what was written.

8 MR. JACKSON: And you are a member of C-WIN's
9 Board of Directors?

10 WITNESS BUDGOR: Yes, I am.

11 MR. JACKSON: Are you authorized to testify on
12 behalf of C-WIN?

13 WITNESS BUDGOR: Yes, I am.

14 MR. JACKSON: Would you summarize your
15 testimony, please.

16 WITNESS BUDGOR: Yes.

17 So, I'll be reading a report for about 20
18 minutes, maybe 17 if I can get through this properly.
19 And it's basically derived from the 210 document, so
20 there's nothing in my report that is in variance with
21 what you see in the Santa Barbara experience
22 documentation.

23 Prior to the 1987-1992 drought, South Coast
24 water purveyors had relatively small budgets. Water
25 supply costs represented less than 10 percent of the

1 budgets, and local sources provided all the water.

2 The drought changed everything. At the peak
3 of the drought, all South Coast water purveyors,
4 believing in the State's projections on the reliability
5 of the State water delivery system, voted to import
6 state water at enormous construction costs. The South
7 Coast is now living with the consequences of that
8 decision. Some very important lessons have been
9 learned relating to costs, no benefits, and paper
10 water.

11 Costs.

12 Due primarily to the region's connection to
13 the State Water Project -- SWP as an acronym -- South
14 Coast Water District budgets have increased
15 substantially.

16 Upon emerging from the 1987-1992 drought, the
17 Water Districts were immediately faced with increasing
18 cost burdens for the construction of the Coastal
19 Aqueduct and the local aqueduct necessary for the
20 importation of state water. Rates had to be maintained
21 at high levels, and raised in many cases.

22 When the drought ended and mandatory
23 conservation restrictions were lifted, the demand
24 remained depressed due to the high water rates that
25 were still in effect and some instilled conservation

1 habits.

2 Before the drought, water use was not
3 necessarily sensitive to water costs, but now the
4 higher costs have caused the demand to decrease.

5 Increased rates are met with commensurate
6 decreases in customer water demand such that the
7 districts have resorted to large increases in the fixed
8 charges for water services.

9 By way of example, the budget for the
10 Montecito Water District went from \$1 million in the
11 early 1990s before deliveries of state water, to
12 14 million in 2016. For 2017, the budget is
13 \$21 million, an extraordinary increase of 50 percent.

14 Because of its inherent unreliability, there
15 are no benefits redounding from the importation of
16 state water, especially during droughts. Because
17 severe droughts are often statewide phenomena, state
18 water deliveries typically are curtailed at the very
19 time they are needed most on the South Coast. The
20 recent drought demonstrates the unexpected and
21 unplanned water delivery and reliability failure
22 exceedingly well.

23 The additional cost to agencies and ratepayers
24 from the construction of the Twin Tunnels will have a
25 negative effect on water supply and demand given the

1 unreliability of delivery, lack of new water sources,
2 and higher rates required to cover costs, plus more
3 stringent conservation measures.

4 There is a third category beyond costs and
5 benefit analyses that deserves just as much attention
6 in the way it impacts local Water Districts, and that
7 is paper water.

8 The problem for local Water Districts is
9 two-fold: For water supply planning, a District needs
10 a confident estimate of the amount of water it can
11 expect. An average delivery amount will not do,
12 especially if that District has no year-to-year storage
13 to help equalize and offset delivery variances.

14 A shortfall in delivery against the
15 expectation means that the Water Agency must search for
16 supplemental water on the spot market at exorbitant
17 prices. This was and is the situation on the South
18 Coast during the continuing drought.

19 The second impact of paper water deals with
20 the local Districts' use of expected deliveries in the
21 planning and development process.

22 The long-term water supply plans of Water
23 Districts are used to determine the numbers of new
24 hookups that can be allowed. If those water supply
25 plans are based on unrealistic expectations of

1 deliveries, it is difficult to manage growth and
2 provide sustainable water supplies.

3 And in cases where a District wishes to sell
4 off some of its SWP allocation, because of paper water,
5 it is difficult to assign a value to the transaction
6 and the amount of real water that can be relied on in
7 the transfer.

8 This is a continual difficulty on the South
9 Coast and paper water is at the heart of these
10 difficulties.

11 Costs of Santa Barbara County SWP water.

12 The major customers in Santa Barbara County
13 for water delivered by the SWP's California Aqueduct
14 are the City of Santa Barbara, Montecito Water
15 District, Carpinteria Valley Water District, and Goleta
16 Water District.

17 If you would go to Page 20 of this exhibit
18 that you have here, please.

19 (Exhibit displayed on screen.)

20 WITNESS BUDGOR: So this table presents a
21 summary profile of the entities included in the scope
22 of this report.

23 As can be seen in the last two -- last two --
24 last two -- not columns but rows, SWP deliveries are
25 small fraction of Table A allocations and small

1 fractions of deliveries.

2 In fact, let me just say that, for the City of
3 Montecito, for the unincorporated city, we're looking
4 at allocations of about 3,000 acre-feet, and just in
5 2010, that number is 541.

6 But having -- There's another table, I believe
7 it's Table 2, which shows a further delineation of
8 this, and I believe that's on the following page.

9 (Exhibit displayed on screen.)

10 WITNESS BUDGOR: Maybe not.

11 (Exhibit displayed on screen.)

12 WITNESS BUDGOR: Okay. Well, I'll come back
13 to that.

14 But basically what it shows is that for a
15 five-year -- five-year timeframe, that these numbers
16 have varied anywhere from 0 to 20 percent.

17 So the numbers are always lower than what the
18 expected deliveries should have been and it hurts us
19 dramatically as far as the pocketbook is concerned.

20 Because the South Coast districts are at the
21 end of the local pipeline, their proportionate costs of
22 the SWP are much higher. The consequences of this
23 higher cost, together with the higher interest rate,
24 causes the South Coast Water Districts' payments for
25 the local aqueduct to be nearly equal to that of their

1 Coastal Aqueduct costs.

2 The high cost imposed by the SWP on the South
3 Coast districts exact a severe penalty for District
4 priorities. For example, a report by the Santa Barbara
5 County 2006-2007 Grand Jury noted that the Carpinteria
6 Valley Water District is paying half of its
7 \$10 million-per-year budget for non-operational
8 expenses; i.e., those primarily related to the purchase
9 and delivery of SWP water.

10 Many other Santa Barbara County Water
11 Districts are suffering from the high cost of SWP
12 water. Repayment of SWP debt along with SWP ongoing
13 operation and maintenance costs comprise the dominant
14 costs for each Water Agency.

15 Montecito's 2012-2013 adopted budget states
16 that 45 percent of its operating budget and 39 percent
17 of its total budget is required to pay for its SWP
18 costs.

19 Yet the volume of water these districts draw
20 from the SWP in normal and wetter years is minimal
21 compared to other available local sources such as the
22 Cachuma Project.

23 The high cost of the SWP debt, combined with
24 reduced water sales, strains District budgets,
25 compromises District ability to maintain adequate

1 reserves, perform system upgrades and needed repairs.
2 As a result, maintenance and upgrades are backlogged or
3 must be paid out of dwindling reserve funds. C-WIN
4 believes District defaults on SWP payments are a real
5 threat for many of these Districts.

6 SWP reliability, effective costs, and residual
7 rate structure section.

8 I will now make some comments on SWP
9 reliability, effective costs, and residential rate
10 structure.

11 Before the 1991 election, voters were promised
12 that the SWP contracts would be 97 percent reliable,
13 meaning 97 percent of Table A water could be delivered.
14 This promise has never been fulfilled.

15 Over the past 18 years, the four South Coast
16 districts received approximately 28 percent of the
17 Table A allocations.

18 2014 was a very dry year for the entire state.
19 All SWP Contractors received only 5 percent of the
20 Table A allocations of state water.

21 The availability of state water under present
22 operational rules is limited year to year by the amount
23 of runoff experienced in each year.

24 Statistically, present operations can only
25 provide a small fraction of Table A amounts during

1 droughts.

2 DWR has never performed a proper analysis to
3 determine a truly reliable level of delivery. Without
4 such analysis, it is fruitless to propose structural
5 solutions to the Delta's problems given that
6 precipitation is the main limiting factor.

7 The SWP's difficulties in delivering full
8 Table A allocations are exacerbated due to Federal and
9 State Wild and Scenic River designations for most North
10 Coast Rivers, thereby ending further damming of those
11 rivers and rejection by California voters in 1982 of
12 the bond measure to fund the Peripheral Canal due to
13 potential environmental devastation to the Bay and the
14 Delta.

15 Without the availability of these sources,
16 there is no likelihood of meeting Table A amounts.

17 Two independent analyses of Northern
18 California watersheds, one by C-WIN and the other by
19 the University of California, Davis, have concluded
20 that consumptive water right claims are over five times
21 more than the available water supply.

22 This inaccurate and incomplete accounting of
23 water rights has made the State ill-equipped to satisfy
24 growing societal demands for water supply reliability
25 and healthy ecosystems.

1 The effective unit -- that is, acre-foot --
2 costs of SWP water, that -- what I define is the cost
3 of supply divided by the actual water delivered -- is
4 highly variable and has led to costs considerably
5 higher than those estimated for the 1991 ballot
6 measure.

7 This is because the water agencies must pay
8 the fixed costs for the amount of water contracted
9 regardless of the amount delivered annually. Even if
10 no SWP water is delivered, these fixed costs must be
11 paid.

12 C-WIN has determined that the Central Coast
13 Water Authority -- CCWA -- estimated unit costs for SWP
14 water on a per-acre-foot basis are often greatly
15 understated because CCWA bases cost estimates on full
16 delivery of Table A allocation amounts that have been
17 shown to be a fictitious delivery amount.

18 Full Table A allocations have never been
19 delivered by the SWP and are unlikely to ever be
20 delivered because of limited availability in times of
21 drought and lack of need during wet years when the
22 water is available.

23 Table 2, which is on Page 28 --

24 (Exhibit displayed on screen.)

25 WITNESS BUDGOR: -- confirms the very high

1 effective unit cost and exposes the extraordinary high
2 cost during droughts when deliveries are curtailed,
3 factors of 40 to 60 times greater than water derived
4 from Lake Cachuma.

5 Further, the Monterey amendments to the SWP
6 contracts in 1995 eliminated the urban preference and
7 safeguard for Table A deliveries, a primary factor
8 causing lower deliveries during drought years and
9 consequent high unit costs. The urban preference
10 mandated in times of drought water delivery for people
11 before agriculture.

12 C-WIN investigated retail water costs for an
13 average single-family residential customer by obtaining
14 data from updated Urban Water Management Plans and
15 current District Fee Schedules for the four water
16 agencies of the Santa Barbara coastal plain.

17 All four Water Districts have responded
18 similarly in their efforts to increase revenues
19 following high SWP costs.

20 Prior to the 1987-1992 drought, unit rates and
21 service charges were substantially lower, as were the
22 consequent water bills of the customers.

23 However, these rates are not as high as would
24 be indicated by the effective unit costs of SWP
25 deliveries. That is due to the fact that the bulk of

1 the delivered retail water is supplied by much lower
2 cost sources such as Lake Cachuma. Nonetheless,
3 customer bills are several times higher than before the
4 drought.

5 The current drought promises further rate
6 increases due to the need to procure supplemental
7 purchased water at prevailing prices which are much
8 higher than the variable cost of SWP water.

9 My last section is on the impact of Twin
10 Tunnels with respect to estimated costs and lack of
11 benefits.

12 Presently, the Twin Tunnels are in the very
13 early stages of definition as a Project. Much planning
14 and preliminary engineering work is yet to be done to
15 define a project from which competent cost estimates
16 can be made.

17 Currently, the SWP and the Central Valley
18 Project -- CVP -- Contractors have spent 280 million on
19 planning to date and estimate they will cost an
20 additional 1.2 billion to get the Project shovel-ready
21 with 90 percent of the required engineering still to be
22 completed.

23 Initially, the Bay-Delta Conservation
24 Plan/California WaterFix cost estimates for the
25 Tunnels' construction, excluding financing costs, were,

1 in 2014 dollars, \$17.2 billion.

2 At the 10 percent engineering design, the
3 construction cost estimate grew to 20.3 billion in 2017
4 dollars according to DWR.

5 As cost overruns on large construction
6 projects are not uncommon, the consulting firm,
7 ECONorthwest, using San Diego Water Authority
8 estimates, raised the cost estimate to \$38 billion.

9 For the purpose of subsequent discussion,
10 these two estimates are defined as low and high.

11 Financing would be obtained in a manner
12 similar to the Bay-Delta Conservation Plan by selling
13 revenue bonds. We assume the bonds have a period of
14 capitalized interest and a 40-year payback period at a
15 rate of approximately 6 percent.

16 As the Proposed Project would be built under
17 the authority of SWP contracts, the Twin Tunnels'
18 financing costs likely would be part of the Delta water
19 cost.

20 Allocation of costs to the State Water
21 Contractors can be done in two ways: Through the Santa
22 Barbara County Flood Control and Water Conservation
23 District's share of water allotment, or from share of
24 total payments to the SWP.

25 Using the former method, either 1.1 percent or

1 3.4 percent, respectively, of the SWP's WaterFix cost
2 is allocated to Santa Barbara County Flood Control and
3 Water Conservation Districts.

4 These two percentages were used in estimating
5 the impacts on Santa Barbara County SWP Contractors.
6 Results are shown in Table 4.6, which is Page 34 --

7 (Exhibit displayed on screen.)

8 WITNESS BUDGOR: -- with the largest
9 shareholder in CCWA, Santa Maria, included in the
10 breakdown of the last two tables for completeness.

11 Invoices to the Flood Control District will
12 show only a single additional charge for the county's
13 share of the Twin Tunnel financing costs. These will
14 be passed on to CCWA participants based on
15 proportionate shares of Table A amounts.

16 And as you can see, based on the available
17 information on the Project, C-WIN has estimated Santa
18 Barbara's county's annual payment with interest and
19 principal on these construction costs will range from
20 \$7.7 million per year to \$46.4 million per year. The
21 South Coast District's share will range from \$2 million
22 per year to almost \$15 million per year.

23 These estimates are based on a 55-to-45
24 division in costs between the SWP and the CVP.

25 With recent developments -- And go back to the

1 table -- Table 5. You've got it there.

2 With recent developments, it now seems that
3 CVP will not be participating. Westlands Water
4 District has voted not to support the tunnels because
5 of the untenable costs to its farmers.

6 With the withdrawal of Westlands, the entire
7 CVP participation which was to be 45 percent of the
8 entire Project financing is now in doubt.

9 So Table 6, which is on Page 37 --

10 (Exhibit displayed on screen.)

11 WITNESS BUDGOR: -- shows the cost burdens at
12 local Water Districts would be required to share with
13 the CVP not participating under various assumptions of
14 Project costs, high or low, at the State percentage
15 allocations of 1.1 percent and 3.4 percent.

16 Costs to county nearly double.

17 So C-WIN sees no benefit for Santa Barbara
18 County water users from the Twin Tunnels, only
19 drawbacks.

20 Project Proponents claim the Twin Tunnels will
21 improve the State's ability to capture and store the
22 excess runoff --

23 (Timer rings.)

24 WITNESS BUDGOR: -- that occurs in wet years.

25 I need about two minutes.

1 Wet years comprise 44 percent of the 100-year
2 runoff record as shown in the CWIN-210 Appendix B.
3 However, the Twin Tunnels Project involves no new
4 storage.

5 Project supporters claim groundwater basins in
6 the San Joaquin Valley can be used to store significant
7 amounts of water.

8 But these basins are neither SWP nor CVP
9 facilities. Storing water there would amount to a
10 privatization of Project waters resulting in probable
11 legal challenges.

12 Since there is no public storage component
13 south of the Delta as part of the Project, it is
14 inconceivable that the tunnels will deliver any new
15 water.

16 It could provide the capability to continue
17 deliveries of SWP and CVP water south in the event of
18 possible levee failures due to earthquakes, although
19 the integrity of the delivery system itself may be
20 jeopardized by such an event.

21 Its merits as a hedge against climate change
22 and consequent sea-level rise are even less certain.

23 So my concluding remarks are: C-WIN has
24 documented the fundamental problems associated with the
25 importance and distribution of SWP paper water.

1 The Twin Tunnels Project promises more debt
2 with no additional water or increase in reliability to
3 the participating South Coast water agencies.

4 The administration and supporters intend to
5 build them without a vote of the people who must pay
6 for them.

7 Our findings have shown ominous fiscal
8 consequences for Santa Barbara County generally and for
9 the South Coast Water District specifically.

10 Cost estimated for construction of Twin
11 Tunnels/California WaterFix would add to the burden
12 forcing these agencies ever closer to insolvency.

13 Meanwhile, ratepayers are responding to the
14 price elasticity of supply and demand by using less
15 water, resulting in declining District revenue but an
16 ever-increasing cost to ratepayers.

17 Santa Barbara County needs its financial
18 resources to explore and create alternative water
19 conservation projects, to include recycling and storm
20 water recapture and new water local resources such as
21 ocean and groundwater desalination.

22 And that ends my testimony.

23 CO-HEARING OFFICER DODUC: Thank you very
24 much, Dr. Budgor.

25 MR. JACKSON: Yes. That -- That ends his

1 testimony.

2 And I notice that Mr. Smith is available but
3 there is substantial cross-examination.

4 CO-HEARING OFFICER DODUC: There is.

5 MR. JACKSON: So, Felix, can you come back
6 tomorrow?

7 WITNESS SMITH: Yes.

8 MR. JACKSON: Okay.

9 CO-HEARING OFFICER DODUC: Mr. Mizell.

10 MR. MIZELL: Yes. I noticed that --

11 CO-HEARING OFFICER DODUC: I'm sorry. Is your
12 microphone on?

13 MR. MIZELL: It is. Should I get closer to
14 you?

15 I didn't notice that Mr. Budgor was reading
16 from his statement, so maybe this is a quick objection.

17 But I don't believe that privatization of the
18 water supply and development of South-of-Delta storage
19 as a condition of this Project was included in his
20 written testimony.

21 I'm happy to be proven wrong if he can point
22 to me -- point me to where in his written testimony --
23 or in the written testimony that he is . . . here to
24 testify about, where in that testimony he makes these
25 statements.

1 WITNESS BUDGOR: Okay. So, if you give me a
2 second, I'll try to find the proper section.

3 CO-HEARING OFFICER DODUC: While you're
4 looking.

5 Candace, how are you doing?

6 THE REPORTER: Fine.

7 CO-HEARING OFFICER DODUC: Do you want to take
8 a short break before DWR begins their 45-minute cross?

9 THE REPORTER: (Nodding head.)

10 CO-HEARING OFFICER DODUC: Okay. Why don't we
11 take a short break now so Dr. Budgor can look up that
12 reference.

13 And when we return, let's make it 4:30. Is
14 that okay, Candace?

15 THE REPORTER: Um-hmm.

16 CO-HEARING OFFICER DODUC: All right. We'll
17 return at 4:30.

18 (Recess taken at 4:23 p.m.)

19 (Proceedings resumed at 4:30 p.m.):

20 CO-HEARING OFFICER DODUC: All right. We are
21 back in session.

22 And I believe there's been a switch and
23 Miss Morris will conduct her cross first.

24 WITNESS BUDGOR: Do you want to clear up the
25 objection?

1 CO-HEARING OFFICER DODUC: Oh, yes. I'm
2 sorry.

3 Dr. Budgor.

4 WITNESS BUDGOR: So it's in Page 29 in the
5 paragraph stating "Project Proponents" at the bottom.

6 And you see right at the end in bold,
7 "Privatization of Project Waters."

8 MR. MIZELL: Thank you.

9 So that's for your statement regarding
10 privatization.

11 WITNESS BUDGOR: That is correct, yes.

12 MR. MIZELL: Is there a citation for your
13 statement regarding the condition for constructing
14 South-of-Delta storage?

15 WITNESS BUDGOR: Basically, the way this thing
16 worked was, is that we had had discussions with a large
17 number of people who looked at this Project in great
18 detail.

19 MR. MIZELL: Yes, sir.

20 WITNESS BUDGOR: C-WIN and the C-WIN Board
21 actually makes up a lot of people who know about this,
22 so we're getting information from them.

23 MR. MIZELL: And where in the statement is
24 that statement?

25 WITNESS BUDGOR: What statement?

1 MR. MIZELL: Where -- The one about the
2 condition needing to be South-of-Delta storage
3 construction.

4 WITNESS BUDGOR: Oh, okay.

5 MR. MIZELL: Just for the record's purposes, I
6 withdraw the objection.

7 WITNESS BUDGOR: And I'm going to have to --
8 Oh, yeah.

9 So it's in the previous paragraph, SWP. So
10 it's the . . .

11 Let's see. Eliminates the privatization. No
12 guarantees. So, actually, it is.

13 And this is (reading):

14 "Without a complementary SWP storage
15 element south of the Delta, the Twin
16 Tunnels provide no benefit to SWP
17 Contractors."

18 It's in the same paragraph.

19 MR. MIZELL: I'm -- I'm reading that paragraph
20 with you, sir. I do not see any statement saying that
21 there should be a condition for South-of-Delta storage
22 construction.

23 WITNESS BUDGOR: Okay. So let's -- So the
24 SW -- Okay. Go up.

25 (Exhibit displayed on screen.)

1 WITNESS BUDGOR: No, no, no, not that far.

2 (Exhibit displayed on screen.)

3 WITNESS BUDGOR: Yeah.

4 Let's see here. So it should be in -- Okay.

5 Try going down again. I'm still having problems
6 finding this.

7 (Exhibit displayed on screen.)

8 WITNESS BUDGOR: Further down.

9 (Exhibit displayed on screen.)

10 WITNESS BUDGOR: Okay. Stop.

11 So, in the paragraph beginning, "The SWP did
12 acquire," go to the last sentence.

13 So, again, in bold (reading):

14 "Without a complementary SWP storage
15 element south of the Delta, the Twin
16 Tunnels provide no benefit to SWP
17 Contractors."

18 MR. MIZELL: Thank you very much.

19 I withdraw my objection.

20 CO-HEARING OFFICER DODUC: Thank you,
21 Dr. Budgor.

22 MS. MORRIS: Thank you.

23 Good afternoon, Dr. Budgor. Am I saying that
24 correctly?

25 WITNESS BUDGOR: You certainly are.

1 MS. MORRIS: Okay. Thank you.

2 WITNESS BUDGOR: It's a nice Latvian name.

3 I'm kidding.

4 CROSS-EXAMINATION BY

5 MS. MORRIS: I wanted to focus on a couple of
6 your statements, and specifically in the Santa Barbara
7 Report, CWIN-210, Page 12.

8 And it's regarding your statements relating to
9 Table A deliveries of 28 percent of allocation since
10 state water began arriving in 1998.

11 So that's the context of this line of
12 questioning.

13 WITNESS BUDGOR: Okay.

14 MS. MORRIS: Do you have the data to back up
15 your claim that only 28 percent of the full contract
16 amounts was -- were available?

17 WITNESS BUDGOR: Yes. In this document -- let
18 me tell you -- there is a figure that actually has
19 graphs of the information that you're looking for.

20 And it is from CCWA, and it's the SWP
21 reliability and effective unit costs.

22 So it would be Figure 6.

23 MS. MORRIS: What page?

24 WITNESS BUDGOR: So I'm -- Yeah.

25 Unfortunately, I'm using an older version.

1 MS. MORRIS: Oh, it's on, I believe, Page 26.

2 WITNESS BUDGOR: Okay.

3 (Exhibit displayed on screen.)

4 MS. MORRIS: Great.

5 WITNESS BUDGOR: Yes. So this data is from
6 CCWA.

7 MS. MORRIS: Wait. Nope. We're good.

8 WITNESS BUDGOR: Okay.

9 MS. MORRIS: Because I want to be brief so I
10 can get you out of here.

11 WITNESS BUDGOR: Yeah.

12 MS. MORRIS: So -- okay. Thank you for
13 pointing that out.

14 And I just want to work through, if you're
15 familiar with the State Water Project allocation
16 process.

17 WITNESS BUDGOR: Yes, I am.

18 MS. MORRIS: Okay. So you understand that DWR
19 says, "CCWA, under the contract with Santa Barbara
20 County, you have X amount of water available."

21 Correct?

22 WITNESS BUDGOR: Right.

23 MS. MORRIS: And then the Contractor says, "I
24 only want to take X amount," which may be less than the
25 amount offered.

1 Do you understand that?

2 WITNESS BUDGOR: I certainly do.

3 MS. MORRIS: Okay. And do you know -- Have
4 you ever looked at those numbers for the -- compared
5 the numbers for the four CCWA entities that you came up
6 with the 28 percent number, have you looked at what
7 they were offered versus what they decided to take?

8 WITNESS BUDGOR: Yeah. We have all of those
9 numbers and -- But what my testimony really had to do
10 with was more regarding the reliability and the cost
11 values.

12 So -- And I fully understand that, indeed,
13 people have a -- can basically come back and say,
14 "Well, I know this is my allocation. I'll pay for it,
15 but this is what I want."

16 MS. MORRIS: And you understand that, from
17 1998 to 2015, the four entities that you have cited in
18 your report were offered more water than they decided
19 to take; correct?

20 WITNESS BUDGOR: Well, up to the allocation,
21 that's correct, yeah.

22 MS. MORRIS: The allocation is different than
23 the amount of water delivered.

24 Do you understand that?

25 WITNESS BUDGOR: I . . . I understand that.

1 But based on our conversations with the
2 Contractors themselves, they're basically saying, "We
3 have an opportunity of getting water from multiple
4 sources. And based on the cost of what we can actually
5 pay and what we can afford, we make some decisions on
6 how we're going to do that."

7 But the reality is, is that the costs that
8 we're getting based on the allocation -- So, in other
9 words, if there's a maximum allocation, you can't get
10 more than the maximum.

11 MS. MORRIS: Right. I understand that.

12 But let's go back. Because what I'm trying to
13 get at is: It's true that, for example, Montecito has
14 been offered more water under their allocation for
15 Table A, and they have decided not to take delivery of
16 all of that water; correct?

17 WITNESS BUDGOR: I'm not aware of that.

18 MS. MORRIS: Really? Okay.

19 WITNESS BUDGOR: I'm not aware of that.

20 MS. MORRIS: Then let's -- let's look at your
21 statement, because I think, on Page 12, you're
22 conflating two issues in my mind.

23 (Exhibit displayed on screen.)

24 MS. MORRIS: Same exhibit, Page 12, and it's
25 the top.

1 And you're saying that only 28 percent of the
2 amount was delivered, but then you go on to compare
3 that to the expected delivery of 97 percent of contract
4 amounts.

5 You see that?

6 WITNESS BUDGOR: Yeah. I do see that, yes.

7 MS. MORRIS: Okay. And, if -- Miss Gaylon, if
8 you could pull up DWR -- Excel spreadsheet -- 1164.

9 Oh, it's .pdf.

10 (Exhibit displayed on screen.)

11 MS. MORRIS: Perfect.

12 And this is -- I'll represent to you this is a
13 compilation of deliveries for CCWA from 1997 when water
14 was first delivered to -- through the South Coast --
15 through the Coastal Aqueduct through 2017.

16 And if you -- Could you blow it up because I'm
17 really focusing on that far left column, and it's
18 pretty difficult to read.

19 (Exhibit displayed on screen.)

20 MS. MORRIS: There we go.

21 If you look at the years, the DWR allocation,
22 and you look through each of those years, you can see
23 that the average at the bottom is 67 percent; correct?

24 WITNESS BUDGOR: So, what you're telling me
25 is, is that in 1998, you got 100 percent and yet the

1 source for CCWA said it was something less than a full
2 percentage. It was probably down at the 15 percent
3 level.

4 So I'm trying to understand that.

5 MS. MORRIS: Yeah, I am telling you that.
6 Because the difference is what was allocated and
7 available for taking, and then if you look at the
8 far -- the middle column, "Unused Left on the Table,"
9 that shows the amount of water that was available
10 under -- for the State Water Project water deliveries
11 that was not taken.

12 And, in particular, it was not taken by the
13 four entities that you reference in your report.

14 So, are you familiar -- I want to go back
15 again.

16 Are you -- Are you sure you're familiar with
17 how DWR allocates and how water is delivered under the
18 contracts?

19 WITNESS BUDGOR: Yeah, I am.

20 And all I can tell you is, is that we asked
21 for information from all the Water Contractors, and
22 from CCWA, and the information that we were given is
23 the information that I'm showing you.

24 MS. MORRIS: Okay. And then let's go back to
25 Figure 6, then --

1 WITNESS BUDGOR: Okay.

2 MS. MORRIS: -- on Page 26 of CWIN Exhibit
3 210.

4 Then I believe you're conflating concepts
5 again because it says, "Full Table A deliveries" versus
6 "Average Table A deliveries."

7 And Full Table A implies that that is what is
8 available, not what was taken, versus what was actually
9 delivered.

10 Do you understand that?

11 WITNESS BUDGOR: I do understand that.

12 MS. MORRIS: So is it your testimony that --
13 that in all years from 1997 through current, that the
14 four entities that you have referenced in this report
15 have taken all available water that they could take
16 from the State Water Project?

17 WITNESS BUDGOR: What I'm testifying to is
18 that, based on the Full Table A deliveries, which was
19 expected to be delivered, this is what they received.

20 MS. MORRIS: There's a difference between
21 allocation --

22 WITNESS BUDGOR: I understand.

23 MS. MORRIS: -- and delivery.

24 You understand the distinction.

25 WITNESS BUDGOR: I do.

1 MS. MORRIS: Okay. So let me go back and ask
2 my question, because I don't think you answered it.

3 Is it your contention that the four entities
4 that you have referenced in the Santa Barbara Report
5 have taken all available State Water Project water that
6 was made available to them by DWR from 1997 through
7 current year?

8 WITNESS BUDGOR: I -- I can't answer that. I
9 just don't know the answer to that.

10 But what I -- All I'm -- All I'm suggesting
11 over here is, based on the information we were
12 provided, that there was an -- there was a contracted
13 Table A amount, which you pay for at 100 percent, and
14 then the amount that you are actually being given,
15 like, for example, to my understanding, 2018, DWR is --
16 is allocating 20 percent of the total amount.

17 So, if that's the case -- and last year was
18 60 percent, and the previous year was 60 percent --
19 then that is the maximum you can get.

20 So, if you then take the ratio of what that
21 maximum is divided by the total allocation, that is the
22 effective unit cost. That's what I testified to.

23 MS. MORRIS: I understand that's your
24 testimony.

25 But my issue is, in your -- in your testimony,

1 and specifically in -- on Page 12, you are implying
2 that the DWR or the State Water Project reliability is
3 28 percent.

4 And I don't believe that you can make that
5 statement without understanding what amount was
6 offered, which you've already testified, versus what
7 was delivered.

8 And you just said you don't know that
9 information; correct?

10 WITNESS BUDGOR: I can't -- I can't tell you
11 that.

12 MS. MESERVE: Okay. I don't have any further
13 questions.

14 CO-HEARING OFFICER DODUC: All right.

15 Miss Meserve.

16 MS. MESERVE: I would move to strike the
17 argument provided by the counsel that was supposed to
18 be providing questions and, instead, attempted to put
19 in testimony regarding her beliefs, which should go in
20 rebuttal.

21 CO-HEARING OFFICER DODUC: Miss Meserve, I
22 understood Miss Morris was trying to explain the basis
23 of the question to Dr. Budgor.

24 Thank you, Miss Morris.

25 Mr. Mizell.

1 And since you did request 45 minutes, could
2 you please outline the issues you'll be covering.

3 MR. MIZELL: Certainly.

4 I'll be covering Dr. Budgor's testimony
5 regarding Old and Middle River; his representations of
6 Santa Barbara County; and costs and construction of the
7 Coastal Branch.

8 CO-HEARING OFFICER DODUC: Thank you.

9 MR. MIZELL: I'll ask some preliminary
10 questions about how the testimony was drafted given the
11 circumstances we're dealing with in some of his
12 qualifications.

13 CO-HEARING OFFICER DODUC: All right.

14 CROSS-EXAMINATION BY

15 MR. MIZELL: Good afternoon, Dr. Budgor.

16 And I do know it's late, so I will try and be
17 as quick as possible.

18 So, if we could bring up CWIN-207, please.

19 (Exhibit displayed on screen.)

20 MR. MIZELL: So this is part of Mr. -- Maybe I
21 shouldn't try and attempt that name unless . . .

22 MR. JACKSON: Sjovold.

23 MR. MIZELL: Sjovold.

24 Mr. Sjovold's testimony.

25 And I'm curious: What portion of this did you

1 draft or assist in drafting?

2 WITNESS BUDGOR: Okay. So, what I ended up
3 doing is, as I said, I'm on the C-WIN Board, and I was
4 responsible for going over all the documentation that
5 was generated, wrote some of the material myself.

6 Dr. -- Mr. Sjovold was the person who was
7 supposed to be providing this testimony and, as you
8 probably are aware, he took sick and unfortunately
9 passed away.

10 So, the decision was that, since I was
11 involved and understood what the written documentation
12 was all about, met with the ECONorthwest individuals as
13 well, who some of the appendices are in there,
14 understood where the data was coming from, that I would
15 be able to go and -- and testify as a co-author, so to
16 speak.

17 MR. MIZELL: Understood. Generally speaking,
18 that's the circumstances.

19 I'm curious to know: You just now indicated
20 that you drafted some sections, and is it proper to say
21 you advised on others --

22 WITNESS BUDGOR: Yeah.

23 MR. MIZELL: -- or reviewed on others?

24 WITNESS BUDGOR: Correct.

25 MR. MIZELL: I'm looking for a distinction in

1 this testimony as between the sections that you
2 authored versus the sections that you reviewed.

3 WITNESS BUDGOR: So, basically, the data
4 was -- that was received from the various Water
5 Districts, I was a part of collecting that data, and
6 asking the questions as to what the cost impacts were,
7 how they actually racked and stacked against other
8 sources of water that supplied their remaining
9 gallonage, or acre-feet, so to speak, for the four
10 counties.

11 And then, based on that analysis -- Or based
12 on that data collection, Mr. Sjovold actually did the
13 racking and stacking and creating the pie charts and
14 the tables.

15 So I looked at that material, sort of did some
16 independent viewing and seeing whether the numbers
17 worked out correctly based on the inputs, and -- and as
18 principal, you know, passed on that, just like a
19 Project Manager would do.

20 MR. MIZELL: Okay. I'm -- I'm hoping to get a
21 little more specificity from you, sir.

22 There are some portions of this that you
23 reviewed in the concept of a Project Manager and others
24 that you indicated that you drafted.

25 WITNESS BUDGOR: Correct.

1 MR. MIZELL: Can you point me to where in
2 your -- where in Mr. Sjovold's testimony you drafted
3 the sections?

4 WITNESS BUDGOR: Okay. So it would be
5 basically in the -- the sections -- Oh, in this
6 particular testimony?

7 MR. JACKSON: Yeah. I do believe that one of
8 you is talking about this testimony, and one of you is
9 taking about --

10 WITNESS BUDGOR: Yeah. I'm talking about the
11 Santa Barbara Report.

12 MR. JACKSON: Actually, this is my mistake.
13 I've not withdrawn this yet. I was planning on doing
14 that because Mr. Sjovold had a -- When you said "Old
15 and Middle River" (hitting head) it was kind of that
16 reaction.

17 You did not draft the --

18 WITNESS BUDGOR: No. This particular
19 document, I did not draft at all.

20 MR. MIZELL: Okay. Well, Mr. Jackson, would
21 you like to certainly clear up the record, and I will
22 work on striking questions that don't -- no longer
23 apply.

24 MR. JACKSON: All right. The -- Mr. Sjovold
25 had a number of different expertise.

1 CO-HEARING OFFICER DODUC: Hold on,
2 Mr. Jackson.

3 If we could put up the list of exhibits from
4 C-WIN for Part 2, that might be helpful.

5 (Exhibit Index displayed on screen.)

6 CO-HEARING OFFICER DODUC: Mr. Jackson.

7 MR. JACKSON: Yes.

8 I believe that this is CWIN-208, which is a
9 report identified as the Public Trust and Delta
10 Hydrology section.

11 CO-HEARING OFFICER DODUC: That is one exhibit
12 that you are moving to strike, or you are proposing to
13 strike?

14 MR. JACKSON: I am proposing to strike that
15 testimony because it was Mr. Sjovold's writing.

16 CO-HEARING OFFICER DODUC: And is Dr. Budgor
17 able to answer questions on CWIN-207 and -209?

18 MR. JACKSON: Yes.

19 MR. MIZELL: Okay. Well, then, that brings us
20 maybe back to where we just started.

21 I had up on the screen CWIN-207.

22 (Exhibit displayed on screen.)

23 MR. MIZELL: And this incorporates many of the
24 concepts of CWIN-208.

25 WITNESS BUDGOR: Right.

1 MR. MIZELL: So do we need to strike portions
2 of C-207?

3 WITNESS BUDGOR: From the perspective of what
4 I personally wrote?

5 MR. MIZELL: And based upon the fact that
6 we've just struck 208.

7 WITNESS BUDGOR: Well, I mean, I guess the
8 question I would ask is, is that:

9 It's certainly true that I did not write that
10 I'm a Retired Research Scientist, the first
11 paragraph --

12 MR. MIZELL: Well, certainly, sir.

13 WITNESS BUDGOR: -- because I'm not -- I'm not
14 Mr. Sjovold.

15 But the overview of the testimony, much of
16 that, I believe, actually comes from the report that
17 we're citing as 210.

18 MR. MIZELL: So --

19 CO-HEARING OFFICER DODUC: So, Dr. Budgor --
20 I'm sorry.

21 Dr. Budgor, did you review CWIN-207?

22 WITNESS BUDGOR: Yes, I did.

23 CO-HEARING OFFICER DODUC: Did you author any
24 part of CWIN-207?

25 WITNESS BUDGOR: No, I did not.

1 CO-HEARING OFFICER DODUC: Miss Morris.

2 MS. MORRIS: Yeah. I'm sorry.

3 CWIN-207, if that's the case, it really is a
4 campaign to 208, the public trust paper, and it talks
5 about the reverse flow. So there would have to be
6 questions unless that's also withdrawn.

7 The two -- There's four -- There's two pieces
8 of testimony, two reports. And the 209 testimony is
9 the one that references the Santa Barbara Report, but
10 that's not referenced in the CWIN-207.

11 MR. MIZELL: That's correct.

12 If we go back to the page on 207 we were just
13 looking at.

14 (Exhibit displayed on screen.)

15 WITNESS BUDGOR: Yeah.

16 MR. MIZELL: In the overview of testimony and
17 in the Section III there on the screen, that all
18 relates to CWIN-208 and the yellow marks.

19 CO-HEARING OFFICER DODUC: So CWIN-207 does
20 not reference -209.

21 MR. MIZELL: I don't believe so. I believe
22 -209 references -210.

23 CO-HEARING OFFICER DODUC: So is there a
24 motion?

25 MR. MIZELL: Oh. Either 207 can be withdrawn

1 or I can cross-examine him on things that he has stated
2 he has no familiarity with.

3 CO-HEARING OFFICER DODUC: Actually, that's
4 not correct.

5 My understanding was Dr. Budgor said he --
6 said he did not draft CWIN-207, but that is -- but he
7 is familiar with and is able to answer questions on
8 CWIN-207.

9 Am I understanding that?

10 WITNESS BUDGOR: That's correct.

11 I mean, so basically I've read everything.

12 You asked two questions. You asked me, you
13 know, am I familiar with it, and what did I do on it.

14 And certainly the things that Mr. Sjovold
15 wrote personally, I reviewed it but I certainly didn't
16 draft it.

17 CO-HEARING OFFICER DODUC: All right.
18 Miss Ansley?

19 MS. ANSLEY: Just briefly. My memory was --
20 When we spoke about Dr. Budgor taking over for
21 Mr. Sjovold, it was my memory that all the testimony in
22 the exhibits regarding modeling or flows on the
23 San Joaquin River were now going to be withdrawn.

24 So it was definitely the DWR's understanding
25 that we were only left dealing with the testimony and

1 the Santa Barbara Report. And so that is what we
2 are . . .

3 And I --

4 CO-HEARING OFFICER DODUC: Is that --

5 MR. JACKSON: That is true. That's exactly
6 the representation I made to both Miss Ansley and
7 Mr. Mizell, and I apologize for the confusion.

8 It looks to me like -- I don't want a witness
9 trying to answer a question that he shouldn't be
10 answering.

11 And, so, I think 207 and 208, insofar as they
12 refer to anything having to do with the San Joaquin
13 River or Delta hydrology, it's --

14 CO-HEARING OFFICER DODUC: So we are here --
15 we are hereby limiting Dr. Budgor's testimony, as well
16 as cross, to just 209?

17 MR. JACKSON: Two --

18 WITNESS BUDGOR: 210.

19 MR. JACKSON: 209 and 210, which is the Santa
20 Barbara Report.

21 CO-HEARING OFFICER DODUC: All right. Is that
22 understood?

23 MS. MORRIS: As long as it's clear -- I'm
24 sorry.

25 CO-HEARING OFFICER DODUC: Go ahead.

1 MS. MORRIS: As long as it's clear that this
2 entire 207 is on reverse flows. And to the extent
3 that -- Yeah, it should be withdrawn in its entirety,
4 because there is no data now -- because 208's
5 withdrawn -- to support it.

6 CO-HEARING OFFICER DODUC: Mr. Jackson --

7 MR. JACKSON: Yes.

8 CO-HEARING OFFICER DODUC: -- do you agree.

9 MR. JACKSON: That's correct.

10 CO-HEARING OFFICER DODUC: All right. So 207,
11 208 are withdrawn.

12 Dr. Budgor's testimony and cross will focus on
13 209 and 210.

14 Bad, Mr. Jackson.

15 MR. MIZELL: Okay. Well, it makes -- it makes
16 this a little bit shorter.

17 CO-HEARING OFFICER DODUC: Oh, good,
18 Mr. Jackson.

19 MR. MIZELL: If we could bring up CWIN-209,
20 please.

21 (Exhibit displayed on screen.)

22 MR. MIZELL: Okay, Sara.

23 So, now, at this point, we'll go back to the
24 question that I believe you were trying to answer when
25 I was talking about 207 and you were talking about 209.

1 So, can you indicate for me which portions of
2 CWIN-209 you drafted.

3 WITNESS BUDGOR: Yes. So it would have been
4 Section III, the conclusions.

5 And also parts of Section II, which were
6 the . . . parts of the overview where -- which pointed
7 to CWIN-210.

8 MR. MIZELL: So --

9 WITNESS BUDGOR: So II and III.

10 MR. MIZELL: All of II and all of III.

11 WITNESS BUDGOR: Yeah.

12 MR. MIZELL: Okay. And then you served as an
13 advisor for the remainder of the --

14 WITNESS BUDGOR: Correct.

15 MR. MIZELL: -- this exhibit?

16 WITNESS BUDGOR: Correct.

17 MR. MIZELL: So, in your understanding of
18 CWIN-209, it relies entirely upon the Santa Barbara
19 Report, which is CWIN-210; is that correct?

20 WITNESS BUDGOR: That is accurate.

21 MR. MIZELL: And so CWIN-210 contains all the
22 data that underlies the conclusions that appear in
23 CWIN-209.

24 WITNESS BUDGOR: That is correct.

25 MR. MIZELL: If we could go to CWIN-210,

1 please.

2 (Exhibit displayed on screen.)

3 MR. MIZELL: Looking at Page 2.

4 (Exhibit displayed on screen.)

5 MR. MIZELL: And so, Dr. Budgor, you're listed
6 as a member of the Board of Directors; is that correct?

7 WITNESS BUDGOR: Correct.

8 MR. MIZELL: And Mr. Jackson and Mr. Jennings
9 are both Board Members with you; is that correct?

10 WITNESS BUDGOR: That is correct.

11 MR. MIZELL: That's quite a crew.

12 WITNESS BUDGOR: Very dedicated people.

13 MR. MIZELL: What portions of CWIN-210 did you
14 draft?

15 WITNESS BUDGOR: Most of it had to do, as I
16 said earlier, with helping collect the data from the
17 Water Districts.

18 We very specifically asked them for cost
19 information from 2005 through -- sorry -- 2010 through
20 2015.

21 And also how they allocated their total budget
22 towards all the sources of water that they were
23 getting.

24 MR. MIZELL: Thank you, sir.

25 My question was focused on what you prepared,

1 not how you prepared it.

2 WITNESS BUDGOR: Right.

3 So, what I prepared, then, was getting the
4 information, turning over the data to Mr. Sjovold and
5 also to the ECONorthwest individuals -- that's the
6 folks who wrote the Appendix A -- and in principal
7 asked them to generate the pie charts and tables in
8 order to explain what the data really meant.

9 And then I personally wrote some of the
10 conclusions. I wrote some of the analyses based on the
11 data that I saw.

12 And a lot of it had to do with more or less
13 looking at the document and wordsmithing it so that I
14 thought it was representative of the case we needed to
15 make.

16 So that would have been the conclusions, and
17 that would have been the executive summary and things
18 of that nature.

19 MR. MIZELL: So is it -- My understanding --
20 and please correct me if I'm wrong -- is that you wrote
21 the conclusions, the executive summary, and some of the
22 analyses.

23 WITNESS BUDGOR: That's correct.

24 Interpretation of the analyses.

25 MR. MIZELL: Can you point to me -- point me

1 to which analyses you drafted.

2 WITNESS BUDGOR: Okay. Let's see here.

3 (Examining document.)

4 WITNESS BUDGOR: So the analyses on the
5 effective unit costs. So that would be -- Again, I'm
6 looking at an old document. So that would be
7 Section V I believe, "SWP Reliability and Effective
8 Unit Costs."

9 And the data collection would have been in
10 the -- in that section as well.

11 Impact on ratepayers.

12 The impact on Twin Tunnels I did not do. That
13 pretty much came from ECONorthwest and Mr. Sjovold.

14 I ended up writing and -- the conclusion
15 section, which is the last section of the document.

16 And . . . so the -- the designation of the
17 chartsmanship and what not, I did not do, so that was
18 given to Mr. Sjovold and other analysts to go off and
19 put it into either an Excel spreadsheet or to do pie
20 charts therefrom, but -- and the graphics.

21 So we had people who actually manipulated the
22 information that was put into the tables that we
23 collected and then they just generated the charts. So
24 I wasn't one of those.

25 MR. MIZELL: Dr. Budgor, did you work on

1 C-WIN -- Exhibit CWIN-2 that was presented as part of
2 Part 1 testimony?

3 WITNESS BUDGOR: Which one is that? Could you
4 pull that up for me, please?

5 (Exhibit displayed on screen.)

6 MR. MIZELL: This is Mr. Sjovold's revised
7 testimony from Part 1.

8 WITNESS BUDGOR: Only -- only the results as
9 they came forth in Sections II and III, as I indicated
10 earlier.

11 MR. MIZELL: Thank you.

12 We can go back to CWIN-110, please -- -210.

13 WITNESS BUDGOR: Right.

14 (Exhibit displayed on screen.)

15 MR. MIZELL: If we could go to Page 4, please.

16 (Exhibit displayed on screen.)

17 MR. MIZELL: Oh, I'm sorry. Document Page 4.

18 (Exhibit displayed on screen.)

19 MR. MIZELL: Oh, it is Page . . . Hmm.

20 All right. I have a bad cite. I will move
21 on.

22 Dr. Budgor, do you have any hydrodynamic
23 modeling experience?

24 WITNESS BUDGOR: Not personally, no.

25 I have -- I have written papers in fluid

1 mechanics, but I am not a Modeler.

2 MR. MIZELL: When were those papers written?

3 WITNESS BUDGOR: When I was a Ph.D. student
4 many, many years ago.

5 So, basically, my background is in
6 mathematical physics. And so I've written papers in
7 areas of chemistry, physics, lasers, optics.

8 I have run many, many systems analyses,
9 programs, as Program Manager, and as executive in
10 companies and the government.

11 But, no, I'm not a Hydrodynamic Modeler.

12 MR. MIZELL: Sir, have you ever lived in the
13 Delta?

14 WITNESS BUDGOR: Excuse me?

15 MR. MIZELL: Have you ever lived in the
16 San Joaquin-Sacramento Delta?

17 WITNESS BUDGOR: The closest I got was
18 Danville.

19 MR. MIZELL: And, based on that, have you had
20 an opportunity to observe the tidal cycles for extended
21 periods of time in the Delta?

22 WITNESS BUDGOR: No, not for extended periods
23 of time. I go and -- mostly as a hiker and what not,
24 so -- but other than that, no.

25 MR. MIZELL: And have you ever worked for a

1 public Water Agency?

2 WITNESS BUDGOR: I -- No, I've not worked for
3 a public Water Agency.

4 I have run a Water Board for a -- our
5 community association when we were worrying about the
6 rate increases and the material that actually went into
7 the C-WIN report.

8 But other than -- But, no, I've never worked
9 for a Water Agency.

10 MR. MIZELL: Okay. But that Board did not
11 actually control the infrastructure. It was a
12 community organization?

13 WITNESS BUDGOR: It was a community
14 organization, and we would have representation from the
15 Water Districts themselves talking about what their
16 planning was, what they were doing, how they were
17 actually impacting the community.

18 MR. MIZELL: Okay. In your professional
19 capacity, do you ever help them manage a water project?

20 WITNESS BUDGOR: No.

21 MR. MIZELL: Okay. If we could go to Page 7
22 of this document.

23 (Exhibit displayed on screen.)

24 MR. MIZELL: Right.

25 I'm going to focus you on that first paragraph

1 there, sir, Section II.

2 WITNESS BUDGOR: (Examining document.)

3 MR. MIZELL: Can you tell me which water
4 purveyors are concerned?

5 WITNESS BUDGOR: Yeah.

6 So we -- we followed four water purveyors. As
7 I indicated in my original testimony, I spoke to the
8 Montecito Water District, Santa Barbara City, Goleta
9 and Carpinteria. So those are the four that represent
10 our Central Coast -- pardon -- part of the Central
11 Coast.

12 MR. MIZELL: And did they authorize you to
13 speak on their behalf today?

14 WITNESS BUDGOR: No.

15 But they were very supportive in providing the
16 information we requested, and they were told that we
17 were going to be writing about it.

18 MR. MIZELL: But you didn't take that as an
19 authorization to speak on their behalf.

20 WITNESS BUDGOR: No. We are not speaking on
21 their behalf.

22 MR. MIZELL: Thank you.

23 So looking at the second paragraph on this
24 page.

25 Where's the data that would support your

1 statements in this paragraph?

2 WITNESS BUDGOR: Okay. So, in the document
3 itself -- And I'm going to pull out some tables.

4 So we had -- We had Table 2 in -- in the
5 document. And I'm not sure what page that's on.

6 (Exhibit displayed on screen.)

7 WITNESS BUDGOR: It's a fuller -- fuller one.

8 No, that's not the right one.

9 (Exhibit displayed on screen.)

10 WITNESS BUDGOR: Keep going.

11 (Exhibit displayed on screen.)

12 WITNESS BUDGOR: SWP Effective Unit Costs.

13 All of these numbers, as I indicated before,
14 came from the water purveyors themselves.

15 We also have a series of pie charts that show
16 the allocations, and that's a few pages further. These
17 are Figures 8.

18 (Exhibit displayed on screen.)

19 WITNESS BUDGOR: No. It's got to be before
20 that, I think.

21 (Exhibit displayed on screen.)

22 WITNESS BUDGOR: Keep going.

23 (Exhibit displayed on screen.)

24 WITNESS BUDGOR: More.

25 (Exhibit displayed on screen.)

1 WITNESS BUDGOR: These are under Budgetary
2 Impacts. This is the section on that.

3 I just don't have the right version with me.
4 Otherwise, I'd be able to tell you what it is.

5 (Exhibit displayed on screen.)

6 WITNESS BUDGOR: Okay. Keep going.

7 (Exhibit displayed on screen.)

8 WITNESS BUDGOR: Yeah, there you go.

9 Yeah, it is Figure 8, the 12. Okay.

10 So what we got from each one of these
11 purveyors, as I indicated to you before, is their --
12 what they were actually spending on total water
13 allocation that they were providing to their customers,
14 and broke it out from different domains, SWP, Twin
15 Tunnels, local water supplies.

16 And then we did one thing further, is looked
17 at District operations, because that's part of the
18 total budget, and also repaying bonds and things of
19 that nature, and then broke it up into how much of
20 their ongoing budget they were spending on various
21 things.

22 MR. MIZELL: Thank you, sir.

23 If we could go back to Page 7, please.

24 (Exhibit displayed on screen.)

25 MR. MIZELL: And, again, in Paragraph 2.

1 Specifically, I'd like to -- I'd like to ask
2 you to find for me the data that supports the assertion
3 you make here that an increase in the cost of water to
4 the consumers will be met with decreases in water
5 usage.

6 And you can see that on Lines 3 and 4.

7 WITNESS BUDGOR: Right.

8 I'm going to have to look for that. I mean, I
9 know exactly where it's coming from. It's from the
10 drought.

11 And, basically, when we had a moratorium, we
12 were actually told how much water we could use on a
13 monthly basis.

14 So there was an increase in the cost for
15 whatever amount that you used subject to a limitation.

16 And what happened in the -- in Santa Barbara,
17 in particular, is, given that you were clamped at a
18 certain amount, people actually ended up, you know,
19 watching very carefully how much water they were using,
20 because every time that they went above that, they were
21 given a fine.

22 So when that moratorium was lifted, the
23 habits -- I mean, the amounts of water that was used
24 during the drought period was about a third less than
25 historical. And I don't know exactly where it is in

1 the document, but that's basically what happened.

2 And when the drought was lifted and the
3 moratorium was lifted, the habits of the people didn't
4 go back to what it typically was.

5 MR. MIZELL: Well, Doctor, I appreciate that
6 explanation.

7 I'm -- I would very much like it, though, if
8 you could find it in the document for me.

9 Where's the data supporting the statement
10 that --

11 WITNESS BUDGOR: I don't think it's -- I don't
12 think that's actually in there.

13 This is the consequence of -- of the amount of
14 water that people used, and it's just -- it -- it's
15 not -- it's not described in a -- in a table or in
16 anything else. It's just a consequence of what
17 occurred.

18 MR. MIZELL: Right.

19 But I believe you have to recognize the fact
20 that I'm here trying to ask questions and dig into the
21 bottom of what your assertions are based upon.

22 WITNESS BUDGOR: Right.

23 MR. MIZELL: So where might I find the data in
24 the exhibits -- any of the exhibits that --

25 WITNESS BUDGOR: Right.

1 MR. MIZELL: -- C-WIN or your Coalition has
2 presented for Part 2 --

3 WITNESS BUDGOR: Yeah.

4 MR. MIZELL: -- to support the assertion that
5 demand went down and price went up.

6 WITNESS BUDGOR: Yeah. So I think what we
7 would have to do is go rate back to Appendix C, which
8 is -- sorry -- Appendix F, which is references from the
9 various Water Districts.

10 And they would probably be in there but I'd
11 have to go look.

12 MR. MIZELL: I'm going to attempt to move on,
13 but this is an area that I would like an answer to at
14 the next --

15 WITNESS BUDGOR: We will.

16 MR. MIZELL: -- break --

17 WITNESS BUDGOR: -- get that.

18 MR. MIZELL: -- or tomorrow. If we could be
19 provided that answer, that would be great.

20 CO-HEARING OFFICER DODUC: Tomorrow?

21 WITNESS BUDGOR: Tomorrow would be better,
22 yes.

23 CO-HEARING OFFICER DODUC: Thank you,
24 Dr. Budgor.

25 WITNESS BUDGOR: Thank you.

1 CO-HEARING OFFICER DODUC: And let's be clear:

2 We're not asking Dr. Budgor to come back with
3 that information. Mr. Jackson can provide that
4 information tomorrow.

5 WITNESS BUDGOR: Right.

6 MR. MIZELL: So if we could go to the bottom
7 of Page 7.

8 (Exhibit displayed on screen.)

9 MR. MIZELL: At the bottom of Page 7, you
10 state that -- Well, Mr. Sjovold states, and you're here
11 to testify, that there's (reading):

12 ". . . No proven improvement in the State
13 Water Project reliability of delivery."

14 Do you see that?

15 WITNESS BUDGOR: Yeah, I do. Right.

16 MR. MIZELL: Are you familiar with the water
17 quality control planning process, sir?

18 WITNESS BUDGOR: No, I'm not.

19 MR. MIZELL: But you are familiar with the
20 Hearing Officers you see here today, and that they are
21 members of the State Water Resources Control Board who
22 regulate water in the Delta?

23 WITNESS BUDGOR: Yes, um-hmm.

24 MR. MIZELL: And is it your understanding,
25 generally speaking, based upon your knowledge of the

1 State Water Board and their regulatory powers, that
2 they can adjust the operations of the State Water
3 Project and the amount of water that travels south of
4 the Delta?

5 WITNESS BUDGOR: Of course, yeah.

6 MR. MIZELL: And do you also understand that
7 the State Water Project and Central Valley Project are
8 currently undergoing a reconsultation for the
9 Biological Opinions that control the existing State
10 Water Project and Central Valley Project?

11 WITNESS BUDGOR: If you say so.

12 MR. MIZELL: So you're not familiar with that?

13 WITNESS BUDGOR: I'm not familiar with that,
14 no.

15 MR. MIZELL: What regulatory constraints on
16 the operations of the State Water Project are you
17 familiar with, sir?

18 WITNESS BUDGOR: I'm really not.

19 What I -- What I was trying to testify to was
20 the impacts of costs and benefits to the Central Coast.
21 And that's really what I think I understand pretty
22 well, and that's what my testimony is about.

23 I'm not an expert on these other things.

24 MR. MIZELL: In your critique of the
25 reliability of the State Water Project, though, you

1 must have a belief as to how predictable the water
2 supply from the State Water Project should be; is that
3 correct?

4 WITNESS BUDGOR: Yes.

5 MR. MIZELL: And how predictable should it be?

6 WITNESS BUDGOR: Well, based on the 1991 bond
7 measure, that said 97 percent.

8 MR. MIZELL: Without any regard to the
9 potential of increasing environmental constraints on
10 the Project.

11 WITNESS BUDGOR: You know, when -- when people
12 are told something, they -- they don't look at the fine
13 print necessarily.

14 They're told that this is what we expect, and
15 then, based on what the expectations are, what has
16 actually been delivered.

17 And what's been delivered is the rationale
18 behind the testimony. It hasn't done very well.

19 MR. MIZELL: Okay. I'm going on to
20 construction cost questions now.

21 If we could go to Page 10, please.

22 (Exhibit displayed on screen.)

23 MR. MIZELL: And if we could scroll down on
24 the page, please.

25 (Exhibit displayed on screen.)

1 MR. MIZELL: To the paragraph that starts
2 "Based on information."

3 (Exhibit displayed on screen.)

4 MR. MIZELL: Right. Thank you.

5 WITNESS BUDGOR: (Examining document.)

6 MR. MIZELL: Actually, could you please scroll
7 up on the page. I'm looking for the first paragraph
8 under "Section II. Overview."

9 (Exhibit displayed on screen.)

10 MR. MIZELL: First paragraph.

11 (Exhibit displayed on screen.)

12 MR. MIZELL: There we go.

13 So, sir, in the last half of that paragraph,
14 you see the dollar amount 270 million; correct?

15 WITNESS BUDGOR: That's correct, yeah.

16 MR. MIZELL: And it's -- You're claiming here
17 that the total cost to repairs to construct the Coastal
18 Aqueduct to its terminus in Santa Maria would be
19 270 million?

20 WITNESS BUDGOR: That was prior -- That was
21 prior to 1991, that's correct.

22 MR. MIZELL: And then if we go to the next
23 paragraph.

24 (Exhibit displayed on screen.)

25 MR. MIZELL: You claim that it costs

1 670 million to construct the Coastal Branch; is that
2 correct?

3 WITNESS BUDGOR: Correct.

4 And this is on data from CCWA itself. That's
5 in Appendix F.

6 MR. MIZELL: Miss Gaylon, could we bring up
7 DWR-1165 on the flash drive, please.

8 (Exhibit displayed on screen.)

9 MR. MIZELL: Thank you.

10 And can we see the whole page.

11 (Exhibit displayed on screen.)

12 MR. MIZELL: Okay. So there's the page
13 number.

14 Sir, I'm going to assert to you that this is
15 Page 133 from DWR's EIR for the Coastal Branch
16 construction.

17 WITNESS BUDGOR: Um-hmm.

18 MR. MIZELL: Based upon that -- that assertion
19 to you, if we look at Table 11-1, please.

20 (Exhibit displayed on screen.)

21 MR. MIZELL: Isn't it true that the
22 \$270 million number was only for a portion of the
23 facilities' construction?

24 WITNESS BUDGOR: Yeah. This is the
25 construction for the Coastal Branch and local branch.

1 And so it's contrasted to the estimate given to voters.

2 So I -- All I'm -- All I'm suggesting is, is
3 that I don't know what year this particular document
4 is, but the estimate to the voters was the number that
5 we got.

6 MR. MIZELL: That's correct.

7 But . . . in the testimony, though, you're
8 asserting that it cost 670 million, but the 270 million
9 number you use is not the complete cost of the project
10 as described in the EIR for the Coastal Branch; is that
11 correct?

12 WITNESS BUDGOR: That's correct, yeah. That's
13 correct.

14 But the -- the -- the main point, if I may
15 say, that I'm trying to bring up over here is, it's not
16 unusual that original contentions of what costs are
17 turn out to be different as the program moves on.

18 And part of the whole idea of the analysis was
19 to try to get some bounding values on initial
20 estimates. Based on some better refinements, you get
21 better estimates. And then you put in some real
22 factors based on typical information on cost overruns
23 for very large projects.

24 And that was really what we were trying to do
25 over here, is to indicate that a number that is

1 projected originally in X year's dollars should be
2 taken with a real serious grain of salt because you
3 really don't know, especially if you haven't designed
4 it to a -- a pretty decent level.

5 MR. MIZELL: Correct.

6 But it -- The \$270 million number you cite in
7 the testimony is not even the original estimate. It is
8 a portion of the original estimate.

9 Is that the correct --

10 WITNESS BUDGOR: It's a portion of the
11 estimate given to the voters of what this thing would
12 cost, correct.

13 MR. MIZELL: And are you aware if that -- if
14 the estimate you used included the enlargement of Lake
15 Cachuma?

16 WITNESS BUDGOR: I'm not aware of that, no.

17 MR. MIZELL: If we could go back to CWIN-210,
18 please.

19 (Exhibit displayed on screen.)

20 MR. MIZELL: And in this paragraph that begins
21 "Based upon" or "based on," you state that Santa
22 Barbara ratepayers will have paid 1.76 billion. And
23 then you go on to describe what's included in that
24 number.

25 WITNESS BUDGOR: Correct.

1 MR. MIZELL: And what's included in that
2 number includes the operation and maintenance of the
3 project; is that correct?

4 WITNESS BUDGOR: That's correct, yeah.

5 MR. MIZELL: So 1.76 billion is more than just
6 construction costs; is that correct?

7 WITNESS BUDGOR: Well, that's right, and --
8 But, again, remember that this is what it turned out
9 subsequent to the original estimate, so it's much
10 larger.

11 MR. MIZELL: Subsequent to an original
12 estimate that did not include --

13 WITNESS BUDGOR: That's correct.

14 MR. MIZELL: -- O&M costs --

15 WITNESS BUDGOR: Did not include O&M costs.

16 MR. MIZELL: -- because O&M costs are not a
17 portion of --

18 WITNESS BUDGOR: That's correct. That is
19 correct, yeah.

20 MR. MIZELL: So your comparison of numbers in
21 this paragraph are numbers that are based on different
22 components of the State Water Project.

23 WITNESS BUDGOR: It is. But if you read the
24 paragraph, what it talks about is what the ratepayers
25 have to pay.

1 And, so, my point is, is that even though
2 originally we're talking about construction costs and
3 what the original amount is, that already was almost a
4 factor of three below what it turned out to be.

5 And then, on top of that, after you've added
6 the bonds and the interest rates and all of that, you
7 have a number that is -- Albeit it covers O&M and
8 things of that nature, but it's a much, much larger
9 number than had ever been anticipated by the
10 ratepayers.

11 So it's a matter of what you think you're
12 going to get versus what you're really paying for it.

13 MR. MIZELL: So, sir, is it your contention
14 that the ratepayers of the Coastal Branch believed
15 that, once they conducted the Project, it would be free
16 to operate and maintain?

17 WITNESS BUDGOR: No. What they -- What they
18 were looking for is -- and they -- And I think a lot of
19 people do understand that you're going to have to pay
20 for the infrastructure and -- and making sure that it
21 continues to operate as planned, but subject to the
22 amount of water that's been contracted for it.

23 And let me -- let me just finish with this
24 thought.

25 And the notion is, is that when you have to go

1 and look for supplemental sources, because you can't
2 get what the State Water Project originally said that
3 you could get, and that increases the cost to the
4 ratepayers, that's when the ratepayers are having a
5 serious problem.

6 MR. MIZELL: Okay. But you are familiar with
7 the concepts of fixed costs and variable costs.

8 WITNESS BUDGOR: Oh, yeah.

9 MR. MIZELL: And variable costs would be based
10 upon the delivery of water, and fixed costs would be
11 independent of the delivery of water.

12 Is that your understanding?

13 WITNESS BUDGOR: I do understand that, yes.

14 MR. MIZELL: And so if the 1.76 billion
15 includes operation and maintenance, which are fixed
16 costs, why would there be an expectation that that
17 should not be paid for?

18 WITNESS BUDGOR: I don't think there's an
19 expectation that it shouldn't be paid for.

20 I think the expectation was that there was
21 very little explanation to the ratepayers themselves of
22 what indeed they were paying for.

23 So even though -- even though you had a -- a
24 1991 bond issue that said, "Here's what this is going
25 to cost," and then it turned out to get much larger,

1 and then it continues to get larger for unavailability
2 of the water, having to go on the spot market, getting
3 other sources, which in effect costs in some cases
4 much, much less than the effective unit cost of this
5 water that's delivered by the State Water Project,
6 that's really what the issue is.

7 So why would the Central Coast be penalized to
8 continue to pay for something that they're really not
9 getting? Or they have to go somewhere else to get?

10 MR. MIZELL: But, as we heard in the
11 cross-examination by Miss Morris earlier, there are
12 instances where the Central Coast agencies are not
13 taking water that is available to them.

14 WITNESS BUDGOR: Oh, yes. I mean, under that
15 circumstance, I can understand that.

16 But the -- the fact is, though, that whatever
17 water is being delivered, given that they could take
18 the rest of it -- I don't know why they're not --
19 that's -- You know, I'm not in their operations and
20 management section.

21 But the fact is, is that the water that we are
22 getting is actually effectively too expensive.

23 MR. MIZELL: If we could look at Page 9,
24 please.

25 (Exhibit displayed on screen.)

1 MR. MIZELL: This is your definitional section
2 of the testimony, and you describe safe yield.

3 Do you see that, sir?

4 WITNESS BUDGOR: Yes, I do.

5 MR. MIZELL: Are you aware that safe yield is
6 largely a groundwater concept and not a surface water
7 concept?

8 MR. JACKSON: I think that states facts not in
9 evidence.

10 CO-HEARING OFFICER DODUC: Are you asking
11 Mr. Budgor something, Mr. Mizell?

12 Let's rephrase that, if you could.

13 MR. MIZELL: Certainly.

14 In what circumstances have you heard of safe
15 yield being applied to surface water, sir?

16 WITNESS BUDGOR: Only from the perspective of
17 this document.

18 And -- And I -- I would tend to say that if we
19 define "safe yield" in this particular way, and we're
20 very specific about how we define it, then it should be
21 fairly clear what we mean by it.

22 MR. MIZELL: If we could turn to Page 13,
23 please.

24 (Exhibit displayed on screen.)

25 MR. MIZELL: Can you maybe scroll down a

1 little more?

2 (Exhibit displayed on screen.)

3 MR. MIZELL: There we go. "Paper water."

4 WITNESS BUDGOR: Yeah.

5 MR. MIZELL: So in your discussion of paper
6 water, you talk about the development of the North
7 Coast Rivers; is that correct?

8 WITNESS BUDGOR: That is correct, yes.

9 MR. MIZELL: Are you aware that DWR no longer
10 includes potential water from the North Coast Rivers in
11 their yield calculations for the State Water Project?

12 WITNESS BUDGOR: I'm pretty sure that would be
13 true because you can't.

14 MR. MIZELL: All right. Thank you.

15 That concludes my cross-examination.

16 CO-HEARING OFFICER DODUC: Thank you,
17 Mr. Mizell.

18 Miss Meserve, did you still want to conduct
19 cross?

20 MS. MESERVE: It'll probably take five
21 minutes. I'll be quick.

22 CROSS-EXAMINATION BY

23 MS. MESERVE: Good afternoon. Osha Meserve
24 for Local Agencies of the North Delta.

25 I just wanted to follow up on a couple of

1 items from your testimony.

2 Earlier, and just now, you were discussing the
3 issue of why Santa Barbara and the other Contractors
4 that you are opining about in your testimony may not
5 wholly take their State Water Project allocations.

6 Just to clarify that point.

7 Wouldn't the cost of that water be potentially
8 a major factor in whether the Contractors took the
9 water?

10 WITNESS BUDGOR: That's what I was trying to
11 explain. That's correct.

12 MS. MESERVE: It's --

13 WITNESS BUDGOR: So, to amplify on that.

14 If you have multiple sources -- and the Water
15 District personnel that I speak to say, "Well, we can
16 buy this on the spot market for X number of dollars
17 per-acre-foot. We're getting an allocation from the
18 State Water Project of this at a certain cost. But we
19 really need more, so we actually have to go and get the
20 water wherever we can."

21 And so, in many cases, it comes right down to
22 what's the best value for the -- for the buck.

23 MS. MESERVE: And, so, thinking about your
24 testimony today, would reliability, in your opinion,
25 also include consideration of the cost of the water

1 that could be provided, for instance, by the Delta
2 Tunnels Project?

3 WITNESS BUDGOR: You know, I'm not quite sure
4 I understand what "reliability" means in this case.

5 MS. MESERVE: That -- What I'm trying to ask
6 about is whether reliability could include not just
7 there being water available but the cost at which that
8 water would be offered.

9 WITNESS BUDGOR: Well, from -- from everything
10 that I've understood in my discussions with the Water
11 District people, is, they -- they can't -- they can't
12 assume that they can deal with something on a
13 year-to-year basis.

14 In other words, if there's a supply and they
15 know that, for example, like the City of Montecito has
16 to -- needs approximately 3300 acre-feet per year, they
17 take a look at the different sources and they say,
18 "Well, I'm able to get this commitment from," let's
19 say, "Kern County. And based on that commitment, this
20 will fill up my needs for the next year, two years or
21 three years," and, then, assuming that they're going to
22 get something from a reliability standpoint from the
23 SWP.

24 So if, in fact, from the State Water Project,
25 you get a number that says you've now been reduced to

1 20 percent from the maximum allocation to -- or to
2 5 percent or, maybe last year, it was 60 percent. The
3 reality is, is that they can't plan on it on a
4 year-to-year. They have to have the water.

5 So they get whatever sources they can. And if
6 it turns out that they have more from a different
7 source that they've contracted with on the spot market,
8 of course, they're not going to need the full
9 allocation that -- even at a reduced rate.

10 Does that answer your question?

11 MS. MESERVE: Yes.

12 And then thinking about the concept of
13 reliability for your area, would water that comes from
14 a source that is not so dependent on a lot of other
15 factors that are in locations far away potentially be
16 more definite?

17 If you could get water locally, for
18 instance --

19 WITNESS BUDGOR: Yes.

20 MS. MESERVE: -- or from recycling, for
21 instance, that could be more reliable in terms of your
22 description just now of whether you could plan on it in
23 years to come.

24 WITNESS BUDGOR: Oh, without a -- without a
25 question.

1 Montecito has basically no round reservoirs.
2 It's peculiar. On the other side of us, Goleta and
3 Carpinteria do.

4 So, for all practical purposes, we're -- we
5 only have a couple of options. We either get the full
6 amount or as much as we possibly can from the State
7 Water Project so we can plan as to how to service, you
8 know, the community as -- as we -- as they ask for the
9 water, or they just find it in other modes.

10 So, for example, one of the things that we've
11 been talking about is desalination. So whether it's in
12 partnership with the City of Santa Barbara where they
13 could get, let's say, 1500 acre-feet per -- per year,
14 so that'll tell us from a reliability perspective that,
15 the worst of all possibilities, that's already
16 committed. Or we have to come up with some other
17 methodologies.

18 We don't have the ability to do water
19 recycling or -- or basically we don't have any storage
20 facilities other than a couple of little reservoirs,
21 so, yeah, we're in -- we're in big trouble.

22 So when somebody says, "You will get this," we
23 bank on it. We need it.

24 MS. MESERVE: And would you be concerned
25 about if investments were made, for instance, in the

1 Tunnels Project, that that would take away investment
2 resources that could be put toward what you might
3 consider more reliable sources of water?

4 WITNESS BUDGOR: Absolutely.

5 MS. MESERVE: Thank you.

6 No further questions.

7 CO-HEARING OFFICER DODUC: Thank you,
8 Miss Meserve.

9 Any redirect, Mr. Jackson?

10 MR. JACKSON: No redirect.

11 CO-HEARING OFFICER DODUC: Again, thank you,
12 Dr. Budgor, for coming and for sticking these past few
13 days.

14 WITNESS BUDGOR: I couldn't think of anything
15 better to do.

16 CO-HEARING OFFICER DODUC: Thank you. You're
17 very kind.

18 WITNESS BUDGOR: Thank you.

19 CO-HEARING OFFICER DODUC: When we adjourn
20 tomorrow, Mr. Jackson, you'll have the response to
21 Mr. Mizell's question?

22 MR. JACKSON: Yes. I'll talk to Mr. Mizell --
23 Yes. I'll talk to Mr. Mizell so that I understand
24 fully what his question is.

25 CO-HEARING OFFICER DODUC: All right. And

1 then we will get to your remaining witnesses,

2 Mr. Del Piero and Mr. Smith.

3 MR. JACKSON: Tomorrow morning?

4 CO-HEARING OFFICER DODUC: Tomorrow morning.

5 At this time, what is the expected cross for
6 those two witnesses?

7 How is Mr. Del Piero doing?

8 MR. JACKSON: His operation was -- of the
9 cervical spine was okay. There's been some bleeding
10 around the -- the spine area.

11 I don't know whether you follow basketball,
12 but the Warrior coach has been on and off the court for
13 the last three years because of a drip from a similar
14 operation.

15 CO-HEARING OFFICER DODUC: Oh.

16 MR. JACKSON: But you can ask him tomorrow
17 what it's like.

18 CO-HEARING OFFICER DODUC: Oh.

19 Miss Ansley.

20 MS. ANSLEY: At the current time, we actually
21 anticipate no cross for Mr. Del Piero and Mr. Smith.

22 We do have a number of lengthy objections to
23 Mr. Del Piero's testimony. It would be great if we
24 could submit those in writing.

25 I've been trying to sort of synthesize them

1 and cut them down a little bit all day, but it's up to
2 the Board whether they'd like to hear them read into
3 the record or I can have them submitted on writing
4 probably by the end of the day tomorrow if the Board
5 would like. It's just, they're rather lengthy.

6 CO-HEARING OFFICER DODUC: So, Mr. Jackson, if
7 there is no cross for your two witnesses, can a similar
8 arrangement be made with respect to their testimony --
9 Well, okay.

10 Do you want to subject Mr. Del Piero to the
11 travel here?

12 MR. JACKSON: I -- I'd -- If there is no
13 cross, while I dearly like the guy and . . .

14 I -- I think it would be better if he didn't
15 have to come.

16 CO-HEARING OFFICER DODUC: Well, I would love
17 to see Mr. Del Piero. I also would agree.

18 MS. MESERVE: One thing maybe, if he's already
19 on his way, which I don't know.

20 MR. JACKSON: You know, I'm not really sure,
21 either, whether he was going to come over tonight or
22 tomorrow morning.

23 MS. MESERVE: I believe he was coming over
24 this evening was my take on it.

25 So I think we may have to get back to the

1 Hearing --

2 MR. JACKSON: Yeah.

3 MS. MESERVE: -- officers regarding his
4 appearance.

5 MR. JACKSON: Thank you for the offer. Thank
6 you for the offer.

7 But if -- if, in fact, I find that he's
8 already in Sacramento, I -- I -- I think coming over
9 here would be probably good for him.

10 If he's -- If he has to drive and doesn't have
11 a real reason to be here, we can put his evidence in,
12 then I think that would be better for him.

13 So, if I can find out where he is, and is
14 there a way to let --

15 CO-HEARING OFFICER DODUC: What about
16 Mr. Smith? There is apparently no cross for Mr. Smith,
17 either.

18 MR. JACKSON: Yeah. We could submit
19 Mr. Smith's testimony.

20 I'm -- I'm sitting here considering.

21 It would be the time to submit all of our
22 testimony from my four panels if we're not going to
23 have cross tomorrow.

24 CO-HEARING OFFICER DODUC: Shall we take a
25 break for you to reach Mr. Del Piero?

1 MR. JACKSON: Yes. I'll make a -- I'll make a
2 quick call and --

3 CO-HEARING OFFICER DODUC: Let's do that.

4 And as -- We will reconvene as soon as you get
5 ahold of Mr. Del Piero.

6 MR. JACKSON: Thank you. I'll try to do that
7 fast.

8 MS. MESERVE: The other thing would be,
9 depending on the nature of the objections, it may be
10 that maybe Mr. Del Piero would have information
11 pertaining to them.

12 CO-HEARING OFFICER DODUC: We're still, I
13 guess, on the record.

14 THE REPORTER: (Nodding head.)

15 MS. MESERVE: Yeah.

16 CO-HEARING OFFICER DODUC: Miss Ansley has
17 requested to file her objection in writing --

18 MS. MESERVE: Okay.

19 CO-HEARING OFFICER DODUC: -- which then
20 Mr. Jackson will have an opportunity to respond to in
21 writing.

22 MR. JACKSON: And I think that --

23 CO-HEARING OFFICER DODUC: Microphone, please,
24 Mr. Jackson.

25 MR. JACKSON: Yes.

1 MS. MESERVE: Okay. Yeah, Mr. Del Piero will
2 be here tomorrow. He would like to appear in person.

3 MR. JACKSON: What was that?

4 CO-HEARING OFFICER DODUC: Mr. Del Piero would
5 like to appear in person.

6 MR. JACKSON: Okay.

7 CO-HEARING OFFICER DODUC: All right. Well,
8 gee, that was fun.

9 (Laughter.)

10 CO-HEARING OFFICER DODUC: All right. We
11 will --

12 MR. JACKSON: He evidently is watching.

13 CO-HEARING OFFICER DODUC: Well, I'm glad
14 somebody is.

15 MS. MESERVE: We're not alone.

16 CO-HEARING OFFICER DODUC: All right.

17 CO-HEARING OFFICER MARCUS: Nobody's watching.

18 CO-HEARING OFFICER DODUC: In that case, then,
19 let's -- let's reconvene tomorrow.

20 We will be in the Coastal Hearing Room at
21 9:30.

22 Is there anything else? Any other
23 housekeeping matters we need to discuss right now?

24 MS. ANSLEY: I was just wondering about
25 whether we could submit our objections in writing or if

1 you had any -- I do not need to ask any foundational
2 questions of Mr. Del Piero. It's just a matter of me
3 lodging that before the Board considers whether to move
4 the testimony into evidence.

5 I can -- We can --

6 CO-HEARING OFFICER DODUC: Mr. Jackson, do you
7 have any objection to receiving Miss Ansley's
8 objections in writing?

9 MR. JACKSON: I do not. I think that's
10 appropriate. And the only -- the only question I have
11 is, it'll take me most of tomorrow to get home, and I
12 would like a -- Knowing the detail that Miss Ansley
13 can -- can formulate, I'd like a couple of days.

14 CO-HEARING OFFICER DODUC: We'll sort out due
15 dates tomorrow.

16 MR. JACKSON: The other point I'd like to make
17 is that Ms. Meserve and -- and Mr. Keeling are also
18 sponsors of Mr. Del Piero.

19 CO-HEARING OFFICER DODUC: That is correct.
20 That is correct.

21 MR. JACKSON: And one of the reasons I was
22 slow here is that others may see it differently than I
23 do.

24 CO-HEARING OFFICER DODUC: Um-hmm.

25 MR. JACKSON: So -- But he is here.

1 MS. MESERVE: Yeah.

2 And then I would say with respect to the
3 objections, I think maybe just if Ms. Ansley could just
4 really briefly go over sort of the general nature of
5 them at the time that we put on Mr. Del Piero, and then
6 with the understanding that they would be converted to
7 a longer writing.

8 Would that make sense?

9 MS. ANSLEY: I think actually that would make
10 sense right now. And I'll see if I can formulate down
11 to something that can be easily read into the record,
12 then we can make a decision whether it needs to be
13 converted to writing.

14 CO-HEARING OFFICER DODUC: All right.

15 MS. MESERVE: We may be able to, as we did
16 with the Snug Harbor stuff, we may be able to make some
17 mods and address those and, you know, work together.

18 CO-HEARING OFFICER DODUC: All right.

19 Appreciate that offer, Miss Meserve.

20 Thank you all. We will see you at 9:30
21 tomorrow.

22 (Proceedings concluded at 5:41 p.m.)

23

24

25

1 State of California)
)
2 County of Sacramento)

3

4 I, Candace L. Yount, Certified Shorthand Reporter
5 for the State of California, County of Sacramento, do
6 hereby certify:

7 That I was present at the time of the above
8 proceedings;

9 That I took down in machine shorthand notes all
10 proceedings had and testimony given;

11 That I thereafter transcribed said shorthand notes
12 with the aid of a computer;

13 That the above and foregoing is a full, true, and
14 correct transcription of said shorthand notes, and a
15 full, true and correct transcript of all proceedings
16 had and testimony taken;

17 That I am not a party to the action or related to
18 a party or counsel;

19 That I have no financial or other interest in the
20 outcome of the action.

21

22 Dated: April 29, 2018

23

24

25

Candace L. Yount, CSR No. 2737