

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER, JUDGE

NATURAL RESOURCES DEFENSE
COUNCIL, et al.,

Plaintiffs,

vs.

DIRK KEMPTHORNE, Secretary,
U.S. Department of the Interior,
et al.

Defendants.

No. 05-CV-1207-OWW

HEARING RE INTERIM REMEDIES
DAY 3

Fresno, California

Thursday, August 23, 2007

REPORTER'S TRANSCRIPT OF PROCEEDINGS

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EXHIBITS

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Marked	
13	679

DEFENDANTS'

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DWR F	596

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1 Thursday, August 23, 2007

Fresno, California

2 8:31 a.m.

3 THE COURT: We're going back on the record in NRDC
4 versus Kempthorne. We have Dr. Swanson on the witness stand.
5 Mr. Lee, you're cross-examining.

6 Good morning.

7 THE WITNESS: Good morning.

8 CHRISTINA SWANSON,
9 called as a witness on behalf of the Plaintiffs, having been
10 previously sworn, testified as follows:

11 CONTINUED CROSS-EXAMINATION

12 BY MR. LEE:

13 Q. Good morning, Dr. Swanson.

14 A. Good morning.

15 Q. I just have a few more questions on the issue of reverse
16 flow in Old and Middle River and project salvage and that
17 should conclude my cross-examination today.

18 THE COURT: Is Mr. Lee's mike on? Can you tap it?
19 It is on. All right. Thank you.

20 BY MR. LEE:

21 Q. Dr. Swanson, on page 25 of your August 13th supplemental
22 declaration states, and I quote, "In their analysis, the
23 California Department of Water Resources arbitrarily
24 petitioned the winter salvage and flow data into single
25 calendar months and used data from only January and February.

1 This has the effect of artificially splitting data from a
2 single year's adult delta smelt salvage event into two
3 separate data sets in some years, (e.g., in 1996, 2000 and
4 2002. See July 9th, '07, Johns declaration, Exhibits B and
5 C.) And ignoring data from years in which take occurred
6 before January or after February.

7 Now, in your earlier declaration, your July 23rd,
8 2007 declaration, which is Plaintiff's 11. You reproduced as
9 Figure 8 on page 12 a regression analysis prepared by Dr. Pete
10 Smith of the US Geological Survey which purports to describe,
11 quote, "The relationship between the numbers of delta smelt
12 taken at State Water Project and CVP export facilities and
13 combined Old and Middle River flows."

14 Could you please turn to Figure 8 on page 12 of your
15 declaration.

16 A. I have.

17 Q. Does Dr. Smith's analysis in Figure 8 include data from
18 years in which take occurred before January or after February?

19 A. No.

20 Q. Okay. Doesn't Dr. Smith's analysis in Figure 8 solely
21 rely on data from the months of January and February?

22 A. It appears so.

23 Q. Does your July 23rd, 2007 declaration display any graph,
24 other than Pete Smith's regression analysis, to show the
25 statistical relationship between Old and Middle River flows

1 and project salvage?

2 A. No.

3 Q. Do any of plaintiffs' proposed fish actions designed to
4 minimize reverse flow in Old and Middle River require
5 corrective actions by the projects for the months of November
6 and December?

7 A. For December, potentially yes in response to environmental
8 triggers indicating the upstream migration of delta smelt.

9 Q. Wouldn't that December date start December 25th?

10 A. I do not believe that's the way it's specified in mine.

11 Q. Could you please refer to your declaration.

12 THE COURT: Page and line.

13 THE WITNESS: I beg your pardon. You're correct.

14 The timing of the action four, winter action for pre-spawning
15 adult is specified to begin December 25th and extend through
16 February.

17 BY MR. LEE:

18 Q. And that would be the attachment to your August 13th, 2007
19 declaration, Petitioners' Exhibit Number 4, I believe.

20 Plaintiffs' Exhibit Number 4.

21 A. Oh, right. Yes.

22 Q. Let's stay for a while in Figure 8, if we could, in the
23 July 23rd declaration. Have you had a chance to read the
24 August 3rd, 2007 declaration of Stephen Ford, document 430, in
25 this litigation?

1 A. Yes.

2 MR. LEE: Your Honor, the Department of Water
3 Resources would like to mark and identify the declaration of
4 Stephen Ford in support of intervenor Department of Water
5 Resources remedy proposal document 430.

6 THE COURT: What is it, E?

7 MR. WALL: Which exhibit?

8 THE CLERK: Yes.

9 THE COURT: Department of Water Resources E, it's the
10 Ford declaration. Has it got a docket number on it?

11 MR. LEE: Yes, it does, sir. Docket number 430.

12 (Defendant's Exhibit DWR E was marked for
13 identification.)

14 THE COURT: All right. It's been marked for
15 identification. Do you have it, Dr. Swanson?

16 MR. LEE: I have it here. May I approach the
17 witness?

18 THE COURT: Yes.

19 BY MR. LEE:

20 Q. In paragraph 26, page 8 of the Ford declaration, Mr. Ford
21 discusses Figure 8 and states that, quote, "One concern about
22 this analysis is that it calculated and displayed the
23 relationship as though positive Old and Middle River flows
24 which occurred in 1997 and 1998 were of zero value."

25 Do you see that language --

1 A. I do.

2 Q. -- Dr. Swanson?

3 Were you aware that Dr. Smith's analysis in Figure 8
4 altered the 1997 and 1998 data points in Figure 8 to reflect a
5 zero value when the actual value showed that those data points
6 were positive values?

7 A. Yes.

8 Q. I understood your testimony from yesterday, Dr. Swanson,
9 to be that the relationship in Figure 8 would become
10 non-linear if the graph included the actual data points for
11 1997 and 1998. Is that a correct characterization of your
12 testimony?

13 A. To be certain, I'm not exactly certain whether that's what
14 I said. Is it possible to get that read back? Or should
15 I --

16 THE COURT: It's probably too difficult at this time.
17 We could find it, but it would take some time.

18 THE WITNESS: May I then re-interpret my --

19 THE COURT: Certainly. You may give your present
20 answer. If you don't remember, give that answer.

21 THE WITNESS: In my view, inclusion of those points
22 and representing them on the graph extending the axis, the X
23 axis into the positive Old and Middle River flows, if you were
24 to try to draw a line connecting all those points or do some
25 sort of regression analysis, a linear regression would not

1 explain the relationship very well. You would either need to
2 do some sort of a stepped linear regression, where you run the
3 straight line through part of the points and then analyze the
4 other points separately, or do a polynomial or curvilinear
5 relationship there.

6 However, inclusion of those points either at the zero
7 point or as representing Old and Middle River flows as
8 positive values does not change my interpretation of the
9 meaning of the graph with regard to potential management
10 actions.

11 MR. LEE: Thank you, Dr. Swanson.

12 Q. When did you become aware that Figure 8, as prepared by
13 Dr. Pete Smith, included this altered data point?

14 A. I do not recall specifically.

15 Q. Do you recall generally? Would it have been before July
16 or would it have been before August?

17 A. It was before I used the graph and included it in my
18 analysis and my declaration.

19 Q. All right. Could you please look at Plaintiffs' Exhibit,
20 then, 11, which is your July 23rd declaration. And on page
21 12, line 18, there is a paragraph that commences with the
22 words, quote, "Figure 8." Do you see that paragraph on line
23 18, page 12?

24 A. Page 12. Oh, the caption of the figure.

25 Q. Yes.

1 THE COURT: Line 18.

2 BY MR. LEE:

3 Q. Line 18. Have you found that line, Dr. Swanson?

4 A. I have.

5 Q. Could you please read the second sentence in that
6 paragraph?

7 A. "Delta smelt take increases linearly with increasing
8 magnitudes of negative flow on Old and Middle River."

9 Q. Okay. If -- you're aware of Dr. Smith's graph containing
10 altered data points. Why did you not alter or explain that
11 the relationship was no longer a linear relationship, but some
12 different kind of relationship when you submitted this
13 declaration?

14 A. The relationship of take with negative flows on Old and
15 Middle River is linear.

16 Q. Is there a reason that you do not explain in your
17 declaration that the data, in fact, for these two years were
18 altered and did not reflect the actual data?

19 A. It's not necessary to even discuss those data since the
20 relationship I was examining was the relationship between take
21 and negative flows on Old and Middle River.

22 Q. Okay. Thank you, Dr. Swanson.

23 I'd like to now talk briefly about the plaintiffs'
24 actions five, six and seven. And would like you to take a
25 look at Plaintiffs' Exhibit Number 4, which is your

1 declarati on of August 13th, 2007.

2 And if you would go to the immediate appendix, which
3 I believe is the plaintiffs' revised proposal. And take a
4 look at action number six. Could you please read the
5 description of action number six.

6 A. I will read the text under the column labeled "Action."
7 It is, "Implement the Vernalis Adaptive Management Plan (VAMP)
8 San Joaquin River flow enhancement and SWC and CVP export
9 curtailment as specified under the VAMP experimental design."

10 Q. Generally speaking, when is the so-called VAMP period, Dr.
11 Swanson?

12 A. Usually it's scheduled to occur between April 15th and May
13 15th.

14 Q. Is the Vernalis Adaptive Management Plan currently being
15 implemented by the Central Valley Project and the State Water
16 Project and the other parties to the VAMP agreement?

17 A. That is my understanding.

18 Q. Do you have any evidence to present to this court that the
19 Vernalis Adaptive Management Plan will not be implemented
20 within the next 12 to 18 months?

21 A. No.

22 Q. Why then are you asking this court to mandate the VAMP
23 requirement as part of your action plan?

24 A. The VAMP represents what I consider to be regularly
25 scheduled operations which have been shown to be protective

1 for delta smelt during the period which it is implemented. In
2 this interim remedy, I essentially explicitly stated, by
3 listing it as an action, my assumption that it would continue
4 to be implemented.

5 Q. But your testimony is you have no evidence that it won't
6 be implemented in the next 12 to 18 months?

7 MR. WALL: Objection. Asked and answered.

8 THE COURT: No, it's a different question.

9 Overruled. Do you have any such information?

10 THE WITNESS: No.

11 BY MR. LEE:

12 Q. I'd like to now move, Dr. Swanson, to actions number five
13 and seven. Actions five and seven of the plaintiffs' proposal
14 also contained in the appendix of Plaintiffs' Exhibit Number 4
15 contain a recommendation that states, quote, "Manage water
16 project operations to achieve combined Old and Middle River
17 flows levels of between negative 750 and negative 2250 cubic
18 feet per second (five day average)."

19 In action five, under the right-hand column labeled
20 "Source and Rationale," the first sentence within that column
21 reads, "Action is based on: a) results of analyses by Dr.
22 William Bennett that showed that only delta smelt hatch during
23 the VAMP survived to the summer and fall; and b) average Old
24 and Middle River flows measured during the VAMP for the 1999
25 through 2005 and 2007 period (average 1,515 cfs) (Figure 9)."

1 Is a similar sentence included under the "Source and
2 Rationale "column for action number 7, Dr. Swanson?

3 A. Yes.

4 Q. Is the reference to figure 9 in the plaintiffs' action
5 plan for actions number five and number seven a reference to
6 figure 9 contained in your July 23rd, 2007 declaration that
7 would be Plaintiffs' Exhibit 11, on page 12?

8 A. It is.

9 Q. Could you please turn to figure 9.

10 Could you explain to the Court what is on the Y axis
11 and the X axis of figure 9?

12 A. This graph, figure 9, shows on the Y axis the combined
13 flows on Old and Middle River extending from minus -- I beg
14 your pardon, minus 10,000 cubic feet per second through zero
15 to positive 2000. On the X axis, it shows the months,
16 January, February, March, the first half of April or the first
17 part of April until the VAMP was implemented.

18 The next point on the X axis is the VAMP period, that
19 31-day period when exports are reduced and San Joaquin flows
20 are increased.

21 The next point to the right of that is whatever
22 remains in the month of May after the VAMP has been completed.

23 And the final point on the X axis is for the month of
24 June.

25 Q. Thank you, Dr. Swanson. What was the averaging period

1 used to determine the average Old and Middle River flows under
2 figure 9?

3 A. For each of those months, as well as the shorter periods,
4 I used daily Old and Middle River flows for each 30 or 31-day
5 period and I averaged the daily values.

6 Q. So you averaged the daily values and then is the value
7 reflective of then the monthly average of those average daily
8 values?

9 MR. WALL: Objection as to form.

10 THE COURT: The objection is overruled. You may
11 answer it.

12 THE WITNESS: For this graph, each of those points
13 for a single month represents the average of the monthly
14 average for that month for each of the years that I included
15 in the analysis, which was 1999 through 2005 plus 2007. I
16 specifically excluded 2006 because it was an extremely wet
17 year.

18 The bars are standard deviations plus or minus one
19 standard deviation, which reflects the variation between the
20 months -- excuse me, between the years and not the variation
21 of Old and Middle River flows within any single month in a
22 single year.

23 BY MR. LEE:

24 Q. At any point in this figure 9 in this chart, graph, excuse
25 me, was a five-day average used?

1 A. Not in this graph.

2 Q. Does figure 9 disclose that during the eight-year VAMP
3 period that you display here, the projects maintain Old and
4 Middle River flows between a range of negative 750 and
5 negative 2,250 based on a five-day running average?

6 A. During which period? The calculation was not made using
7 that calculation.

8 THE COURT: And what is your question? Does your
9 question assume that they maintain, present tense, or that
10 they maintained, past tense?

11 MR. LEE: Maintained.

12 THE COURT: Was VAMP even in place eight years ago?

13 MR. LEE: The question was during the time period
14 which the chart accounts for, Your Honor, was at any
15 point -- does the data display or disclose that Old and Middle
16 River reverse flows were maintained, in past tense, at
17 negative 750 and negative 2,250 based upon a five-day running
18 average.

19 THE COURT: All right. So you're assuming that to be
20 the fact.

21 MR. LEE: No, I'm asking her whether it is the fact.

22 THE COURT: All right. Do you understand the
23 question?

24 THE WITNESS: I can -- I believe I do and I can try
25 to answer it based on my analysis.

1 THE COURT: All right. So that we have it clear, if
2 you would, please, state your understanding of what you're
3 being asked to answer and then answer it.

4 THE WITNESS: I believe Mr. Lee is asking whether I
5 determined, during previous year implementation of the VAMP,
6 did Old and Middle River flows during the month-long VAMP in
7 all or any of those years range between minus 750 cubic feet
8 per second and minus 2250 cubic feet per second.

9 BY MR. LEE:

10 Q. Based upon five-day running average.

11 A. Based on a five-day running average. No, I did not
12 determine that.

13 Q. Does figure 9 disclose any year, since the implementation
14 of the Vernalis Adaptive Management Plan, that the projects
15 have maintained during the VAMP period Old and Middle River
16 flows between the range of negative 750 cubic feet per second
17 and negative 2,250 cubic feet per second on a five-day running
18 average?

19 A. No, the figure was not intended to do that.

20 THE COURT: And what is your opinion of the benefit
21 of maintaining such flows on a five-day running average?

22 THE WITNESS: My objective with specifying use of a
23 five-day running average for the calculation and measuring of
24 compliance with managed Old and Middle River flows was to
25 require that the operations of the projects, which we're

1 managing for these Old and Middle River flows, not allow large
2 variations in the flow over time. It's intended to minimize
3 variation in flows from the target flow that I identified as
4 necessary to protect the delta smelt.

5 THE COURT: And is this then actual or is it
6 projected?

7 THE WITNESS: This --

8 THE COURT: Figure 9.

9 THE WITNESS: Figure 9 is based on actual data where
10 monthly averages were calculated from daily values and then
11 the points represent the average of multiple years of the same
12 month.

13 THE COURT: And so two questions are raised by that.
14 First, to move this to a five-day average, is there anything
15 required except what is normally done to operate those
16 projects? In other words, is there any more in terms of
17 cutting down flows or any other actions that can be taken?

18 THE WITNESS: The analysis in this graph was designed
19 to identify what the target level of protection should be.
20 The five-day average is intended to help the projects operate,
21 not requiring to meet in a single day the target, but to allow
22 some variation to account for variability in Old and Middle
23 River flows typically accountable for tidal fluxes and minor
24 variations in project operations. If --

25 THE COURT: Go ahead. I'm sorry.

1 THE WITNESS: Quite all right. If these monthly
2 averages were recalculated using the average of the five-day
3 averages of Old and Middle River flows, assuming that you
4 slipped it five days to account for the fact that you're
5 taking five days before you get a single value for each of the
6 months, the overall levels of Old and Middle River flow are
7 extremely similar.

8 After reading the declaration expressing the concern
9 over the five-day average, I did do that recalculation and
10 found that the results were extremely similar.

11 THE COURT: And so, the second question that is
12 raised by this inquiry -- I'm not trying to oversimplify, but
13 it looks, just looking at the graph, just in a very rough
14 sense that the averages here in the negative 4,000 cubic feet
15 per second of flows, again, based on monthly rather than a
16 five-day average. And so what does it take to get to the
17 target? In terms of operation. To reduce the flows to the
18 level that you recommend.

19 THE WITNESS: Are you asking me what kind of
20 modifications need to be made --

21 THE COURT: Yes.

22 THE WITNESS: -- on a water project operations?

23 Old and Middle River flow levels, the degree to
24 which -- the magnitude of their reverse or negative flows are
25 a function of multiple factors. Exports affect the magnitude

1 of negative flows, but it is not a direct linear relationship.
2 If you cut exports by a fixed amount, it will not necessarily
3 reduce negative flows by the same amount.

4 In addition to exports affecting negative flows,
5 negative flows, the magnitude of negative flows is also
6 affected by the amount of inflow to the Delta from San Joaquin
7 River. The magnitude of Old and Middle River flows are, as I
8 understand it, also affected by the operations of south Delta
9 agricultural barriers. And with the tidal operation of the
10 barriers exacerbating or making negative flows worse.

11 To some extent -- those are the three variables that
12 I know have been used to try to predict the level of negative
13 flows. But I did not determine the specific quantitative
14 relationship among those variables to predict what negative
15 flows would be.

16 THE COURT: Thank you.

17 BY MR. LEE:

18 Q. If -- Dr. Swanson, if your actions five and seven had a
19 range of negative 750 cubic feet per second to negative 2,250
20 cubic feet per second on a monthly average, in your opinion
21 would that produce significant or allow for significant
22 changes in project operations for a similar range on a
23 five-day running average?

24 A. I will admit I do not understand that question.

25 THE COURT: I think -- is your question if the target

1 flow levels are achieved on a five-day running average
2 basis --

3 MR. LEE: At -- let me try to rephrase the question,
4 Your Honor.

5 THE COURT: Yes.

6 BY MR. LEE:

7 Q. If the target flows are achieved on a five-day running
8 average, would that be -- would that produce different project
9 operations than if the target flows were achieved on a monthly
10 average?

11 MR. WALL: Objection. It's an incomplete
12 hypothetical.

13 THE COURT: Can you answer the question in its
14 present form?

15 THE WITNESS: No.

16 THE COURT: Sustained.

17 MR. LEE: I'll withdraw the question, Your Honor.
18 I have no more questions for this witness.

19 THE COURT: Thank you very much.

20 Mr. Wilkinson, do you wish to cross-examine?

21 MR. WILKINSON: Thank you, Your Honor.

22 MR. LEE: Oh, Your Honor, excuse me, I would like to
23 move into evidence the Ford declaration.

24 THE COURT: That's Exhibit E.

25 MR. WALL: Your Honor, we'd object to that. He's a

1 non-testifying witness and we haven't had the opportunity to
2 cross-examine him.

3 THE COURT: All right. It does appear to be hearsay.
4 Is there some non-hearsay purpose for which you offer it?

5 MR. LEE: I offer it in response to Dr. Swanson
6 having read the material and relied upon the material for her
7 opinions today.

8 THE COURT: All right. I will permit the exhibit to
9 be received in evidence for the limited purpose of
10 showing -- to the extent you've identified it, it's not going
11 to be the whole report, any information that Dr. Swanson
12 relied on as part of her opinions and that affected her state
13 of mind in reaching those opinions.

14 MR. LEE: Thank you.

15 THE COURT: That's the only purpose for which, not
16 for the truth.

17 (Defendant's Exhibit DWR E was received.)

18 MR. LEE: Thank you, Your Honor.

19 CROSS-EXAMINATION

20 BY MR. WILKINSON:

21 Q. Good morning, Dr. Swanson.

22 A. Good morning.

23 Q. I'm Greg Wilkinson, I represent the State Water
24 Contractors and I do have a few questions for you.

25 I'd like to ask, to begin, was it your testimony

1 yesterday that we cannot make a meaningful estimate of delta
2 smelt population?

3 THE COURT: That's today? Or at some other time?
4 It's ambiguous as to time.

5 BY MR. WILKINSON:

6 Q. I'm sorry. Was it your testimony yesterday that we cannot
7 make a meaningful estimate of the population of delta smelt?

8 THE COURT: And I'm still asking --

9 MR. WILKINSON: Yes, sir.

10 THE COURT: I know when her testimony was given.
11 Does your question ask her to estimate the population as of
12 today or as of some other time?

13 MR. WILKINSON: Understood.

14 Q. Dr. Swanson, are we able to make a meaningful estimate of
15 the population abundance of delta smelt today?

16 A. I'm going to assume that you mean today --

17 Q. Currently.

18 A. -- to mean by using the most recent survey data --

19 Q. That's correct.

20 A. -- that we have available.

21 Q. That's correct.

22 A. And I'm going to assume that by "meaningful," you mean
23 accurate.

24 Q. That's correct.

25 A. No.

1 Q. Now, you relied in your testimony, did you not, on Dr.
2 Bennett's 2005 paper?

3 A. As a reference, yes.

4 Q. That would be Plaintiffs' Exhibit 2 in this proceeding.
5 Do you recall that?

6 A. I can't swear to the exhibit number.

7 Q. All right. Let me provide you a copy of that, Dr.
8 Swanson. Hang on just a second.

9 THE COURT: Have you got the exhibits up there, Dr.
10 Swanson?

11 THE WITNESS: I do not believe I have that exhibit,
12 Your Honor.

13 MR. WILKINSON: May I approach the witness, Your
14 Honor?

15 THE COURT: Yes, you may.

16 BY MR. WILKINSON:

17 Q. When you referred to Dr. Bennett's paper yesterday in your
18 testimony, Dr. Swanson, is that the paper you were referring
19 to?

20 A. The one I referred to, Bennett 2005, yes, it is.

21 Q. Dr. Bennett provided the estimates of delta smelt
22 population abundance in his paper; did he not?

23 A. He did.

24 Q. And those are set forth at pages 8 and 9 of his paper,
25 Plaintiffs' Exhibit 2; is that right?

1 A. As well as in the text.

2 Q. Now, in developing his population abundance estimates, Dr.
3 Swanson, Dr. Bennett assumed that the delta smelt occupy a
4 constant volume of habitat at different stages in among years;
5 did he not?

6 A. Yes.

7 Q. And he also assumed that when he made his population
8 abundance estimates that gear efficiency associated with these
9 various surveys that he was using the data from, that the gear
10 efficiency was 100 percent; isn't that right?

11 A. He states that he did not account for size selectivity by
12 the sampling gears.

13 Q. And that assuming that gear efficiency is 100 percent or
14 constant?

15 A. He makes no reference to making a correction for gear
16 efficiency.

17 Q. So he made no correction for gear size?

18 A. Not that he reports in his paper.

19 Q. Is it also true, Dr. Swanson, that Dr. Bennett provided
20 the raw catch of delta smelt indicated in the surveys by
21 different stations and divided that by the estimated volumes
22 of water that was first sampled?

23 A. I believe that's the method he used, yes.

24 Q. And Dr. Bennett also weighted his estimates by the
25 total volume of the delta smelt habitat including Suisun

1 Bay and the Delta; is that right?

2 A. Yes.

3 Q. Dr. Swanson, are these the same methods and assumptions
4 that were followed by Dr. Hanson in his population abundance
5 estimates?

6 A. The assumptions are similar. I do not know whether they
7 used the same volume estimates for the regions in which the
8 delta smelt were collected at the various survey stations.

9 Q. You don't know one way or the other; is that right?

10 A. With regard to what habitat volume was applied to catch
11 data from specific -- I don't know whether those matched.

12 Q. Assuming that they did not match, is it true that the
13 methodology that was used by Dr. Hanson is the same that was
14 used by Dr. Bennett?

15 A. It appears similar, yes.

16 Q. And is it also true that Dr. Bennett based his estimates
17 on data from the 20 millimeter survey and the Summer Towner
18 Survey?

19 A. No.

20 Q. Would you take a look at page 7. Dr. Swanson, on the
21 right-hand column of that page there's a paragraph that begins
22 "To address the need" and so forth. And it says,
23 "Essentially, abundance estimates for delta smelt in the TNS,
24 MWT and 20-mm (post larvae) surveys were calculated" and so
25 forth. Does that suggest to you that the 20 millimeter survey

1 data was used?

2 A. It does. My answer was based on the results which he
3 presented, which are only for the midwater trawl and the
4 townet survey.

5 Q. Then is it accurate to say that Dr. Bennett did use the 20
6 millimeter survey data in developing his population abundance
7 estimate?

8 A. It's accurate to say that he reports that he made
9 calculations, but no results are reported.

10 Q. When he references the 20 millimeter survey in his paper,
11 what is your understanding of the import of that reference?

12 A. As I understand the text in his paper, he used data from
13 the three surveys to calculate abundance estimates for delta
14 smelt. In the paper, he reports results of those estimates.
15 As far as I am able to determine based on my past reading of
16 the paper and review of it briefly right now, only for the
17 Fall Midwater Trawl survey and the Summer Townet Survey.

18 Q. Dr. Swanson, we are on page seven. Would you go to the
19 paragraph up above and read the last sentence in that
20 paragraph. The one that starts "Nonetheless."

21 A. "Nonetheless, developing an abundance estimate and
22 addressing sampling effectiveness will be crucial for
23 improving our understanding of the population status, as well
24 as the limitations on delta smelt abundance."

25 Q. Do you agree with that statement, Dr. Swanson?

1 A. Using estimates of delta smelt population size, the
2 numbers of fish, has some utility for the kind of exercise
3 that Dr. Bennett reported in his paper, which was to use those
4 results to help conduct a population viability analysis and to
5 estimate overall mortality rates from lifestage to lifestage.
6 Dr. Bennett correctly identified all of the unrealistic
7 assumptions that were made and characterized his estimates
8 with the appropriate level of uncertainty using 95 percent
9 confidence intervals.

10 He did not suggest that the results of the estimates
11 were particularly useful for identifying individual within a
12 single year impacts on the species, nor did he report any kind
13 of results like that.

14 Q. You believe his population abundance estimates are
15 reliable?

16 A. I believe he has portrayed them to represent the high
17 level of uncertainty associated with the absolute numbers that
18 he's calculated. Therefore, he has correctly identified and
19 characterized them as not necessarily accurate representations
20 of the total numbers of delta smelt. I am uncertain what you
21 mean by the word "reliable."

22 Q. I believe that was the word that you used yesterday. If
23 I'm wrong, please correct me.

24 A. They're not reliable for making the kinds of calculations
25 that, for example, Dr. Hanson tried to do in his declaration.

1 Q. You mentioned yesterday, Dr. Swanson, that you had
2 submitted petitions to the Fish & Wildlife Service and the
3 California Department of Fish & Game to uplist the delta smelt
4 from being a threatened species to being an endangered
5 species; is that correct?

6 A. It is.

7 Q. And were you one of the co-authors of the petition?

8 A. I was.

9 Q. I'd like to have marked as State Water Contractors next in
10 order, I believe it's Exhibit D.

11 (Defendant's Exhibit SWC D was marked for
12 identification.)

13 BY MR. WILKINSON:

14 Q. Dr. Swanson, I've marked as Exhibit D a document that is
15 entitled Emergency Petition to List the Delta smelt as an
16 Endangered Species under the Endangered Species Act. Do you
17 recognize that document?

18 A. I do.

19 Q. Is this the emergency petition that we've just been
20 discussing that you co-authored?

21 A. This is the petition that was submitted to the Fish &
22 Wildlife Service, yes.

23 Q. All right. And in making this petition and presenting it
24 to the Fish & Wildlife Service, Dr. Swanson, did you use the
25 best available scientific data?

1 A. Yes.

2 Q. I'd like you to turn to page eight in the petition. And
3 in the last paragraph on that page, it looks like it's the
4 second sentence, you cite an abundance estimate of 800,000
5 fish by Bennett. Correct?

6 A. Yes.

7 Q. And if we turn to page 10, there's a paragraph that's
8 entitled "Current abundance." Would you read that paragraph,
9 please.

10 A. "In 2002, the delta smelt population again experienced a
11 drastic population decline, dropping more than 80
12 percent from levels measured during the previous
13 three years (1999 to 2001 average) (based on the Fall
14 Midwater Trawl" -- oh, sorry, "(Based on the Fall
15 Midwater Trawl; the decline was 77 percent based on
16 the 2003 Towner Survey index compared to the
17 1999-2002 average." Then it references Table 1 and
18 Figure 3.
19 "Since then, the population has continued to decline,
20 falling to what was then a record low in 2004 (Fall
21 Midwater Trawl equal to 74 or an estimated 60 to
22 70,000 adult fish.) And then plummeting again by 65
23 percent to a Fall Midwater Trawl index of just 26 in
24 2005, the lowest abundance index" -- excuse me:
25 Abundance level ever recorded for sub-adult and adult

1 delta smelt. Based on Bennett's (2005) analyses, the
2 2005 Fall Midwater Trawl index roughly corresponds to
3 fewer than 25,000 adult fish."

4 Q. Do you believe the numbers that you've just read into the
5 record are correct?

6 A. As I've stated in the -- excuse me, in the document here,
7 they are based on Bennett's 2005 analysis. They are rough
8 estimates as they are so stated here. And they represent,
9 based on his analysis, the only peer review approach and
10 results for making this kind of first order estimate as it was
11 described by Dr. Bennett.

12 Q. Did you provide the Fish & Wildlife Service with any
13 confidence intervals on the numbers that you gave to them?

14 A. No.

15 Q. Why not?

16 A. These are not calculated numbers on my part. They were
17 drawn by visual examination from his graphs and used simply
18 for illustrative purposes, not for any calculations.

19 Q. Didn't Bennett provide confidence intervals in his paper?

20 A. He did.

21 Q. You didn't think it was appropriate to provide those same
22 intervals to the Fish & Wildlife Service?

23 A. For the purposes in this document in which those numbers
24 were used, I felt it was not necessary.

25 Q. Are these numbers you've indicated are Bennett's numbers,

1 not yours; is that right?

2 A. Yes.

3 Q. And they were developed by Bennett using the assumptions
4 that we've discussed earlier about gear selectivity and the
5 like; is that correct?

6 A. Yes.

7 Q. I'm going to refer you back to Dr. Bennett's paper, Dr.
8 Swanson. Did Dr. Bennett, in his paper, recognize whether
9 there were any other individuals who were attempting to
10 describe the population abundance of delta smelt?

11 A. I believe he did.

12 Q. Let me turn your attention, then, to page 37 of the
13 Bennett paper. Do you have that page in front of you?

14 A. I do.

15 Q. In the left-hand column, near the bottom of the page, it
16 appears that Dr. Bennett is describing population abundance
17 estimates that were taken by several individuals. Do you see
18 that?

19 A. Yes.

20 Q. There's a Z. Hymanson. Is that Zachary Hymanson?

21 A. I believe it is.

22 Q. There's a DWR mention, I assume that's the Department of
23 Water Resources. And there's a C. Hanson; would that be Dr.
24 Charles Hanson?

25 A. I assume it is.

1 Q. It appears that Dr. Bennett goes on and says -- I'll read
2 it. "These approaches similarly extrapolated densities of
3 fish from the monitoring surveys to the volume of
4 habitat in the south Delta region, and provided
5 estimates of abundance ranging from 4 to 7 million
6 individuals. Although the relative merits of each
7 estimate were subsequently debated, they all fell
8 within an order of magnitude indicating some degree
9 of precision with the extrapolation approach similar
10 to the one employed here)."

11 Do you disagree that Dr. Hanson's approach to
12 estimating population abundance is similar to that used by Dr.
13 Bennett?

14 A. Yes.

15 Q. You do disagree?

16 A. I'm sorry. I thought you said "agree." Please repeat the
17 question.

18 Q. Do you disagree with the notion that Dr. Hanson's approach
19 to estimating population abundance is similar to the approach
20 utilized by Dr. Bennett?

21 A. I believe I had already stated that I thought it was
22 similar.

23 Q. Thank you. I'd like you to turn to page 53 of the Bennett
24 report, Dr. Swanson. My understanding is that these graphs
25 that appear on this page are Dr. Bennett's population

1 viability analysis; is that right?

2 A. They are a graphical representation of the results of
3 those analyses.

4 Q. And if we look at the graph that's the larger graph that's
5 on that page at the bottom, there are, it looks to be three
6 tiers of curves. Do you see that?

7 A. I do.

8 Q. Now, am I correct that the bottom tier assumes that there
9 are 80,000 adult delta smelt in the estuary and it attempts to
10 calculate the time that might be required to render that
11 population of fish extinct; is that correct?

12 A. No.

13 Q. Okay.

14 A. I believe --

15 Q. Tell me where I'm wrong, please.

16 A. I believe the top tier graph uses as its estimated
17 quasi-extinction level 80,000 fish. And the bottom tier, G
18 and H, used as the quasi-extinction level 800 fish.

19 Q. So in other words, if the population is 80,000 fish,
20 there's an 85 -- a 50 percent probability that that population
21 will go extinction in 1.5 years?

22 A. No, that is not a correct interpretation of this graph.

23 Q. All right. Please enlighten me about the graph. If the
24 bottom -- the top graph, C on the left-hand side, assumes a
25 population 80,000 fish; is that right?

1 A. It assumes that 80,000 fish in the population is the
2 quasi-extinction level assumed by Dr. Bennett to -- that's the
3 target of the extinction risk, not the starting place.

4 What Dr. Bennett has done in his population viability
5 analysis is he's used, in the case of graph C, the entire data
6 set from 1967 through 2003, I believe. And based on the
7 trends and variability in population abundance over that
8 period, he then applied population viability analysis to ask
9 what is the probability that that population will fall below
10 80,000 fish in what period.

11 This graph provides two results. The first
12 asks -- or the first result says that there's a probability
13 that the delta smelt population will fall below his first
14 level, his highest level of quasi-extinction of 80,000 fish.
15 That there's a 50 percent chance that that will happen within
16 1.5 years. And that was 1.5 years after 2003. And that
17 within 20 years there was an 85 percent chance that the
18 population would fall below 80,000 fish. That is the correct
19 interpretation of this graph.

20 Q. Dr. Swanson, given that understanding, is it possible to
21 use these graphs to determine the possibility of extinction of
22 the delta smelt population over the next year?

23 A. You need to define what you mean with regard to population
24 size as extinction, which is what Dr. Bennett did here. He
25 said, well, if a population as low as 80,000 fish is

1 considered to be functional extinction of the species, then he
2 applied that to his analysis and he came up with these
3 results.

4 Alternatively, he said -- he alternatively defined
5 extinction, and that's why he used that term, quasi-extinction
6 because we don't really know what represents a population
7 below which they can fall from which they can't at all
8 possibly recover.

9 The second level was 8,000 fish, an order of
10 magnitude lower. And the third level of quasi-extinction was
11 how long would it take and what's the probability that that
12 would occur within some number of years for the population to
13 fall to just 800 fish.

14 Q. Am I correct in understanding, then, that these graphs do
15 not tell us the probability that the current population of
16 fish -- which you've estimated in your petition to the Fish &
17 Wildlife Service as being 25,000 adults, these graphs will not
18 tell us the probability of those fish becoming extinct within
19 the next year; is that right?

20 MR. WALL: Objection. Misstates the witness'
21 testimony.

22 BY MR. WILKINSON:

23 Q. Did you understand the question? Well --

24 THE COURT: Do you understand the question?

25 THE WITNESS: May I perhaps restate the question?

1 THE COURT: No, you can't do that.

2 THE WITNESS: Then you'll have to restate it. I'm
3 sorry.

4 THE COURT: The objection is sustained.

5 MR. WILKINSON: I'll try to do that.

6 Q. Dr. Swanson, you estimated the population of smelt at
7 25,000 in your petition to the Fish & Wildlife Service;
8 correct?

9 A. I based that estimate on Bennett's work and used that
10 figure in the document.

11 Q. All right. Does Dr. Bennett's Figure 34 on page 53 give
12 us the ability to determine probability that that population
13 of fish that you've estimated to the Fish & Wildlife Service
14 will become extinct within the next year?

15 A. If you define "extinction" using one of the three levels
16 that he did and you assume that the probability of extinction
17 as calculated and depicted as results in this graph is the
18 same now as it was when he did these analyses, you could.

19 Q. All right. Let's make those assumptions. What does Dr.
20 Bennett's graph tell us about the probability of extinction of
21 the population that you estimated to the Fish & Wildlife
22 Service within the next year?

23 A. If you use the level of quasi-extinction, the top, the
24 highest level that Dr. Bennett --

25 Q. That's the 80,000.

1 A. The 80,000 fish. And you assume that his population
2 estimates relative to the Fall Midwater Trawl index are
3 roughly accurate, then using the 80,000 level of number of
4 fish, the population has already fallen below that.

5 Q. So no matter what we do at this point, we can't save them;
6 is that right?

7 A. No. That is not a correct interpretation.

8 Q. All right. What about the middle graph?

9 A. The middle graph assumes that quasi-extinction of the
10 species corresponds to a population of just 8,000 fish. And
11 I'm trying to figure out how to interpret that.

12 Q. Well, on the X axis, it's years; am I right? And on the Y
13 axis, it's probability of quasi-extinction. Wouldn't it be
14 about five percent, Dr. Swanson?

15 A. This graph says that based on the population trends that
16 we have observed so far, there's a 50 percent probability that
17 the population will fall below 8,000 in 20 years. And in
18 order to interpolate to a shorter period of time -- is that
19 correct, that you're asking me to interpolate --

20 Q. I'm asking you for a year, which is the duration of the
21 period you're dealing with extinction.

22 A. One of the things that you'll notice Dr. Bennett has done
23 on this graph is that he has provided confidence limits around
24 the --

25 Q. I understand that. But I'm asking you to look at the

1 curve that Dr. Bennett has drawn here. Would you do that and
2 tell me what the probability of extinction using the middle
3 graph is over the next year?

4 A. I am not familiar enough with these analyses to make that
5 interpolation and extrapolation of these graphs.

6 Q. Thank you. Dr. Swanson, you testified yesterday, I
7 believe -- again please correct me if I'm wrong -- that Dr.
8 Hanson's population abundance estimate, using 20 millimeter
9 survey data, was erroneous because he assumed that delta smelt
10 were distributed throughout the water column; is that an
11 accurate recollection of your testimony?

12 A. That was one of my concerns with regard to his assumption,
13 yes.

14 Q. And is it your contention that juvenile smelt sampled in
15 the 20 millimeter survey reside only near the surface of the
16 water?

17 A. The best available information that we have on delta smelt
18 distribution within the water suggests that the majority of
19 the population for those life history stages that have been
20 sampled are near the surface. I do not know whether similar
21 distributional studies have been done with these early larval
22 life history stages.

23 Q. Do you know how the 20 millimeter survey is actually
24 performed?

25 A. Only in general terms.

1 Q. Is it performed using an oblique tow?

2 A. I could not answer without referring to the metadata.

3 Q. You don't know what the gear is that's used in the 20
4 millimeter survey; is that right?

5 A. The specifics of the gear, no.

6 Q. Was it also your testimony, Dr. Swanson, that the decline
7 in smelt abundance reported by Dr. Hanson from 1.8 million
8 fish, using survey 9 of the 20 millimeter survey, to 650,000
9 fish using survey 3 in the Summer Towner Survey was
10 unrealistic?

11 A. I'm sorry, you're going to have to repeat the first part
12 of that question at least.

13 Q. Was it your testimony that Dr. Hanson's two estimates, 1.8
14 million fish derived from the 20 millimeter survey 9 --

15 THE COURT: Let me interrupt.

16 MR. WILKINSON: Yes, sir.

17 THE COURT: You might not have been listening. If
18 she said that under oath, it was her testimony. So the record
19 will speak for itself if the testimony was given. If you
20 could ask the question directly, I think it would be clearer
21 for the witness. Thank you.

22 BY MR. WILKINSON:

23 Q. Dr. Swanson, do you believe that the decline from 1.8
24 million fish, using the data from the 20 millimeter survey 9,
25 to 680,000 fish, using Summer Towner Survey 3, is unrealistic?

1 A. Is unrealistic that it's a decline or --

2 Q. Would that decline be attributed, in your view, is simply
3 to mortality of the fish between survey 9 and survey 3?

4 A. In my view, the difference between those numbers reflect
5 the inaccuracy of the estimates made using the methods used by
6 Dr. Hanson and everyone else.

7 And that if, alternatively, you were to interpret
8 those numbers to be true and accurate representations of the
9 numbers of delta smelt in the population from one week to the
10 next, that such a decline in a population in a single week
11 would probably be unrealistic and very unlikely to happen
12 absent some horrible catastrophic event.

13 Q. Isn't it true, Dr. Swanson, that there was a gear change
14 made by the Department of Fish & Game between survey 9 of the
15 20 millimeter survey and survey 3 of the Summer Towner Survey?

16 A. Yes.

17 Q. And isn't it likely that survey 9 of the 20 millimeter
18 survey sampled relatively larger fish in relation to the net
19 mesh size?

20 A. Please repeat.

21 Q. There were nine surveys under the 20 millimeter survey;
22 correct?

23 A. Yes.

24 Q. The first survey begins earlier in the year, the last
25 survey occurs later in the year; correct?

1 A. Yes.

2 Q. And they use the same nets during the survey. Don't they?

3 A. Yes.

4 Q. And the fish continue to grow during that period of time;
5 right?

6 A. Yes.

7 Q. And so when we're conducting survey 9, aren't we dealing
8 with relatively larger fish versus the net size than were in
9 the earlier survey?

10 A. In the earlier survey of the 20 millimeter?

11 Q. Correct.

12 A. Yes.

13 Q. Is that true?

14 A. Yes.

15 Q. And similarly, with survey -- the Summer Townet Survey,
16 the summer begins with survey one and continues on through the
17 season; right?

18 A. Yes.

19 Q. And they use a different net size; correct?

20 A. The townet survey uses a different net size than the 20
21 millimeter survey, yes.

22 Q. And isn't it also true that the fish continue to grow
23 during the period from the first Summer Townet Survey to the
24 last townet survey?

25 A. Yes.

1 Q. And so if we sample the fish earlier in the season under
2 the Summer Townet Survey, we're sampling relatively smaller
3 fish; right?

4 A. Yes.

5 Q. Do you think that could account for some of the difference
6 in numbers?

7 A. Do you mean the difference in the number between survey
8 nine sampled from the 20 millimeter and survey three sample
9 from the townet survey is attributable to the different size
10 of the fish?

11 Q. Yes. That's my question.

12 A. The difference in time between the two surveys is
13 extremely small. So I would estimate that the overall size,
14 differences in size, frequency distribution within the
15 population would be very similar.

16 Q. Thank you. Dr. Swanson, was -- strike that.

17 Is it your belief that the Particle Tracking Model is
18 an inadequate tool for predicting the movement of larval delta
19 smelt?

20 A. As the single tool used to predict the movement of delta
21 smelt alone? Yes.

22 Q. And so the Particle Tracking Model, in your understanding,
23 cannot be used to predict the response of larval smelt to
24 operational changes in the projects?

25 A. It can be a useful tool to inform our understanding to a

1 limited extent and is best supplemented by additional
2 information from surveys and any other monitoring means that
3 might or might not be available.

4 I will say that the Particle Tracking Model is
5 probably less inaccurate at predicting the movement of larval
6 delta smelt than it is for older and adult delta smelt.

7 Q. I'd like to refer you again to your petition to the Fish &
8 Wildlife Service, Dr. Swanson. This was State Water
9 Contractors Exhibit D. And ask you to take a look at page 22.

10 THE COURT: E or D?

11 MR. WILKINSON: D. It's the last exhibit, Your
12 Honor --

13 THE COURT: Yes.

14 MR. WILKINSON: -- that we marked.

15 Q. Dr. Swanson, in the bottom paragraph on that page, the
16 petition makes the statement that "Recent analyses using
17 CDWR's Delta Smelt Simulation -- I'm sorry, Delta Simulation
18 Model and its Particle Tracking Module show that most
19 particles (which are thought to reasonably simulate larval and
20 small juvenile delta smelt but be somewhat less accurate
21 simulations for adult delta smelt) released into the southern
22 Delta and central Delta were lost within two weeks to
23 entrainment at either the government water project diversions
24 or the many unscreened agricultural diversions located in this
25 area of the Delta."

1 Is that a statement that you wrote?

2 A. It is.

3 Q. And is it an accurate reflection of your beliefs about the
4 use of the Particle Tracking Model?

5 A. Yes.

6 Q. Does it also say that delta smelt can be entrained into
7 the agricultural diversions which exist in the Delta?

8 A. I believe results of the Particle Tracking Model include
9 operations or at least general operations of agricultural
10 diversions and the result do show that some particles are
11 entrained into those agricultural diversions.

12 Q. Is it also true, Dr. Swanson, that you used the Particle
13 Tracking Model as a basis for your petition to uplist the
14 delta smelt?

15 A. It is one of many lines of evidence we used to argue for
16 increased protection for the species.

17 Q. Was that a yes?

18 A. Yes.

19 Q. Dr. Swanson, your educational background and professional
20 experience are in the field of biology; correct?

21 A. Yes.

22 Q. You're a fisheries biologist by education and by
23 experience?

24 A. Technically I refer to myself as a fish biologist.

25 Q. Fish biologist. Thank you. You're not trained as an

1 engineer; are you?

2 A. No.

3 Q. And you haven't worked professionally as an engineer?

4 A. No.

5 Q. You're not trained as a hydrologist?

6 A. No.

7 Q. And you haven't worked as one either; have you?

8 A. No.

9 Q. And you're not educated to operate a water supply project;
10 are you?

11 A. No.

12 Q. And you haven't done that; have you?

13 A. No.

14 Q. In your supplemental declaration, Dr. Swanson, that was
15 filed on August 13th, I counted ten different declarants that
16 you responded to in the course of that declaration. Were some
17 of those declarants engineers?

18 A. Yes.

19 Q. Some were project operators?

20 A. Yes.

21 Q. You said in your declaration that Dr. Hanson's
22 calculations of delta smelt abundance were poorly designed;
23 right?

24 A. I'm going to assume that I did correctly use "poorly
25 designed," yes.

1 Q. And you also said that the -- the delta smelt Action
2 Matrix that was presented by Ms. Goude of the Fish & Wildlife
3 Service has serious flaws. Was that also true?

4 A. Yes.

5 Q. You said that Mr. Oppenheim of the National Marine
6 Fisheries Service was wrong in assuming that your X2 proposals
7 could adversely affect salmon and also that the analysis of
8 Mr. Ford of the DWR of the fall salinity delta smelt abundance
9 relationship is simplistic and incomplete; correct?

10 MR. WALL: Objection as to form.

11 THE COURT: The -- as I understand it, the witness is
12 being asked to, in effect, affirm the statements that are in
13 her report. If you're simply reading the report, then the
14 report is the best evidence. So if that's a best evidence
15 objection, the objection is sustained. If you're asking her
16 to comment or to interpret her answers or evaluate them,
17 that's a different matter.

18 MR. WILKINSON: I'm asking to have her
19 interpretation, Your Honor, of these statements that I'm --

20 THE COURT: Perhaps you could ask it directly so that
21 we all understand.

22 MR. WILKINSON: I'll do that.

23 Q. Dr. Swanson, do you believe that Dr. Miller's conclusion
24 population abundance of delta smelt is controlled by food
25 abundance is deeply flawed?

1 A. Yes.

2 Q. And you also believe that Dr. Manly's statistical analyses
3 on that subject are questionable; is that true?

4 A. I did not review Dr. Manly's analysis of Dr. Miller's
5 analysis of the relationship between food and delta smelt
6 abundance.

7 Q. I'd like to focus for a moment on your concerns about Dr.
8 Miller's analysis. Is it your view that the abundance of
9 delta smelt is related to project exports and that those are
10 the principle causes of the declines in smelt abundance?

11 A. In my judgment, and based on my analysis, the abundance of
12 delta smelt is statistically related to some aspects of water
13 project operations. But I have no judgment whether that
14 represents -- I'm sorry, what was the phrase you used? The
15 principle?

16 Q. Yes.

17 A. Cause of their decline or the principle drive of their
18 abundance.

19 Q. And is it your understanding that Dr. Miller's view is the
20 declines in smelt abundance are related to food availability;
21 is that right?

22 A. That is my understanding of what he has presented.

23 Q. Now, this proceeding that we are part of is not the first
24 time that this debate, if you will, between your position and
25 Dr. Miller's position has been raised; is it?

1 A. Dr. Miller and I participate in many scientific and
2 technical fora where these analyses and interpretations have
3 been discussed.

4 Q. Are you familiar with the Environmental Water Account or
5 EWA workshops?

6 A. I am.

7 Q. Have you participated in those workshops?

8 A. I have.

9 Q. Has Dr. Miller also participated in those workshops?

10 A. In at least some of them, yes.

11 Q. Are these workshops that fish biologists, who are
12 concerned with Delta issues, participate in?

13 A. Yes.

14 Q. It's an opportunity for them to exchange views about their
15 positions regarding various issues concerning the Delta?

16 A. The EWA workshop is usually -- it is a workshop where
17 results of the previous year and earlier years are presented
18 to an independent science panel that have been contracted by
19 the CALFED Bay Delta Program to provide independent scientific
20 review of the Environmental Water Account.

21 Q. This independent science panel considers presentations
22 that are made during these workshops?

23 A. They do.

24 Q. And they provide their views on presentations; is that
25 correct?

1 A. They provide their views on the whole content of the
2 workshop orally at the end of the workshop and several months
3 later in the form of a written report.

4 Q. And do you, Dr. Swanson, consider the comments that you
5 received from this independent science review panel in your
6 work?

7 A. I consider in my work information and views from a variety
8 of sources, including them.

9 Q. Now, did you appear at an EWA workshop in November of
10 2005?

11 A. I did.

12 Q. I'm sorry, I didn't hear your answer.

13 A. Yes.

14 Q. And did Dr. Miller also appear at that EWA workshop?

15 A. I believe so.

16 Q. And did you make presentations at the EWA workshop about
17 your different theories regarding the causes of decline in
18 delta smelt abundance?

19 A. I presented a simple and preliminary analysis that I had
20 conducted examining the relationship between juvenile and the
21 adult delta smelt population abundance, essentially the stock
22 recruitment relationship, as well as the relationship between
23 winter season export rates on subsequent delta smelt
24 population abundance.

25 Q. Was one of the members of the independent science review

1 panel a Dr. James Anderson?

2 A. Yes.

3 Q. Who is Dr. Anderson?

4 A. Dr. Anderson -- I'm not certain whether he's an academic
5 or an agency scientist. But he is from the Pacific northwest
6 and his expertise is primarily in salmon.

7 Q. Is he considered to be a respected fisheries biologist?

8 A. Yes.

9 MR. WILKINSON: I would like to have this marked as
10 State Water Contractors Exhibit E.

11 (Defendant's Exhibit SWC E was marked for
12 identification.)

13 BY MR. WILKINSON:

14 Q. Have you seen this paper before, Dr. Swanson?

15 A. I have not.

16 Q. You've not seen this paper before?

17 A. No.

18 Q. You were never provided a copy of this paper as part of
19 the EWA workshop; is that correct?

20 A. If I was, I do not recall.

21 Q. Let me turn your attention to page 12 of the paper and
22 maybe this will help refresh your recollection about it.

23 The bottom paragraph, Dr. Anderson writes and says
24 under the heading "Delta smelt studies."

25 "Unresolved however is the significance of EWA

1 actions on delta smelt population dynamics and the
2 causes for the current low populations. These issues
3 were not addressed by the agencies in the workshop,
4 but were discussed by the stakeholders. Two
5 hypotheses were proposed: One, declines are
6 caused" -- typo there -- "by exports (Swanson 2005)
7 and two, declines are caused by food limitations
8 (Miller, Ritton and Mongan 2006). Both studies were
9 preliminary and in neither study were conclusions or
10 findings sufficient to warrant management
11 recommendations.

12 "The Swanson study, which attributed population
13 declines to exports, contained problems and possibly
14 incorrect interpretations of the data. Population
15 trends were characterized over time intervals in
16 which major ecosystem changes may have occurred for
17 reasons that cannot be attributable to water exports.
18 Nonetheless, the study contained specific
19 recommendations for export operations."

20 And then there's a description of a regression
21 equation. He concludes, "Regressions of population trends
22 against a single variable are not sufficient to make
23 statements concerning population dynamics and recovery
24 probabilities." You've never seen that before?

25 A. I have not seen this paper, no.

1 MR. WALL: Your Honor, I'm going to object to this
2 line of questioning. Mr. Wilkinson has represented who the
3 author of this is, but there's no authentication of this
4 document and the witness is unable to authenticate it or
5 identify it.

6 MR. WILKINSON: Your Honor, the witness -- I'm sorry.

7 THE COURT: We normally don't debate the objections.
8 We just have the grounds stated. This is a bench proceeding.
9 And so if you want to respond, my sense of this is that the
10 witness doesn't recognize the exhibit. That doesn't mean that
11 you can't refer to its content in questioning her without
12 attribution necessarily because if she can't lay the
13 foundation for it, then the document -- although you can
14 represent that it is what it is, assuming the foundation for
15 it, but she doesn't recognize it.

16 MR. WILKINSON: I will represent, Your Honor, that
17 this is a paper that was produced by a member of the
18 Independent Science Review Panel at the 2005 EWA workshop.
19 Dr. Swanson and Dr. Miller attended.

20 THE COURT: You're saying this isn't a paper that was
21 provided afterwards, this says "review of." And that would
22 support the inference that this was something that followed
23 the workshop.

24 MR. WILKINSON: I believe it was, in fact.

25 THE COURT: So I don't know how it could have been

1 presented at the workshop.

2 MR. WILKINSON: I'm sorry. I meant to say it was in
3 response to presentations made at the workshop.

4 THE COURT: It would be like somebody summarizing
5 their view of what had happened.

6 MR. WILKINSON: That's right.

7 THE COURT: Not that it was presented. So Dr.
8 Swanson would not necessarily have seen or heard it because it
9 wasn't there, it didn't exist yet.

10 MR. WILKINSON: Well, let me do ask a couple of
11 questions about the --

12 THE COURT: Is that true?

13 MR. WILKINSON: Pardon me?

14 THE COURT: Is that true?

15 MR. WILKINSON: That Dr. Swanson may or may not have
16 seen it?

17 THE COURT: Because it didn't exist?

18 MR. WILKINSON: I think it was produced after the
19 workshop. My understanding was it had been distributed to
20 participants and I'll ask this question.

21 Q. Was this distributed to participants, Dr. Swanson?

22 A. I don't know.

23 Q. All right. Let me ask a couple of questions --

24 THE COURT: Let me just -- I'm sorry to be sticky on
25 this.

1 MR. WILKINSON: Yes, sir.

2 THE COURT: How could a review of a workshop that was
3 in the progress of occurring have been presented at the
4 workshop unless it --

5 MR. WILKINSON: I was not --

6 THE COURT: -- was presented during the workshop.
7 And I don't know how long the workshop lasted.

8 MR. WILKINSON: I will withdraw the exhibit, Your
9 Honor, however, I would like to ask Dr. Swanson some questions
10 related to the conclusion that I read into the record.

11 THE COURT: You certainly may. And I don't mind if
12 you refer to the exhibit if you can represent, as an officer
13 of the Court, that it is what it is as being what it is. But
14 if she simply can't identify it, you can certainly question
15 her about the subject matter.

16 MR. WILKINSON: Well, I will represent to the Court,
17 as an officer of the Court, and to Dr. Swanson, that we
18 received this paper by the website of the EWA workshop. It
19 came from the EWA website. And that we understood that this
20 paper had been produced by a member of the independent science
21 review panel, along with several other papers produced by
22 members of that panel, as a review of the presentations that
23 were made during the EWA workshop in November of 2005.

24 Q. Dr. Swanson, my question for you is: Was the debate
25 between Dr. Miller and yourself resolved during the course of

1 the EWA workshop in November 2005?

2 A. There was no debate.

3 Q. There were simply --

4 A. Each of us --

5 Q. Were there simply two presentations made?

6 A. Correct.

7 Q. Do you agree with the statement made by Dr. Anderson in
8 this paper that "Regressions of population trends against a
9 single variable are not sufficient to make statements
10 concerning population dynamics and recovery probabilities"?

11 A. Yes.

12 Q. If we look to the regression, which is presented above
13 that statement on page 13 of this paper, is that a description
14 of your regression analysis of the relationship between winter
15 exports and delta smelt abundance?

16 A. I am not certain to which regression you're referring.

17 Q. If you look --

18 THE COURT: It's on page 13 in the italics.

19 MR. WILKINSON: You'll see --

20 THE COURT: It's after the first full paragraph.

21 THE WITNESS: Oh, you mean --

22 BY MR. WILKINSON:

23 Q. Under the first full paragraph, there's an indentation of
24 the second paragraph. It begins with the words "Using the
25 regression equation."

1 A. This is text.

2 Q. Yes, it is. It is text.

3 A. Yes. And what is the question?

4 Q. Is that your regression -- a description of your
5 regression between the -- for the relationship between winter
6 exports and delta smelt abundance?

7 A. It is not a complete description of my analysis. I'm not
8 even certain whether this text appeared on any slides in my
9 presentation. I do not recall that. This may be paraphrasing
10 some of my oral text in the presentation, but beyond that I
11 cannot comment.

12 Q. Do you recall whether anyone else at the EWA conference of
13 November, 2005 presented a regression between -- of the
14 relationship between winter exports and delta smelt abundance?

15 A. I do not recall any other presentations of that analysis
16 at that workshop.

17 Q. Dr. Swanson, let me hand you a copy of Figure 2 from your
18 declaration, I believe, of July 23rd, 2007. Do you recognize
19 that?

20 A. I recognize the document, but it's from my August 13th
21 declaration.

22 Q. Is it the August 13th. Thank you. That's right.
23 Document 466-2 filed August 13th.

24 THE COURT: And that is not an exhibit.

25 MR. WILKINSON: I believe it's in evidence already,

1 Your Honor.

2 THE COURT: The August 13th declaration. Whose is
3 it?

4 MR. WILKINSON: Christina Swanson.

5 THE COURT: I know who the author is. Is it a
6 plaintiffs' exhibit? Is it a defendants' exhibit?

7 MR. WILKINSON: It's a plaintiffs' exhibit, I
8 believe.

9 THE COURT: Do you know what the number is?

10 MR. WILKINSON: Plaintiffs' Exhibit 4.

11 THE COURT: All right. I've got Exhibit 4 right
12 here. All right. And we're on page 34.

13 MR. WILKINSON: That's correct.

14 Q. Dr. Swanson, is Figure 2 shown on page 34 of your
15 declaration of August 13th your regression of the relationship
16 between winter export rates and population abundance of delta
17 smelt?

18 A. It is.

19 Q. Is that a regression that regresses population trends
20 against a single variable?

21 A. It is.

22 Q. I'd like to turn your attention, Dr. Swanson, to your
23 proposed interim actions. As I understand it, your proposed
24 action ten is designed to improve the habitat quality for
25 delta smelt by requiring sufficient outflow to maintain X2

1 downstream of Kilometer 80; correct?

2 A. Yes.

3 Q. And your matrix of actions itself says that measure ten is
4 based on the research results of Mr. Feyrer and others that
5 showed that reduced Delta outflow in the fall degraded delta
6 smelt habitat; correct?

7 A. That was a general interpretation of more specific results
8 they presented, yes.

9 Q. Now, the Feyrer article that you referred to is the
10 article that was introduced as Plaintiffs' Exhibit 5. And I
11 think it's dealing with multidecadal trends for three
12 declining fish species. Do you have a copy of that article in
13 front of you?

14 A. I don't believe I do.

15 MR. WILKINSON: I have a copy.

16 THE COURT: Is this to be shared with the Court?
17 Plaintiffs' 5? It's Plaintiffs' 5 in evidence.

18 MR. WILKINSON: It is in evidence, that's correct.

19 THE COURT: You may proceed.

20 MR. WILKINSON: Thank you, Your Honor.

21 Q. Dr. Swanson, do you have a copy of Mr. Feyrer's paper in
22 front of you?

23 A. I do.

24 Q. Can you take a look at the paper and tell me where in it
25 Mr. Feyrer and his colleagues recommend that X2 be maintained

1 at Kilometer 80?

2 A. They do not make that recommendation in this paper.

3 Q. In fact, Mr. Feyrer never mentions Kilometer 80 in his
4 paper; does he?

5 A. No.

6 Q. Does Mr. Feyrer, though, say that recent fish recruitment
7 and abundance are controlled by multiple factors?

8 A. Can you tell me where, please?

9 Q. Well, take a look at page 731 in the paper. And if you
10 look at the right-hand column, there is, in the first full
11 paragraph near the bottom, a sentence that starts "This
12 suggests." Do you see that?

13 A. Yes.

14 Q. Would you read that sentence, please?

15 A. The sentence reads, "This suggests that recent patterns of
16 fish recruitment and abundance are probably controlled by
17 multiple interacting factors."

18 Q. Would toxic pollutants be one of those multiple
19 interacting factors?

20 A. It has been hypothesized to be one, yes.

21 Q. Do you believe that it is?

22 A. The data are insufficient to determine it yet, however, I
23 consider it likely that toxics may be a problem in some years.

24 Q. Would invasive species be a problem, in your opinion, in
25 smelt?

1 MR. WALL: Objection. It's vague.

2 THE COURT: Overruled. Do you understand the
3 question?

4 THE WITNESS: So long as I can provide more than a
5 one answer -- one word answer. Yes.

6 THE COURT: With an explanation.

7 THE WITNESS: Yes. Invasive species potentially
8 affect -- and by invasive species, I assume you mean the
9 overbite clam and its effects on the planktonic food web which
10 essentially is an indirect of an -- an indirect effect of an
11 invasive species on delta smelt. That is an example of the
12 effect of an invasive species on the recruitment and abundance
13 of the delta smelt.

14 BY MR. WILKINSON:

15 Q. Would predation also be one of the possible multiple
16 interacting factors relating to delta smelt abundance?

17 A. For delta smelt, there is little evidence that predation
18 is an even detectable contributor to this population abundance
19 or recruitment.

20 THE COURT: Are there any known enemies?

21 THE WITNESS: There is some evidence that larval
22 delta smelt may be preyed upon by an invasive species called
23 the inland silverside. There is little evidence that larger
24 delta smelt are preyed upon by larger fishes based largely on
25 failure to detect delta smelt in the gut content analysis of

1 most of the larger fishes that have been looked at.

2 BY MR. WILKINSON:

3 Q. Bass are not a problem for the delta smelt then, is that
4 your opinion?

5 A. No.

6 Q. What about in-Delta diversions, pose a problem for the
7 delta smelt?

8 A. I think at least some. Delta smelt are lethally entrained
9 into in Delta agricultural diversions. But the relative
10 impact of the operations of those facilities on the population
11 and recruitment is unknown.

12 Q. Those Delta diversions are not -- those in-Delta
13 agricultural diversions are not controlled by the Central
14 Valley Project or the State Water Project, are they?

15 A. That is my understanding.

16 Q. And the toxic pollutants would not be controlled by the
17 state and federal projects either; would they?

18 A. Not to my understanding.

19 Q. Are invasive species controlled by the projects?

20 A. No. However water project operations do affect habitat
21 qualities within the estuary which tend to favor certain
22 non-native species and are less favorable for native species.
23 So in that respect, the effects of water project operations on
24 ecosystems and habitats in this estuary potentially affect the
25 abundance and distribution of invasive species.

1 Q. In his paper, Dr. Swanson, Mr. Feyrer discusses the
2 concept of EQ; doesn't he?

3 A. Yes.

4 Q. What is EQ, as you understand it?

5 A. EQ is an index of environmental quality developed by the
6 authors that is based on three environmental variables.
7 Temperature, salinity measured as electrical conductivity and
8 the clarity of the water, in this case measured as Secchi disk
9 depth. Essentially it's how clear the water is.

10 Q. Does it include spawning substrate?

11 A. No.

12 Q. Does it include competition amongst species?

13 A. No.

14 Q. Does it include water loss?

15 A. No.

16 Q. Are these factors that are also significant in terms of
17 the environmental quality as it relates to delta smelt?

18 A. Spawning gravel, water velocity and the third, please?

19 Q. Spawning substrate, competition and water velocity.

20 A. Competition. Spawning gravel and water velocity are
21 probably not particularly important during the time of the
22 year that these measurements are being made. And competition
23 is a variable that is not directly and easily measured in the
24 system. So no, they were not included in the environmental
25 quality index developed by these authors.

1 Q. Feyrer also said, though, did he not, that -- and I think
2 you just testified that Secchi depth is a factor that
3 contributes to environmental quality?

4 A. It is one of the three variables that they measure. All
5 three of them were significant with regard to delta smelt.
6 The two most important variables in terms of the degree to
7 which they contributed to the environmental quality for the
8 species were Secchi disk and electrical conductivity.

9 Q. Electrical conductivity refers to salinity.

10 A. Yes.

11 Q. And Secchi depth or Secchi disk is what. I'm not sure you
12 explained that for the record.

13 THE COURT: I don't think you spelled it either.

14 MR. WILKINSON: I tried to spell it. My
15 understanding, Your Honor, is S-E-C-C-H-I. Is that correct,
16 Dr. Swanson?

17 THE WITNESS: I believe so.

18 THE COURT: Is that the name of a person?

19 THE WITNESS: Probably.

20 THE COURT: And disk is either D-I-S-K or D-I-S-C?

21 THE WITNESS: D-I-S-K.

22 BY MR. WILKINSON:

23 Q. What does that represent, Dr. Swanson?

24 A. A Secchi disk is a round flat disk which is usually
25 divided in quadrants, two opposing quadrants are painted black

1 and the two opposing quadrants are painted white. It is
2 lowered by a rope down into the water and the depth at which
3 the disk first becomes undetectable to the naked eye is the
4 measurement that is made. So Secchi disk is used to measure
5 how clear or how turbid or cloudy the water is. And the
6 measurement for Secchi disk will be very low if the water is
7 very, very cloudy and very deep if the water is very clear.

8 Q. And this issue of water clarity or turbidity is important,
9 according to Dr. Feyrer -- or Mr. Feyrer.

10 A. It was a significant factor determining environmental
11 quality as measured by these authors for delta smelt.

12 Q. Does your measure ten, Dr. Swanson, attempt to control
13 water clarity or turbidity?

14 A. No.

15 Q. Do any of the measures in the Action Matrix proposed by
16 the Fish & Wildlife Service attempt to control or regulate
17 water clarity?

18 A. No.

19 Q. None at all?

20 A. No.

21 Q. Now, if your action number ten is adopted, Dr. Swanson,
22 then the salinity at Kilometer 80 and areas westerly of
23 Kilometer 80 -- sorry, let me withdraw that.

24 If your measure ten is adopted, the salinity at
25 Kilometer 80 will be not greater than two parts per thousand;

1 is that correct?

2 A. X2 is defined as the two parts per thousand salinity
3 measurement. It's defined as the location of the two parts
4 per thousand salinity measurement at the bottom of the
5 channel. It is a calculated value based on outflow.

6 And in rough terms, yes, the location of X2 at 80
7 kilometer corresponds to salinities at that location of two
8 parts per thousand. Downstream of that location salinities
9 would be somewhat probably higher and upstream they would be
10 lower.

11 Q. If your measure number ten is not adopted, Dr. Swanson,
12 what would you expect the salinity at Kilometer 80 to be?

13 MR. WALL: Objection. It's an incomplete
14 hypothetical.

15 THE COURT: Can you answer the question?

16 THE WITNESS: Not directly, no.

17 THE COURT: Sustained.

18 BY MR. WILKINSON:

19 Q. Dr. Swanson, is it your understanding that the Central
20 Valley Project and the State Water Project are currently
21 required by Water Right Decision 1641 to meet a water quality
22 objective at the Contra Costa Canal Intake Number One?

23 A. I believe so.

24 Q. And do you know what that water quality objective at the
25 Contra Costa Canal intake is?

1 A. Not off the top of my head, no.

2 Q. If I told you that it was 250 milligrams per liter, would
3 that enable you to make a determination of what the resulting
4 salinity would be at Kilometer 80?

5 A. Not without a reference book and a calculator.

6 Q. All right. Is it your understanding, Dr. Swanson, that
7 the two projects are also required to meet Delta outflow
8 objectives by Water Right Decision 1641 in the fall?

9 A. Yes.

10 Q. Do you know what those objectives are?

11 A. Not off the top of my head, but I could refer to the
12 document.

13 Q. So Dr. Swanson, is it your testimony that you cannot tell
14 me what the resulting salinity would be at Kilometer 80 if
15 your measure ten is not adopted; is that correct?

16 MR. WALL: Objection. It's argumentative.

17 THE COURT: Do you understand the question?

18 THE WITNESS: The question is can I tell him what it
19 will be, no.

20 MR. WILKINSON: Thank you.

21 THE COURT: Objection's overruled.

22 BY MR. WILKINSON:

23 Q. Dr. Swanson, have you calculated increased abundance in
24 delta smelt population that would occur if your proposed
25 measure ten is ordered to be imposed by the Court?

1 A. No.

2 Q. I also have a few questions concerning your action number
3 five, Dr. Swanson. As I understand it, that action would
4 require the management of project operations to achieve
5 combined flows in Old and Middle River between negative 750
6 cfs and negative 2250 cfs; is that right?

7 A. That is correct.

8 Q. And the purpose of the action is, as I understand it, to
9 protect larval smelt; is that also correct?

10 A. It will protect spawning adults, larval and juvenile delta
11 smelt.

12 Q. And your action number five is based on analyses by Dr.
13 Bennett that, as I understand it, showed that delta smelt and
14 only delta smelt hatched during the VAMP period survived to
15 the summer and the fall; is that correct?

16 A. The vast majority of delta smelt that he found in the
17 population in the summer and the fall were those hatched
18 during that period. It's not 100 percent.

19 Q. So your proposal is to attempt to extend the VAMP flows
20 for a longer period of time that will begin sometime in
21 February; is that correct?

22 A. Proposal is to provide conditions on Old and Middle River
23 with regard to negative flow conditions comparable to those
24 measured typically during the VAMP for a period that begins as
25 soon as larval delta smelt are likely present in the system

1 until the VAMP.

2 Q. And measure five, as I understand it --

3 THE COURT: And just, if you don't mind, is that late
4 February?

5 THE WITNESS: Probably.

6 THE COURT: Thank you. So at present, we've got
7 about a 30-day VAMP period. And this would expand the period
8 by another at least 60 to 90 days.

9 THE WITNESS: Yes. But characterizing it as
10 extending the VAMP is not completely accurate.

11 THE COURT: I didn't mean to say that we were
12 extending the VAMP. My statement, in the form of a question,
13 was extending the period.

14 THE WITNESS: Yes.

15 BY MR. WILKINSON:

16 Q. The Bennett analysis that your proposed measure five is
17 based upon, has it been published?

18 A. No.

19 Q. Has it been peer reviewed?

20 A. No.

21 Q. Is it publicly available?

22 A. To my knowledge, no, other than the fact that it has been
23 presented repeatedly in public fora.

24 Q. Now, in comparison to your action number five for the
25 period that we're talking about here, from February on to

1 April, the Fish & Wildlife Service Action Matrix sets a range
2 of flows from zero to 4,000 cubic feet per second; correct?

3 A. I believe so, yes.

4 Q. And that's to be determined based upon real time data of
5 spawning distributions and susceptibility of larval smelt to
6 the effects of projects; correct?

7 A. That's roughly the way they describe it.

8 Q. That's my understanding. If 2007 and 2008 water years,
9 starting in October, is a wet water year, wouldn't larval and
10 juvenile smelt, Dr. Swanson, be pushed westerly towards Suisun
11 Bay?

12 MR. WALL: Objection. I think it's an incomplete
13 hypothetical.

14 THE COURT: Can you answer the question?

15 THE WITNESS: It needs further specificity.

16 THE COURT: Sustained.

17 BY MR. WILKINSON:

18 Q. Dr. Swanson, when there are large flows in the Delta,
19 don't those flows tend to carry delta smelt westerly towards
20 Suisun Bay?

21 A. From their spawning grounds?

22 Q. Correct.

23 A. Yes.

24 Q. Under those circumstances, your action number five would
25 nonetheless require the management of flows -- strike that.

1 In those circumstances, even though Delta inflows
2 might be large and spawning and larval delta smelt in Suisun
3 Bay, would your measure number five nonetheless require that
4 project operations be controlled to limit reverse flows in Old
5 and Middle River as you proposed?

6 A. Let me ask for clarification, please. Are you assuming
7 that under wet conditions and high flow years spawning occurs
8 in Suisun Bay?

9 Q. I'm assuming that under wet conditions and with large
10 flows, the spawning population and the larval smelt would be
11 located westerly of the project pumps.

12 A. That is incorrect with regard to the spawning population.
13 Delta smelt move upstream to spawn in Delta channels even in
14 wet years.

15 Q. And where would they move?

16 A. Unpredictable.

17 Q. Well --

18 A. But they do --

19 Q. Let's take 2006, for example. In 2006, didn't the
20 spawning population of larval smelt -- I'm sorry. Strike
21 that. Didn't the spawning population of delta smelt spawn in
22 the area around Cache Slough?

23 A. Do you mean 2007? Or do you mean 2006? And if you mean
24 2006, I would have to refer back to the data.

25 Q. All right. How about 2007, where did they spawn?

1 A. In 2007, the vast majority, if not all of the population
2 that was detected by surveys, appeared to be in Cache Slough
3 during the spawning season.

4 Q. And where is Cache Slough on your map?

5 A. Cache Slough is in this area north of the Sacramento
6 River.

7 Q. And if you could point to the location of the project
8 pumps. Where are those?

9 A. They are located down here in the southern portion of the
10 Delta.

11 Q. And what the distance between Cache Slough and the project
12 pumps?

13 A. I could not tell you in quantitative terms.

14 Q. Is it more than 20 miles?

15 A. I do not know.

16 Q. Let's assume that Cache Slough is about 30 miles from the
17 Tracy pumping plants. Dr. Swanson, in the circumstances that
18 existed in 2007 when the smelt spawned in the area of Cache
19 Slough, is it correct that your proposed measure five would
20 have limited project operations to the range of flows that are
21 set forth in that measure?

22 A. Yes.

23 Q. And if 2007, 2008, this coming water year is a dry water
24 year, Dr. Swanson, and delta smelt, the spawning population is
25 concentrated in the central and southern Delta, as I

1 understand if your measure five would allow the project pumps
2 to continue to operate, to maintain a flow, target flow of
3 negative 1500 cfs in Old and Middle River; is that correct?

4 A. Our recommended actions do not take into consideration
5 differences in water year type or the distribution of delta
6 smelt. At least this particular action doesn't. The action
7 specifies maintaining Old and Middle River flows at the target
8 protective level based on the detected presence of larval
9 delta smelt in the system.

10 Q. Is your answer to my question then yes?

11 A. Yes.

12 Q. Dr. Swanson, I believe you stated, and I -- let me
13 rephrase.

14 Is it your opinion that Dr. Hanson's tier one measure
15 would result in high reverse flows in Old and Middle River?

16 A. Based on my review of recent historical flow data from the
17 DWR's DAYFLOW data set, during the December through June
18 period, I reviewed times during that period when old -- excuse
19 me, when flows on the Lower San Joaquin River were in a net
20 westerly direction and found that on those same -- during
21 those same periods, Old and Middle River flow conditions
22 varied in the single year that I looked closely, which was
23 2003, from minus 2,000 cubic feet per second to approximately
24 9,000 cubic feet per second.

25 Q. If Dr. Hanson's proposed tier one measure is successful

1 and the maintenance of a positive net westerly flow on the San
2 Joaquin River pushes delta smelt westerly towards Suisun Bay,
3 does it matter what the reverse flows are in Old and Middle
4 River?

5 A. I don't agree that Dr. Hanson's tier one measure of
6 maintaining net westerly flows on the Lower San Joaquin River
7 will have the effect of pushing delta smelt west into Suisun
8 Bay. We have no information on the effect of Lower San
9 Joaquin River flows on the distribution of delta smelt within
10 the system.

11 Q. I asked you to assume that the measure was successful and
12 that that was the result. If that occurs, does it matter what
13 the reverse flows are in Old and Middle River?

14 A. Unknown.

15 THE COURT: Is there -- assuming that you have a net
16 westerly flow, is there any level of negative flow in the Old
17 and Middle River?

18 THE WITNESS: According to the data that I reviewed
19 for a single year, water year 2003, on the same days that
20 Lower San Joaquin River flows were zero or positive, Old and
21 Middle River flows on those days could range from as high as
22 minus 2000 cubic feet per second to approximately -- or to as
23 extreme negative flows as minus 9,000 cubic feet. That was
24 based on very quick review of a single year.

25 But it's clear that the maintenance of net westerly

1 flows on the Lower San Joaquin River has a very -- has an
2 unknown effect on Old and Middle River flows.

3 THE COURT: Thank you.

4 BY MR. WILKINSON:

5 Q. Dr. Hanson, is it your belief that Dr. -- did I say Dr.
6 Hanson or --

7 A. You did.

8 Q. I apologize. We have too many Ph.D.'s running around
9 here.

10 Dr. Swanson, you have, I believe, criticized Dr.
11 Hanson's tier two measure as allowing the projects to manage
12 Old and Middle River flows at a level of negative 6,000 cubic
13 feet per second; is that right?

14 A. I have criticized it as insufficiently protective to
15 reduce the take.

16 Q. But isn't the negative 6,000 cfs in Dr. Hanson's tier two
17 measure the upper end of the range of flows that are provided
18 in that measure?

19 A. I would have to review his declaration to determine that.

20 Q. I'd like you to assume that the lower end of the range of
21 Dr. Hanson's tier two measure is negative 1,000 cfs. All
22 right? Is that the same range that you propose in your
23 measure number five?

24 A. May I review the document, please?

25 Q. Sure. Please do.

1 THE COURT: I think it's 8 or 9 of the plaintiffs.
2 This is the second declaration, Mr. Wilkinson?

3 MR. WILKINSON: I believe it was actually the first
4 declaration, Your Honor, which Dr. Hanson's proposed measures
5 were set forth.

6 THE COURT: That would be document 415 filed July
7 23rd. Do you have a page and line reference?

8 BY MR. WILKINSON:

9 Q. Do you have that in front of you, Dr. Swanson?

10 A. I believe I do.

11 THE COURT: Exhibit 8.

12 BY MR. WILKINSON:

13 Q. And Dr. Swanson, what's the lower end of the range of Dr.
14 Hanson's tier two measure?

15 A. I'm reading from the text. I should be looking at his
16 table. Is it easy to find on the table?

17 THE COURT: Why don't we have a page and line instead
18 of playing hide and seek.

19 BY MR. WILKINSON:

20 Q. Well, if you look at page nine, Dr. Swanson, doesn't
21 Hanson identify a range of negative 1,000 to negative 6,000
22 cfs?

23 A. Which line, please?

24 THE COURT: Three.

25 MR. WILKINSON: Three.

1 THE WITNESS: I believe he uses the range of minus
2 1,000 to minus 6,000. Does not specifically agree with the
3 language -- well, it's not quite as precise. It's a little
4 more specific than the language in the take.

5 BY MR. WILKINSON:

6 Q. Is it your understanding, Dr. Swanson, Dr. Hanson's tier
7 two measures have a range of negative 1,000 cfs to negative
8 6,000 cfs in Old and Middle River?

9 A. Yes.

10 Q. And Dr. Hanson's lower end number, negative 1,000 cfs, is
11 that lower than your target flow of negative 1500 cfs for the
12 same period?

13 A. Marginally, yes.

14 Q. I'm sorry?

15 A. Yes.

16 Q. Would you agree that the lower end of Dr. Hanson's tier
17 two measure is more protective of delta smelt than is the
18 target flow in your action number five?

19 A. On the basis of the fact that it requires a slightly less
20 negative flow, yes.

21 Q. Dr. Swanson, we referred a number of times to the Vernalis
22 Adaptive Management Plan or VAMP; correct?

23 A. Yes.

24 Q. Is my understanding correct that you believe VAMP is
25 beneficial to the delta smelt?

1 A. Based on the data that I'm aware of and the analyses
2 conducted, yes.

3 Q. Can you tell me who developed the Vernalis Adaptive
4 Management Plan?

5 A. Not specifically as to the actual people involved, no.

6 Q. You don't know whether it was Dr. Bruce Herbold and Dr.
7 Charles Hanson?

8 A. I believe they were involved, yes.

9 MR. WILKINSON: Thank you. At this time, Your Honor,
10 I would like to move the admission of State Water Contractor
11 Exhibits D and E.

12 THE COURT: Any objection?

13 MR. WALL: Exhibit E has not been authenticated.
14 We're going to object to that.

15 THE COURT: All right. Any objection to D?

16 MR. WALL: No objection, Your Honor.

17 THE COURT: Exhibit D is received in evidence.

18 (Defendant's Exhibit SWC D was received.)

19 THE COURT: I'll reserve the ruling on Exhibit E
20 subject to foundation.

21 MR. WILKINSON: Thank you.

22 THE COURT: Mr. O'Hanlon, are you going to
23 cross-examine?

24 MR. O'HANLON: Yes, Your Honor.

25 THE COURT: You may proceed.

1 CROSS-EXAMINATION

2 BY MR. O' HANLON:

3 Q. Good morning, Dr. Swanson.

4 A. Good morning.

5 Q. My name is Dan O' Hanlon. I represent the San Luis
6 Delta-Mendota Water Authority and the Westlands Water
7 District. Are you a member of the team of scientists that
8 have been appointed by the Fish & Wildlife Service to develop
9 a new recovery plan for delta smelt?

10 A. I am not.

11 Q. Do you have a degree in statistics?

12 A. No, I have a degree in biology.

13 Q. So you're a fish biologist rather than a statistician?

14 A. Yes.

15 Q. But you believe you are nonetheless competent to do
16 statistical analysis?

17 A. I have training in it, yes.

18 Q. And that you are competent to analyze and comment upon
19 statistical analysis by others?

20 A. Yes.

21 Q. And in your testimony in this case, you described
22 statistical analyses that you have performed?

23 A. Some, yes.

24 Q. I'd like you to refer specifically to your declaration
25 from August 13, Plaintiffs' Exhibit 4, and paragraph 42. I'm

1 going to read the first sentence of paragraph 42. "Reports of
2 research and analysis results showing statistically
3 significant relationships between delta smelt population
4 abundance and water export rates have been presented by
5 Bennett (2005), myself (Swanson 2005), and Manly (2006) and,
6 as reported by Ms. Goude in her declaration, confirmed by
7 Doctors Manly and Chotkowski in a personal communication to
8 her."

9 Did I read that accurately?

10 A. You did.

11 Q. I'd like to ask you briefly about the Bennett 2005
12 physical analysis. That is in the Bennett 2005 paper that
13 we've been discussing quite a bit and is marked as Plaintiffs'
14 Exhibit 2; correct?

15 A. That is correct.

16 Q. All right. And Dr. Bennett found a statistically
17 significant relationship between the juvenile abundance as
18 measured by the Summer Townet Survey and total exports;
19 correct?

20 A. I believe he did. I am looking for the correct reference.

21 Q. Please take a look at page 38.

22 A. Thank you. Yes.

23 Q. Do you agree that the Fall Midwater Trawl is a better
24 indicator of the likely abundance of next year's spawning
25 adults than the Summer Townet Survey?

1 A. Yes.

2 Q. Mr. Wilkinson asked you a few moments ago about Dr.
3 Bennett's work that's sometimes been referred to as the Big
4 Mama theory.

5 A. Yes.

6 Q. And you indicated that that work has been presented in
7 various public forums.

8 A. Yes.

9 Q. As a PowerPoint presentation?

10 A. Yes.

11 Q. Has the data underlying that presentation been made
12 available to other researchers and scientists?

13 A. Some of the data that Dr. Bennett uses is already publicly
14 available. I do not know whether the data that he has
15 collected in his laboratory is publicly available.

16 Q. Do you know whether Dr. Bennett has declined to make data
17 available because he has not yet completed his research?

18 A. I do not know that.

19 Q. Please take a look again at your declaration, Exhibit 4.
20 At this time I want to refer you to the graph that's depicted
21 there.

22 A. Page and number, please.

23 Q. I'm sorry. Page 34, under paragraph 42.

24 A. Yes.

25 Q. And this is an updated version of the analysis that you

1 refer to above, "Swanson 2005"; correct?

2 A. It is.

3 Q. This graph depicts a relationship between the log
4 transformed Fall Midwater Trawl index and exports from
5 December to March; correct?

6 A. Yes.

7 Q. And the Fall Midwater Trawl index is on the Y or vertical
8 axis?

9 A. That's correct.

10 Q. And the winter exports are expressed in average cubic feet
11 per second on the X axis or the horizontal axis?

12 A. Yes.

13 Q. At line -- if you look on page 34, down at line 21, it
14 says, "Using data from 1967 through 2007, the regression
15 equation," and it goes on.

16 Now, we don't actually have the 2007 Fall Midwater
17 Trawl index yet, do we?

18 A. That is correct.

19 Q. So this should read, 1967 to 2006?

20 A. You are correct, yes.

21 THE COURT: All right. We're going to take the
22 morning recess at this time.

23 MR. BIRMINGHAM: Excuse me, Your Honor, I'm Tom
24 Birmingham. I'm general counsel for Westlands Water District.
25 I'm wondering if counsel could approach the bench for a

1 moment?

2 THE COURT: Yes. Can we recess the rest of the
3 courtroom, however? We've been going for two solid hours.
4 The court reporter definitely needs a break. You're excused,
5 Ms. Reporter. We're in recess until ten minutes to 11.

6 (Recess.)

7 (Discussion at the sidebar, not reported.)

8 THE COURT: We're back on the record in NRDC versus
9 Kempthorne. Dr. Swanson is on the stand. Mr. O' Hanlon is
10 cross-examining. You may proceed.

11 MR. O' HANLON: Thank you, Your Honor.

12 Q. Dr. Swanson, just prior to the break, we were discussing
13 your declaration of August 13th, Plaintiffs' Exhibit 4, and
14 the graph shown on page 34 of your declaration below paragraph
15 42.

16 Could you please refer to that page in your
17 declaration?

18 A. I have it.

19 Q. At line 22, on page 34, it indicates the R squared of this
20 analysis is .255; correct?

21 A. That is correct.

22 Q. And that means that this equation explains about 25
23 percent of the variation in the delta smelt population
24 abundance from 1967 through 2006; correct?

25 A. That is a correct interpretation.

1 Q. At line 22, you also report a P value of 0.001; correct?

2 A. That's correct.

3 Q. And the commonly accepted standard for significance is
4 .05; correct?

5 A. Yes.

6 Q. Now, there have been a lot of changes in this estuary over
7 the period from 1967 to 2006; correct?

8 A. That is correct.

9 Q. Do you know what happens to the statistical significance
10 of this relationship if you limit the period of analysis to
11 the last 25 years?

12 A. I have not conducted that analysis recently, no.

13 Q. Do you know whether that relationship would still be
14 statistically significant?

15 A. Without conducting the analysis, again, no.

16 Q. Do you know whether, if you were to limit the period of
17 analysis to the year 1999, the relationship would still be
18 statistically significant?

19 A. I do not know. However, when you reduce sample size like
20 that, you limit the degree to which you can detect trends in
21 the data, so it is likely.

22 Q. I'd like you to please refer to the appendix to that
23 declaration, again Plaintiffs' Exhibit 4. The appendix that
24 contains the plaintiffs' proposed actions.

25 Are you the primary author of these proposals?

1 A. I am.

2 Q. And is it your opinion that unless these measures are
3 implemented, water project operations in the time from now
4 until a new Biological Opinion is in place will jeopardize the
5 continued existence of the delta smelt and adversely modify
6 its critical habitat?

7 A. It is my opinion, yes.

8 Q. I would like to explore how you made that determination.

9 Did you review the description of project operations
10 in the operations criteria and plan, sometimes called the
11 OCAP?

12 A. Not recently, no.

13 Q. So you didn't review it prior to preparing these measures?

14 A. No.

15 Q. Did you review the project description in the biological
16 assessment underlying the existing Biological Opinion?

17 A. Not recently, no.

18 Q. So you didn't consult it in connection with preparation of
19 these proposals; is that correct?

20 A. No.

21 Q. For purposes of your opinion concerning jeopardy and
22 adverse modification, what did you assume about how the
23 800,000 acre feet of water dedicated under CVPIA Section
24 3406(b)(2) would be managed in 2008?

25 A. I made no assumptions with regard to that.

1 Q. Now, how that water is managed under 3406(b)(2) in 2008
2 may influence what effect project operations have upon the
3 delta smelt in 2008; correct?

4 A. I don't know.

5 Q. What did you assume about how water available in 2008
6 under the Environmental Water Account would be allocated?

7 A. I made no assumptions with regard to the Environmental
8 Water Account.

9 Q. Now, how Environmental Water Account water is used in 2008
10 may influence what effect project operations have on delta
11 smelt; correct?

12 A. I'm sorry. What was the question?

13 Q. I'll repeat the question. How water made available under
14 the Environmental Water Account is used in 2008 may influence
15 what effect project operations have on the delta smelt;
16 correct?

17 A. There is no question there.

18 Q. Let me ask it this way.

19 A. Please.

20 Q. Did you make any assumptions about how Environmental Water
21 Account water might be allocated in 2008 to benefit the delta
22 smelt?

23 A. I did not.

24 Q. Did you make any assumptions about what actions would be
25 taken under the Environmental Restoration Program in 2008 that

1 might benefit the delta smelt?

2 A. No.

3 Q. Did you make any assumptions about -- let me ask: What
4 assumptions did you make about how the Fish & Wildlife
5 Service, the Bureau and Department of Water Resources would
6 apply the adaptive management measures in the delta smelt risk
7 assessment matrix in 2008?

8 A. Our interim protective remedies do not rely on use of that
9 process for implementation, therefore, I made no assumptions
10 about it.

11 Q. You didn't evaluate what -- or try to evaluate what budget
12 operations would be if the DSRAM measures were still in place;
13 correct?

14 A. No.

15 Q. And I believe you testified earlier that you made
16 your -- your measures don't depend upon the hydrology in 2008;
17 is that correct?

18 A. That is correct.

19 Q. Now, what the hydrology is in 2008 may influence what
20 effect project operations will have on the delta smelt in
21 2008; correct?

22 A. Yes.

23 Q. Would you please look at your action number four. And
24 this is the winter action intended to prevent entrainment of
25 pre-spawning adult smelt; correct?

1 A. Yes.

2 Q. And this action prescribes certain flows be maintained in
3 Old and Middle Rivers?

4 A. Yes.

5 Q. Did you model what the flows in Old and Middle Rivers
6 would likely be in 2008 absent the plaintiffs' measures?

7 A. I did not model that, no.

8 Q. Did you calculate what salvage at the pumps would likely
9 occur in 2008 with and without this action?

10 A. No.

11 Q. Did you calculate what the entrainment would be at the
12 pumps in 2008 with or without this action?

13 A. There's no way to do that that I am aware.

14 Q. So the answer is no?

15 A. No. Correct.

16 Q. Did you try to quantify an increase in abundance that you
17 would expect to occur from implementing this action?

18 A. No.

19 Q. Please look at action number five. This is the late
20 winter spring action intended to prevent entrainment of
21 spawning adult larval and juvenile smelt; correct?

22 A. Correct.

23 Q. And this action prescribes flows -- that flows in Old and
24 Middle Rivers be maintained at between negative 750 cfs and
25 negative 2250 cfs; correct?

1 A. Correct.

2 Q. Did you model what the flows in Old and Middle Rivers
3 would likely be during this period in 2008 absent the
4 plaintiffs' measures?

5 A. No. There's no way that I'm aware to do that.

6 Q. Did you calculate what the salvage of the pumps would
7 likely be in 2008 during this period with and without this
8 action?

9 A. No way to do that, that I'm aware.

10 Q. Did you calculate what entrainment at the pumps would
11 likely be in 2008 with and without this action?

12 A. No.

13 Q. And did you try to quantify an increase in abundance in
14 implementing this action?

15 A. No.

16 Q. Please take a look at action number seven. This is the
17 late spring, early summer action intended to prevent
18 entrainment of larval and juvenile smelt; correct?

19 A. Correct.

20 Q. And this action again prescribes flows in Old and Middle
21 Rivers be maintained at between negative 750 cfs and negative
22 2250 cfs; correct?

23 A. Yes.

24 Q. Did you model what flows would likely occur in Old and
25 Middle Rivers during that period in 2008 absent the

1 plaintiffs' measures?

2 A. No.

3 Q. Did you calculate what the salvage at the pumps would
4 likely be in 2008 with or without this action?

5 A. No.

6 Q. Did you calculate what entrainment at the pumps would
7 likely be in 2008 with or without this action?

8 A. No.

9 Q. And did you try to quantify the increased abundance you
10 would expect would result from implementing this action?

11 A. No.

12 Q. Would you please look at action number ten. And this is
13 the fall action intended to improve habitat for delta smelt in
14 the September through December period; correct?

15 A. Yes.

16 Q. And this action specifies minimum Delta outflows of 7500
17 cfs or maintaining X2 downstream of 80 kilometers; correct?

18 A. Yes.

19 Q. And this action on the plaintiffs' proposal would begin
20 this fall; correct?

21 A. Yes.

22 Q. Did you model what the outflows would likely be during
23 that period in 2007 absent this measure?

24 A. No.

25 Q. Did you calculate what habitat conditions would likely be

1 in 2007 with and without this action?

2 A. No.

3 Q. Did you quantify the effect of budget operations on delta
4 smelt from implementing the entire package of actions over the
5 next 12 to 14 months versus the effect of project operations
6 without these actions?

7 A. No.

8 MR. O' HANLON: I have no further questions, Your
9 Honor.

10 THE COURT: Thank you very much. Redirect?

11 MR. WALL: Yes, Your Honor.

12 REDI RECT EXAMI NATION

13 BY MR. WALL:

14 Q. Dr. Swanson, I'm going to refer you back to the testimony,
15 cross-examination that took place yesterday. And ask you to
16 look at Plaintiffs' Exhibit 10, which is a set of notes by the
17 Delta Smelt Working Group dated August 21, 2006. Do you have
18 a copy of that?

19 A. I know I do. I have them.

20 Q. I believe Mr. Maysonett asked you some questions about
21 paragraph entitled Fall Flows on page two of that exhibit. Is
22 the court still looking for it?

23 THE COURT: I am. I apologize. It's one of these
24 matters of having too many papers.

25 MR. WALL: We have an extra, I could hand it up.

1 THE COURT: I probably folded it into another
2 exhibit. This is State Water Contractors E?

3 MR. WALL: No, Your Honor. Plaintiffs' 10.

4 THE COURT: Oh, Plaintiffs' 10. Excuse me. That I
5 have. Thank you.

6 BY MR. WALL:

7 Q. And I believe Mr. Maysonett had you read the third
8 sentence at the top of that second page. Could you read that
9 sentence again? Beginning with "The working group."

10 A. "The working group is not opposed to this action, but did
11 not recommend it because 7,000 cubic feet per second is not
12 enough flow to detectably change physical habitat
13 quantity/quality for delta smelt and will not likely change
14 overbite clam distribution or abundance (attachment, Figure
15 2)."

16 Q. Now, have you proposed a measure to protect delta smelt in
17 the fall?

18 A. Yes.

19 Q. That's your action measure number ten?

20 A. That's correct.

21 Q. Does it recommend flows into the Delta that are greater
22 than 7,000 cfs?

23 A. It does.

24 Q. And according to your calculations, they are sufficient to
25 push the X2 point to what point in the estuary?

1 A. 80 kilometers.

2 Q. Dr. Swanson, if I could ask you to look at Figure 2 of
3 that same exhibit, Plaintiffs' 10. Could you describe for the
4 Court, with reference to that figure, why you chose a flow
5 that would push the X2 out to 80 kilometers?

6 A. This graph shows the fall habitat index for delta smelt
7 which is based on the three water quality variables, specific
8 conductance or electrical conductivity, salinity, water
9 clarity and temperature plotted on the Y axis versus the
10 average location of X2 during the September through December
11 period in kilometers.

12 As you'll note, the values extend from X2 values of
13 60 kilometers to approximately 94 kilometers. That's the
14 range of X2, fall X2 measure for the habitat, for which they
15 have the fall habitat index measured.

16 There is a trend which shows decreasing habitat
17 index, a measure of the quality for habitat for delta smelt,
18 with increasing average X2 with what could be interpreted as a
19 threshold at approximately 80 kilometers, such that at X2
20 values 80 kilometers and above, the habitat index is
21 consistently low; in contrast, at fall X2 levels of 80
22 kilometers or less, habitat index is generally higher.

23 Q. Dr. Swanson, you were asked some questions this morning
24 and perhaps yesterday as well about an analysis by the US
25 Geological Survey that related flow to salvage. Do you

1 remember that?

2 A. I do.

3 Q. And I believe that relationship is depicted in a figure in
4 your declaration. I believe it is in your July 23rd, 2007
5 declaration, which --

6 THE COURT: Plaintiffs' 8.

7 MR. WALL: It's --

8 THE COURT: No, I'm wrong.

9 THE WITNESS: Page 12.

10 MR. WALL: Plaintiffs' 11.

11 Q. Plaintiffs' 11, page 12. What question were you trying to
12 answer or to investigate when you were using this table
13 produced by Dr. Smith of the USGS?

14 A. This analysis essentially is addressing the question
15 does -- is the number of delta smelt, adult delta smelt taken
16 or salvaged at the facility related to the magnitude of
17 negative flows on Old and Middle River. The results show that
18 the numbers of delta smelt taken increase with increasing
19 magnitudes of Old and Middle River flow.

20 There are not very many data in this analysis, so
21 it's not a particularly refined or precise analysis of this
22 question. And in my judgment, interpreting this analysis
23 should really be limited to a conclusion that take is high at
24 high magnitude Old and Middle River flows and is only reliably
25 low at negative flows that are less negative than about minus

1 3,000 to minus 4,000 cubic feet per second. Take is only
2 reliably low at very low negative flow conditions.

3 Q. Dr. Swanson, in asking that question about the effect of
4 negative flows, was it important to consider the relationship
5 between take or salvage of delta smelt at positive flows?

6 A. In my judgment, no.

7 Q. And you were asked some questions about the data points
8 for 1997 to 1998. Were those years in which -- were the flows
9 negative or positive on Old and Middle River in the months of
10 January and February in those years?

11 A. Those were very wet years and flows on Old and Middle
12 River were consistently positive.

13 Q. Was consideration of those years relevant to the inquiry
14 you were undertaking?

15 A. I did not consider it so.

16 Q. Now, you were also asked some questions about a
17 re-interpretation of Dr. Smith's graph. In fact, I believe
18 there was testimony that that re-interpretation was conducted
19 by the Department of Water Resources staff; is that correct?

20 A. I believe so, yes.

21 Q. Could you just briefly articulate your criticism of that
22 re-interpretation?

23 A. My concern was that in their re-interpretation of this
24 analysis, the -- they arbitrarily split the data set, the data
25 points for salvage and for Old and Middle River flows on the

1 basis of calendar months.

2 And in my view, that is not appropriate when
3 examining a relationship between two variables that extend
4 between -- for which the data extend between the two months
5 and, in fact -- as a single continuous event, and, in fact, an
6 event which may be unevenly distributed between the two
7 months.

8 For example, a take event that begins in the last
9 week of January and then extends through the entirety of
10 February. It's not appropriate to examine those January
11 salvage and take numbers in isolation of the rest of the event
12 in February.

13 Q. Did Dr. Smith's analysis, as reflected on Figure 8, was it
14 split between the months of January and February?

15 A. It was not.

16 Q. And how does that affect its relative reliability for
17 analyzing the take event that might extend between January and
18 February?

19 A. I consider this analysis to be useful and I consider the
20 analysis or the report, the re-interpretation and re-analysis
21 conducted by Department of Water Resources, to be considerably
22 less useful if not likely to suggest information that
23 would -- it would lead to error in interpreting the
24 relationship between the variables.

25 Q. How did you use Dr. Smith's relationship as represented on

1 Figure 8 in developing your analysis and recommendations in
2 this case?

3 A. Very minimally. The recommended protective actions that
4 we have made for the protection of larval and juvenile smelt,
5 actions four and five, are not based on this analysis, but
6 instead based -- I beg your pardon, it's five and seven.
7 Actions five and seven are not based on this analysis. They
8 are instead based on the results of Dr. Bennett's work,
9 showing relative survival of larval delta smelt hatched at
10 different times of the year and under different flow
11 conditions, VAMP or not VAMP.

12 The action four that we recommended, which is
13 triggered by a winter pulse inflow to the Delta which cues
14 adult delta smelt to move upstream in the Delta, is indirectly
15 based on this research. The recommendation that Old and
16 Middle River flows be first managed to maintain zero negative
17 flows for the first ten days is based on the interpretation of
18 this analysis, which suggests that under those conditions take
19 is very low if not eliminated.

20 The subsequent recommendation that Old and Middle
21 River flows be maintained at an average of 3500 -- minus 3500
22 cubic feet per second plus or minus the 750 cubic feet per
23 second range is based on the delta smelt Working Group's use
24 of this analysis and their subsequent recommendation for Old
25 and Middle River flows to be managed between 3500 -- minus

1 3500 and minus 5,000 as well as that is the same flow
2 recommendations made in the Pelagic Fish Action Plan.

3 In my judgment, given the status of the species, a
4 higher level of protection was necessary, therefore I
5 recommended Old and Middle River flows at the lower end of
6 that range for the duration of the winter period.

7 Q. Did Figure 8 and Dr. Smith's analysis, as represented in
8 Figure 8, inform any of your proposed protective measures
9 other than the fourth one?

10 A. Not directly.

11 Q. And did the Delta Smelt Working Group -- is it your
12 understanding the Delta Smelt Working Group relied on Dr.
13 Smith's analysis in forming its recommendations?

14 A. Yes.

15 Q. Does the Delta Smelt Working Group include scientists from
16 the US Fish & Wildlife Service?

17 A. Yes.

18 Q. And it includes scientists from the Department of Water
19 Resources?

20 A. Yes.

21 Q. And includes scientists from the California Department of
22 Fish & Game?

23 A. Yes.

24 Q. And includes scientists from the US Bureau of Reclamation?

25 A. Yes.

1 Q. You were also asked some questions about your proposed
2 protective measure number seven and the dates on which it
3 would end. What would be the end point for proposed measure
4 seven?

5 A. As specified in the table, the action is ended on June
6 15th or a minimum of five days after the last detection of
7 larval or juvenile delta smelt --

8 MR. LEE: Your Honor, I would like to object to this
9 question because it goes beyond the scope of cross. I don't
10 believe this issue came up in cross-examination.

11 THE COURT: I do not have, in my recent memory, every
12 measure that you referred to. I don't offhand remember
13 measure seven being referred to. However, since you did
14 challenge the efficacy of Dr. Swanson's analysis in relation
15 to interpretation and application of the Smith comparisons and
16 analysis depicted in Figure 8 and others --

17 MR. LEE: That's correct, Your Honor, but
18 this -- it's not just action seven that we're talking about.
19 It's the line of questioning and going to when, in fact,
20 entrainment concludes, whether it concludes on June 15th or
21 later in July. My understanding that this issue came out in
22 direct and did not come out in cross, so it should not be, we
23 submit, addressed in redirect.

24 THE COURT: Let me say this. It seems to me that the
25 confidence, the accuracy and the weight to be given to the

1 opinions of Dr. Swanson are definitely placed in issue by the
2 cross-examination. And all of these measures have temporal
3 sequences for a starting and an ending point and an
4 explanation of how those are established or why certainly is
5 relevant to the amount of weight the Court is going to give
6 the testimony and the attacks on the testimony for the
7 purposes of impeachment and/or discrediting value to the
8 testimony the defendants have made. So the objection is
9 overruled. You may answer. Let's read the question back.

10 THE REPORTER: There is part of an answer.

11 THE COURT: You may read the question and the rest of
12 the answer.

13 THE WITNESS: I will continue. At either the SWP or
14 CVP fish protected facilities by either the salvage or larval
15 monitoring programs, whichever comes last.

16 BY MR. WALL:

17 Q. Do you have an understanding of approximately when the
18 last detection of delta smelt has been in recent years?

19 A. It varies substantially from year to year, but it can be
20 based on the information that I reviewed in Mr. Leahigh's
21 declaration, anywhere from April through July.

22 Q. And do you -- would you expect that if your protective
23 measures were implemented, the -- that might influence the
24 last date of detection of juvenile smelt in -- or delta smelt
25 in the vicinity of the projects?

1 A. One of the objectives of this action by moderating
2 negative flows on Old and Middle River is to facilitate
3 transport of larval and juvenile delta smelt downstream from
4 the Delta to the confluence and beyond where they would rear.

5 Therefore, I believe it is possible that these
6 conditions, by facilitating transport of the fish downstream,
7 may result in the salvage of the juvenile fish, the salvage
8 event of the juvenile fish at the facilities being concluded
9 earlier in the year.

10 Q. Dr. Swanson, you were also asked some questions about --

11 THE COURT: You know, if you don't mind, counsel.

12 MR. WALL: Yes.

13 THE COURT: The question you originally asked was do
14 you have an understanding of approximately when the last
15 detection of delta smelt has been in recent years? Did you
16 intend to say juvenile delta smelt? Because I don't know what
17 value the last observation of delta smelt. To my
18 understanding, they're still being observed.

19 MR. WALL: Maybe I should clarify the question.

20 THE COURT: Thank you.

21 BY MR. WALL:

22 Q. Do you have an understanding of the last day that
23 detection of larval or juvenile delta smelt in the vicinity of
24 the SWP or CVP export facilities has been in recent years?

25 A. In recent years, it varies from year to year. But

1 typically, the salvage of juvenile delta smelt at the two
2 facilities ends sometime in -- well, anywhere from April
3 through July.

4 Q. And would you expect that date of last detection of larval
5 or juvenile delta smelt in the vicinity of the SWP or CVP
6 export facilities to change if your protective measures were
7 implemented?

8 A. It is possible given the objective of the measure, which
9 is in part to facilitate the movement of the fish downstream.

10 Q. Let me ask you to turn your attention to Dr. Bennett's
11 2005 monograph. And I'd like to ask you a few questions about
12 population estimates.

13 Do you have an understanding of -- let me actually
14 ask you to turn to Figure 34 on page 53. You may recall you
15 were asked some questions about this graph and what it might
16 or might not say with respect to risk of extinction of the
17 delta smelt.

18 Do you have an understanding of the year period that
19 Dr. Bennett analyzed in determining the population of delta
20 smelt that -- and in using -- let me withdraw the question.

21 In calculating the risk of extinction, what year
22 period did Dr. Bennett use to understand the existing
23 population of delta smelt?

24 A. Dr. Bennett did it for two different periods. First he
25 used the entire period for which we have the data, which is

1 1967 to 2003. He also used a slightly shorter data set that
2 extended from 1982 to 2003. He conducted the same extinction
3 risk in population viability analysis on both of those data
4 sets.

5 Q. So he was looking at the population during those time
6 periods and population?

7 A. Yes.

8 Q. What was happened to the population of delta smelt
9 according to the abundance indices since 2003?

10 A. Since 2003, the abundance of delta smelt as measured by
11 all of the surveys conducted by the Department of Fish & Game,
12 has declined substantially.

13 Q. Dr. Swanson, you were asked to comment on your prior
14 commentary on Dr. Hanson's use of population estimates. Let
15 me -- I believe that prior commentary of yours was in your
16 reply declaration, which is dated 8-13-2007 and is Plaintiffs'
17 Exhibit 4 in evidence.

18 A. I have it.

19 Q. I'd ask you to look at paragraph 13 on page 7.

20 A. I have it.

21 Q. And read the last two sentences of that paragraph.

22 A. Beginning with "The utility"?

23 Q. Yes.

24 A. "The utility of any numeric results from this approach is
25 largely limited to comparisons over multiple years

1 rather than meaningful estimates of the number of
2 individual delta smelt present in the estuary at any
3 time (as reported by Bennett in 2005, in the only
4 published, peer-reviewed description of this type of
5 population estimation exercise). Dr. Hanson does not
6 use his method to attempt to evaluate the trend in
7 the total or relative size of the delta smelt
8 population over the past several years, however, but
9 instead offers only an estimate for a part of one
10 year, thereby obscuring the sharp population drop in
11 the past years found in every survey."

12 Q. Dr. Swanson, do you have an understanding whether Dr.
13 Bennett used his population estimation methods to
14 calculate -- or to look at trends in population through time?

15 A. He did.

16 Q. Do you have an understanding of whether Dr. Hanson did
17 that?

18 A. He did not report that in his declaration.

19 Q. Dr. Swanson, you were also asked about an emergency
20 petition to list the delta smelt, which I believe has been
21 identified as SWC Exhibit D. Would you please look at that.

22 A. I have it.

23 Q. And I believe you were asked about your prior statements
24 in that document. Could I ask you to turn to page eight of
25 that document, please.

1 In the paragraph under heading "2. Historic and
2 Current Abundance" and to read the last two sentences of that
3 paragraph.

4 A. The sentence that starts with "None"?

5 Q. Yes.

6 A. "None of these indexes provide direct measurements of
7 actual population abundance. However, total
8 population size calculated from the raw survey data
9 and habitat volume estimates by Bennett (2005) show a
10 good linear correspondence with the abundance
11 indices, suggesting that the indices represent
12 reasonable estimates of relative population
13 abundance."

14 Q. When you -- what is your understanding of the phrase
15 "relative population abundance"?

16 A. "Relative population abundance" means that you're
17 comparing population in one year to population in some other
18 year and that the only thing that you're interested in is
19 whether or not they are different or the same, not the
20 absolute value of the number that you are using to represent
21 those populations.

22 Q. Has Dr. Hanson used his population estimates to provide an
23 analysis of relative population abundance?

24 A. No.

25 Q. If I could ask you to turn to page 10 at the top. You

1 were also asked about your statements on that page. Could you
2 briefly describe -- let me ask it this way: Does the analysis
3 at the top of that page represent an analysis of relative
4 population abundance through time?

5 A. The analysis that I was describing in this document, you
6 mean? Yes. I always describe relative abundance.

7 Q. And could you explain how we know that from looking at
8 this paragraph? Maybe I could reframe the question.

9 Did you, in that paragraph, calculate an estimate of,
10 I think it says -- did you, in that paragraph, identify
11 estimates of population in multiple years?

12 A. I did.

13 Q. And did you compare those estimates of population in
14 multiple years?

15 A. I did.

16 Q. Has Dr. Hanson provided such an analysis for us?

17 A. He has not.

18 THE COURT: While we are waiting for the next
19 question, let me ask. We have the 1.8 to 800,000 calculation
20 that was presented from Dr. Hanson. Have you seen or heard or
21 been exposed to any similar population estimates from anybody
22 else who's studying the delta smelt, in the same time frame?

23 THE WITNESS: I have reviewed the declaration
24 prepared by Dr. Richard Sitts, which I believe describes a
25 similar analysis he conducted. And, in fact, is referenced by

1 Dr. Hanson in his declaration.

2 I believe Dr. Sitts used the same 20 millimeter
3 survey 9 to calculate his estimate. And if I recall
4 correctly, his estimate was approximately one million fish.

5 I am not aware of any other recent population
6 estimates from those data.

7 THE COURT: And again, from your study, research,
8 reading, do you have any present knowledge of, in the same
9 time period, what either of the agency population estimates
10 were, if they made any, for delta smelt?

11 THE WITNESS: I am not aware whether they made any
12 and if they did, what they were.

13 THE COURT: Thank you.

14 BY MR. WALL:

15 Q. Dr. Swanson, did the declaration of Dr. Sitts to which you
16 referred provide confidence intervals for his population
17 estimates?

18 A. No.

19 Q. And did it provide estimates of population through time?

20 A. Not that I recall.

21 Q. Are you aware of any published peer-reviewed literature
22 that provides an estimate of population for delta smelt using
23 Dr. Hanson's methodology for a single year without comparing
24 the results that that methodology would provide through time?

25 A. Not that I can think of.

1 Q. Dr. Hanson -- I mean Dr. Swanson, I'm sorry. Am I -- did
2 Dr. -- I believe you testified yesterday that Dr. Hanson
3 calculated his estimate of total population based on an
4 abundance index; is that correct?

5 A. No. He based his population estimate on the data from
6 individual survey stations that were sampled as part of survey
7 9 for the 20 millimeter survey conducted in the first week in
8 July.

9 Q. And are those the same data that are used to calculate the
10 20 millimeter survey index?

11 A. They do not calculate an index from the 20 millimeter
12 survey.

13 Q. I see.

14 A. The way I expressed those data in the tables and graphs
15 that I've presented was as total number of fish caught for
16 each of the comparable sequential surveys.

17 Q. I'm going to ask you to look at another exhibit that I
18 need to get first.

19 I'd ask you to look at Plaintiffs' 6. Do you have a
20 copy of that in front of you? It's a table that says at the
21 top "Delta smelt abundance as measured by Spring Kodiak
22 Survey," et cetera.

23 A. I have it.

24 Q. Now, there's a column there that says "20 millimeter"; is
25 that correct?

1 A. Yes.

2 Q. And there's a little note underneath the table,
3 immediately underneath the table. Could you read the first
4 note?

5 A. The first note says that for the 20 millimeter survey,
6 results through survey eight.

7 Q. What does that mean?

8 A. I'm sorry, was the question what does it mean?

9 Q. Yes.

10 A. That the 20 millimeter survey is usually a series of nine
11 sequential surveys that are conducted throughout the March
12 through July period. At the time I constructed this table,
13 survey nine had not yet been completed and the data were not
14 fully available for the total number of fish that were
15 collected in that survey and therefore I could not calculate
16 the cumulative number through that survey.

17 So for this table, I used the total number of larval
18 and juvenile delta smelt that were collected by the 20
19 millimeter surveys one through eight for each of these years.

20 Q. What was the number of juvenile delta smelt captured by
21 the -- or the number of delta smelt captured by the 20
22 millimeter survey in 2007 through survey eight?

23 A. Through survey eight, 98 delta smelt were collected.

24 Q. What was the next lowest number of delta smelt?

25 A. That would be in 1998 when 587 larval and juvenile delta

1 smelt were collected through survey eight.

2 Q. Now, am I correct that for his 2007 population estimate,
3 Dr. Hanson extrapolated from the survey results in the 20
4 millimeter survey?

5 A. Yes. From individual surveys within that multi survey.

6 Q. And do you have any understanding of -- or expectation
7 with regard to what population estimates would have been
8 generated had he done a similar analysis using 20 millimeter
9 survey data from previous years?

10 A. Based -- given that his estimate is based on the numbers
11 of fish caught by the survey and their location within the
12 system, and based on the fact that in all previous years much
13 larger numbers of fish were caught, it would be my firm
14 expectation that his method of estimation of population
15 abundance would have yielded much larger numbers for these
16 previous years.

17 Q. Dr. Swanson, you were also asked some questions about a
18 figure that appears in -- I think it's your July declaration.
19 That relates delta smelt abundance to Delta exports.

20 A. I believe it's the August declaration.

21 Q. Yes. Thank you. It's at page 34 of the August
22 declaration. Is this relationship depicted in Figure 2 on
23 page 34 a principle basis for any of your recommended
24 protective measures?

25 A. It is not.

1 Q. Could I ask you to please turn to paragraph 47 of this
2 declaration on the -- on page 38 and read the first sentence.

3 A. "Despite clear evidence of the significant relationship
4 between seasonal water export rates and delta smelt abundance,
5 export rates are not the only or even the most useful variable
6 for examining effects of water project operations on delta
7 smelt."

8 Q. And is that sentence commenting on the figure we just
9 looked at?

10 A. Yes.

11 Q. Now, if I recall correctly, you were asked some questions
12 about a document that's been marked as State Water Contractors
13 Exhibit E. And you were asked specifically about -- some
14 questions about --

15 A. Could you describe the exhibit, please?

16 Q. It says at the top, "Review of the 2005 Environmental
17 Water Account Workshop."

18 A. I have it.

19 Q. If you could read the sentence that carries over from page
20 12 to page 13, please.

21 A. Starting with "both studies"?

22 Q. Yes.

23 A. "Both studies were preliminary and in neither study were
24 conclusions and findings sufficient to warrant management
25 recommendations."

1 Q. Now, did you make any recommendations in your declaration
2 that were based specifically on Figure 2 on page 34 of your
3 August 3rd declaration?

4 A. I did not.

5 Q. Dr. Swanson, you were also asked some questions about your
6 proposals for Old and Middle River flows in actions five, six
7 and seven if I recall correctly. Could you briefly describe
8 to us again what the basis for those Old and Middle River flow
9 recommendations were.

10 A. I based the recommendation for the level of Old and Middle
11 River flow on the results of research presented by Dr. William
12 Bennett showing that delta smelt larvae hatched during the
13 period in which VAMP was implemented typically from mid
14 May -- excuse me, mid April to mid May were really the only
15 larvae that survived to contribute significantly to the
16 population of the species later in the year.

17 I then examined Old and Middle River flow data for
18 the previous -- for the period from 1999 through 2007 and
19 measured Old and Middle River flows during the VAMP period and
20 for the periods, months and parts of months preceding and
21 following the VAMP.

22 I found that during the VAMP, on average, for years
23 in which the VAMP was implemented, excluding water year 2006,
24 which was extremely wet and, in fact, Old and Middle River
25 flows were very large and positive, I found that on average

1 Old and Middle River flow conditions during the VAMP were
2 minus 1500 cubic feet per second.

3 I used that number as the target or the basis for
4 recommending that Old and Middle River flow conditions prior
5 to VAMP, but when larval delta smelt were present in the
6 system and potentially vulnerable to entrainment on the basis
7 of my understanding of Dr. Bennett's research, which was that
8 larval delta smelt survived that were hatched during the VAMP
9 and with the expectation that providing similar flow
10 conditions on Old and Middle River, which has been shown to
11 affect entrainment rates, would improve the survival of delta
12 smelt larvae hatched before the VAMP and after the VAMP.

13 Q. Now, you mentioned a target flow of minus 1500. Did your
14 proposal provide for a range of flows?

15 A. It did. Old and Middle River flows are not only
16 responsive to water management operations, but they vary
17 substantially with the tidal cycle, which represents a
18 challenge for management.

19 Therefore, I provided a range of 1500 cubic feet per
20 second around my target, so the range is for minus 750 cubic
21 feet per second to 2250 cubic feet per second centered on my
22 protective objective of minus 1500 really as a practical
23 consideration for water management operations.

24 I base the size of this range, 1500, giving the water
25 projects a range of 1500 cubic feet per second Old and Middle

1 River flows to work within, on the experiences the water
2 projects had earlier this year, managing Old and Middle River
3 flows for the protection of adult delta smelt earlier this
4 year during the winter.

5 During that period, water projects operators were
6 very successful at managing Old and Middle River flows at
7 levels between minus 3500 and 5,000 cubic feet per second, a
8 range of 1500 cubic feet per second. They also managed those
9 flows using a five-day average to measure Old and Middle River
10 flow. And based on their success at implementing Old and
11 Middle River flow management earlier this year, I used that to
12 define the ranges and the measurement parameters for my
13 recommendation.

14 Q. Do you know whether the projects might be able to meet
15 those flow recommendations without simply duplicating the VAMP
16 action?

17 MR. WILKINSON: Objection. That's beyond the range
18 of her expertise.

19 THE COURT: Let's ask. Do you have any information
20 that would enable you to answer this question?

21 THE WITNESS: I can base an answer on my observations
22 of water project operations earlier this year when an attempt
23 was made to meet a recommendation for zero cubic feet per
24 second. But other than that, it is beyond my specific area of
25 expertise.

1 THE COURT: All right. Well, since the question is
2 more general than that, I will sustain the objection.

3 BY MR. WALL:

4 Q. Dr. Swanson, Mr. Wilkinson asked you some questions about
5 whether in a wet year your flow recommendations would be
6 necessary to protect delta smelt; do you recall that
7 discussion?

8 A. I do.

9 Q. Dr. Swanson, could project pumps have an impact on
10 spawning or larval delta smelt in a wet year?

11 A. Yes.

12 Q. Could you explain that for us?

13 A. The direct impacts of the water project export operations
14 on delta smelt in a wet year would be related to really
15 whether -- to what extent the delta smelt came within the
16 proximity of export operations, the rate at which water was
17 being exported and the timing.

18 Regardless of whether it's a wet or dry year, adult
19 delta smelt migrate through the Delta potentially past the
20 pumps to areas upstream for spawning. They don't spawn in
21 Suisun Bay if it's a wet year, even though it's fresh water
22 conditions in Suisun Bay.

23 Similarly, larvae passing near the vicinity of the
24 pumps, even if flows are good, are still potentially
25 vulnerable to entrainment. We do see, in the historic record

1 of data, entrainment of adult and juvenile delta smelt even in
2 wet years and under high flow conditions.

3 Q. Dr. Swanson, referring to Plaintiffs' Exhibit 1, the map
4 that's next to you, could you show the Court the area of the
5 Delta that --

6 THE COURT: If you don't mind, counsel, let me ask a
7 followup question --

8 MR. WALL: Yes.

9 THE COURT: -- to Dr. Swanson's answer.

10 Taking the answer that you just gave and recognizing
11 that I'm inferring from that that proximity of the smelt to
12 the facilities is what produces the potential elimination.
13 Are you using the history, your experience or something else
14 to recommend that if you have high flow volume, if you have
15 plenty of water in the system, then the water quality is
16 suitably where you want it to be and I assume the primary
17 concern then is the fish encountering flows that are going to
18 overcome their ability to stay out of involvement with the
19 pumps or being transported into habitat that is inhospitable
20 where they're going to perish. Is that what's happening?

21 THE WITNESS: It's possible. The more
22 realistic -- that's not a way to phrase it. I'm sorry. In
23 fact, in really wet years, Old and Middle River flows tend to
24 be positive and therefore, there would be no need for the
25 water projects to make any modifications in their water

1 management operations to achieve the protective level that I
2 have identified here.

3 THE COURT: And so your trigger simply doesn't call
4 for action depending upon conditions.

5 THE WITNESS: I would characterize it instead that
6 the water projects wouldn't have to modify their operations in
7 order to meet the protective action because flows would
8 already be greater than minus 1500 cfs.

9 THE COURT: All right. You may continue.

10 BY MR. WALL:

11 Q. Dr. Swanson, is there an area of the Delta smelt's
12 critical habitat that is influenced by negative flows on the
13 Old and Middle River?

14 A. This area here, from north of the water project facilities
15 essentially up to the boundary formed by the Lower San Joaquin
16 River as it passes through the Delta, this whole area here is
17 very substantially influenced by water project operations and,
18 in particular, the rate at which water is being exported at
19 the diversions. Particularly in conjunction with the amount
20 of water flowing into the Delta from the San Joaquin River.

21 Q. And Dr. Swanson, are you able to visually estimate what
22 portion of the critical habitat you just referred to on the
23 map?

24 A. I would estimate that it's approximately one-third of the
25 critical habitat identified on this map.

1 Q. And is that area of the critical habitat made less
2 valuable for the survival or recovery of the delta smelt as a
3 result of project operations at high -- that cause high rates
4 of negative flow on the Old and Middle River?

5 A. Yes, it is. For delta smelt, as their life history shows,
6 essentially potentially use that portion of the critical
7 habitat from approximately December, when the adults beginning
8 moving upstream to spawn, through July -- June or July, when
9 the juveniles have all moved downstream.

10 Physical habitat for spawning does exist in this
11 portion of the Delta, at least in some places. The overall
12 water quality conditions with regard to temperature and
13 clarity and even salinity are within the range that are both
14 tolerable and preferred by the species.

15 And we have seen, even in recent years, survey
16 evidence showing that in some years, delta smelt do attempt to
17 move upstream to spawn in habitat using this portion of their
18 habitat. And likewise we've seen evidence from larval surveys
19 that juveniles move down.

20 However, because of water project operations, this
21 habitat has become very hazardous for delta smelt even though
22 the environmental conditions with regard to water quality and
23 physical habitat exist, for fish to attempt to migrate
24 upstream to get to that habitat, they're highly vulnerable to
25 lethal entrainment at the water projects, depending on the

1 rate of operation. And for those fish which successfully pass
2 by those export operations without being entrained and
3 successfully spawn, their larvae are even more vulnerable to
4 entrainment as they attempt to make their way downstream.

5 So in effect, water project operations have rendered
6 approximately one-third of the Delta smelt's critical habitat
7 very dangerous for them. And it certainly represents, in my
8 view, an adverse modification.

9 THE COURT: We have now reached the noon hour.
10 What's your estimate to complete your redirect?

11 MR. WALL: I think I can finish it in about five
12 minutes.

13 THE COURT: Well, let's take five minutes and finish
14 it.

15 MR. WALL: Okay. I'll do that.

16 Q. Dr. Swanson, the Court asked you some questions during the
17 cross-examination about the relationship between flows on the
18 Lower San Joaquin River and flows on Old and Middle River.
19 Could I direct your attention to your August 3rd declaration
20 at page 14.

21 A. 13 declaration?

22 Q. August 13, the second declaration. I believe it's
23 Plaintiffs' Exhibit 4. The page number is 14. Do you have
24 that in front of you?

25 A. I do.

1 Q. Is there a figure on that page?

2 A. Yes, there is a graph.

3 Q. Could you briefly advise us what that figure represents?

4 A. This graph plots or shows the flow in the Lower San
5 Joaquin River, that's depicted by the solid line, and also the
6 combined flow of Old and Middle River, the daily flows for the
7 entire water year 2003. So on the X axis, the first increment
8 there is the month of October and it extends through the year
9 ending in the month of September. The flows are shown ranging
10 from minus 15,000 negative flows to positive 15,000 cubic feet
11 per second.

12 And this is part of the very brief analysis I use to
13 examine whether net westerly flows on the Lower San Joaquin
14 River recommended by Dr. Hanson as a tier one protection, I
15 was interested to know what they corresponded to with regard
16 to Old and Middle River flow conditions. A variable that we
17 know has some relationship with delta smelt take.

18 And just visual examination of this graph shows that
19 when flow on the Lower San Joaquin River is positive, meaning
20 it's above the zero line, if you just look down to the
21 corresponding Old and Middle River flow plot, the dash line,
22 you can see that during the winter, under net westerly flows
23 on the Lower San Joaquin, Old and Middle River flow ranges
24 from, using a visual approximation, minus 3 to 4,000 to as low
25 as about minus 9,000 cubic feet per second representing

1 extreme negative flow conditions on Old and Middle River.

2 The lowest Old and Middle River flow conditions are
3 the least negative during a period when Lower San Joaquin
4 River flow is net westerly or positive occur during the VAMP,
5 which is -- as you can see, is halfway between April and May.
6 It's a very large dramatic difference in overall flow
7 operations in this area of the Delta.

8 And even under those conditions where you have rather
9 substantial positive flows measured at the location that I
10 assume Dr. Hanson intended this metric to be measured, which
11 is at Jersey Point on the Lower San Joaquin River, even then
12 Old and Middle River flows are somewhat negative.

13 Q. Did this inform your views about Dr. Hanson's proposed
14 remedial measure?

15 A. It did.

16 Q. Dr. Swanson, Mr. O'Hanlon asked you some questions about
17 what you did and did not consider in developing your
18 proposals. Did you need to calculate salvage at the pumps in
19 order to determine conditions appropriate to prevent jeopardy
20 to the delta smelt?

21 A. No.

22 Q. Why is that?

23 A. I based my recommendations for protective actions on
24 analysis of data that have shown the impacts of the projects
25 in the past and the survival of the delta smelt under specific

1 conditions. Given the current status of the population in my
2 judgment, any adverse impact on the species represents a
3 problem. And likewise, any adverse modification of their
4 habitat, particularly with regards to the current degraded
5 conditions in the system, is also a potential problem and
6 would likely increase the extinction risk for the species.

7 Q. Dr. Swanson, did you need to know how EWA assets might be
8 used next year in order to conduct your analysis?

9 A. No.

10 Q. Why not?

11 A. My analysis -- my analyses were to determine what
12 conditions were necessary to protect the fish from adverse
13 harm from the projects and from adversely modifying their
14 habitats. The recommendations I have made make no assumptions
15 with regard to whether they will be implemented using
16 Environmental Water Account water or using some other
17 approach.

18 Q. And did you need to know how the so-called B2 water would
19 be used in order to conduct your analysis?

20 A. No. For all the same reasons.

21 MR. WALL: Give me one moment, Your Honor.

22 THE COURT: Yes, I will.

23 MR. WALL: I think we're done with our redirect, Your
24 Honor.

25 THE COURT: All right. We're going to take the noon

1 recess, ladies and gentlemen. We will resume at 1:15 p.m.

2 Going to go off the record.

3 (Off the record.)

4 THE COURT: We're back on the record in NRDC versus
5 Kempthorne. Dr. Swanson, if you would, please, resume the
6 witness stand. And Mr. Wilkinson is not --

7 MR. WILKINSON: Yes, Your Honor.

8 THE COURT: Here he is. You may continue.

9 MR. WILKINSON: Actually.

10 THE COURT: You had finished.

11 MR. WILKINSON: I think the redirect finished so the
12 question would be whether the federal defendants --

13 THE COURT: Yes. Thank you very much.

14 MR. MAYSONETT: Your Honor, we have no recross.

15 THE COURT: Mr. Lee.

16 MR. LEE: We have a brief set of questions.

17 THE COURT: All right. You may proceed.

18 RECCROSS-EXAMINATION

19 BY MR. LEE:

20 Q. Good afternoon, Dr. Swanson.

21 A. Good afternoon.

22 Q. You stated that you believe your actions in your action
23 plan would be sufficiently protective that they may result in
24 the termination or possible termination of salvage at the
25 pumps by mid June. Is that a correct characterization of your

1 testimony?

2 A. You are speaking with regards to action seven, I believe.

3 Q. That's correct.

4 A. And I stated that given the lower Old and Middle River
5 flow conditions, it was possible that salvage would be
6 completed before July, I believe.

7 Q. I believe your testimony was mid June; is that correct?

8 MR. WALL: I'm going to object to that. I believe
9 it's argumentative, the testimony speaks for itself.

10 THE COURT: Yes. The testimony speaks for itself.
11 And you can ask the next question.

12 BY MR. LEE:

13 Q. Your action seven would provide for net negative flows in
14 Old and Middle River between negative 750 cfs to negative
15 2,250 cfs; is that correct?

16 A. Yes.

17 MR. LEE: Your Honor, we would like to mark as
18 Plaintiffs' Exhibit -- excuse me, DWR Exhibit F, Exhibit D
19 that is attached to the declaration of John Leahigh.

20 THE COURT: Yes, you may. Do we have a title for the
21 document? It's a chart, a compilation?

22 (Defendant's Exhibit DWR F was marked for
23 identification.)

24 THE COURT: It's an analysis of last date of delta
25 smelt salvage by Banks Pumping Plant and Jones Pumping Plant.

1 MR. LEE: May I approach the witness, Your Honor?

2 THE COURT: You may.

3 BY MR. LEE:

4 Q. Are you familiar with this chart, Dr. Swanson?

5 A. I have seen it before, yes.

6 Q. All right. According to this table, what was the water
7 year type in the year 1998?

8 A. Wet.

9 Q. Do you know whether the net flows on Old and Middle River
10 between May and July of 1998 were negative or positive?

11 A. I do not.

12 MR. LEE: Your Honor, we would like to make an offer
13 of proof. Our expert witness, Mr. Leahigh, will testify that
14 the flows in 1998 were positive from February through July and
15 will do so on direct.

16 THE COURT: Well, under Federal Rule of Evidence 201,
17 the law requires you to provide the exhibit which you wish the
18 Court to take judicial notice of. And so if you are inferring
19 a fact, you can't do it that way in the present form that
20 you've asked the question. This is an expert. You can ask
21 the expert to assume a set of hypothetical facts.

22 MR. LEE: Yes, yes.

23 THE COURT: But you can't have me take judicial
24 notice of something you haven't presented. And it has to be
25 provided to the other side with the notice that you're going

1 to do that. Under Federal Rule of Evidence 201(a).

2 MR. LEE: Your Honor, the only purpose of this
3 document was to make assumed facts for the witness' purposes.

4 Q. If you assume that we have net positive O & M -- that is
5 Old and Middle River flows between February and July, would
6 that flow regime in Old and Middle River likely be more
7 protective of smelt than a negative flow regime?

8 A. To make sure that I understand the question, you're saying
9 under conditions of net positive Old and Middle River flows
10 for the entire period of December through July --

11 Q. No, Your Honor. No, ma'am. We're talking about between
12 the period of February and July.

13 A. I beg your pardon. February through July.

14 Q. Would it -- would positive O & M flows between February
15 and July likely be more protective of the delta smelt than net
16 negative flows during that time period?

17 A. Based on the limited understanding that we have, yes.

18 Q. Would there be any need for protective actions if we had
19 protective flows, positive flows, net positive flows between
20 February and July during -- as previously described?

21 MR. WALL: Objection. Incomplete hypothetical. Plus
22 it's vague.

23 THE COURT: Can you answer this question the way it's
24 phrased?

25 THE WITNESS: Please restate the question.

1 MR. LEE: I'll retry --

2 THE COURT: You left out the location in your
3 hypothetical, and so it's fairly broad.

4 MR. LEE: I'll withdraw the question, Your Honor.
5 I'll withdraw the question.

6 THE COURT: You may rephrase.

7 BY MR. LEE:

8 Q. According to Exhibit D here, what was the last date on
9 which smelt salvage was recorded in 1988 at the State Water
10 Project and CVP pumps?

11 A. 1988 is not listed here.

12 Q. 1998, I said.

13 A. I beg your pardon. The last date at the banks project was
14 July 10 and the last date at the Jones Pumping Plant was July
15 6.

16 MR. LEE: Thank you, Your Honor. I have no further
17 questions.

18 THE COURT: Thank you. Now, Mr. Wilkinson.

19 MR. WILKINSON: We have no recross-examination, Your
20 Honor.

21 THE COURT: Thank you. Mr. O'Hanlon.

22 MR. O'HANLON: None here.

23 MR. LEE: Your Honor, I would like to move this item
24 into evidence.

25 THE COURT: Any objection to Exhibit F?

1 MR. WALL: Your Honor, no objection.

2 THE COURT: All right. Exhibit F is received in
3 evidence.

4 (Defendant's Exhibit DWR F was received.)

5 THE COURT: I am assuming that Mr. Lee could provide
6 the foundation for it.

7 MR. WALL: I'm assuming that as well, Your Honor.

8 THE COURT: The foundation, Mr. Lee, for this
9 document. There hasn't been an objection, so Exhibit DWR
10 Exhibit F is received in evidence.

11 Now, any re-redirect?

12 MR. WALL: No, Your Honor.

13 THE COURT: May this witness be excused?

14 Thank you, Dr. Swanson.

15 THE WITNESS: Thank you, Your Honor.

16 THE COURT: You may step down. Any further evidence
17 from the plaintiffs?

18 MR. WALL: We'd like to reserve our right to present
19 testimony on rebuttal if it proves necessary, Your Honor.

20 THE COURT: Yes, you may. Thank you very much.

21 Mr. Maysonett, do you wish to present evidence?

22 MR. MAYSONETT: Yes, Your Honor.

23 THE COURT: You may proceed.

24 MR. MAYSONETT: Your Honor, I have a very brief
25 opening statement. And there's actually a preliminary issue

1 that I'd like to raise before, if possible.

2 THE COURT: Yes.

3 MR. MAYSONETT: By way of opening statement, we will
4 present the testimony of Ms. Cay Goude, Your Honor, here
5 today. Ms. Goude is a biologist with the Fish & Wildlife
6 Service that has been directly involved with the preparation
7 of the suite of actions that the service has proposed as
8 interim remedies in this case.

9 Taken together with the other evidence that we've
10 submitted, Ms. Goude's testimony will demonstrate that the
11 service's proposal will both protect the delta smelt while
12 avoiding unnecessary burdens on the cities, towns and farms
13 that rely on the projects for water. And by keeping more
14 water in the system, the service's proposal will also better
15 protect other listed species in the Delta, notably listed
16 salmon species, and will better insure the projects can
17 continue to meet the needs of the species in coming years.

18 As such, only the service's proposal is narrowly
19 tailored and meets the standard for injunctive relief.

20 That's all I have to say in opening statement.

21 THE COURT: Thank you.

22 MR. MAYSONETT: Your Honor, a point of clarification.
23 You know, our argument, as I'm sure you knew and as my opening
24 statement explains, is that the service proposal will both
25 protect the smelt, but also will do so at less water cost than

1 the plaintiffs' proposal.

2 Now, part of that will be demonstrated by Ms. Goude's
3 testimony. She's a biologist and she will address the needs
4 of the smelt. Part of it will be -- will address issues of
5 water costs, which we addressed during the briefing period by
6 submitting declarations by Mr. Milligan and others.

7 We didn't intend to attempt to move the other
8 evidence into this proceeding because we understood it to have
9 a limited scope and because we understood that the Court would
10 rely on those declarations as it relied on the declarations
11 during summary judgment period and the TRO.

12 But I thought at this point, since the plaintiffs
13 have objected to the presentation of declarations by
14 non-testifying experts and because the Court has sustained
15 that objection, because the Court had indicated that you
16 wanted things moved into evidence, how would you like us to
17 handle issues like the declaration of Mr. Milligan?

18 THE COURT: Well, it is an evidentiary proceeding.
19 And so I think here we're going to have to inquire of the
20 plaintiffs what their view is about the form in which this
21 evidence is presented.

22 Now, they made a preliminary substantive objection on
23 the grounds of relevance and materiality to any evidence that
24 would go to, if you will, the means or the form of
25 remediation, any quantification of it, any economic losses or

1 other costs or hardships that would be visited by the adoption
2 of the remedy that each of the parties has proposed.

3 And so I guess in the first instance, the question is
4 if there is a dispute about any of the statistics, the
5 information, the math, then I would expect that kind of
6 information ought to be subject to cross-examination if the
7 parties don't agree on it. Otherwise you don't have to agree
8 to a proposal when you're opposing it, but if the underlying
9 evidence that supports and explains the proposal isn't
10 controversial, then we shouldn't take the time and, quite
11 frankly, the resources of the parties to take testimony we
12 don't need to take if the underlying facts aren't
13 controversial. But whether or not they will ultimately serve
14 to justify remedial action, that's going to be what's decided
15 at the end of this hearing.

16 So what is the plaintiffs' position on these
17 subjects? Because I have overruled in part the foundational
18 objection, the omnibus objection that you made to, if you
19 will, any costs, burdens, hardships, whatever form they're in,
20 that was your evidentiary objection at the outset of the
21 hearing, which I have limited.

22 I said at this stage I'm not going to get into
23 detailed economic cost, I'm not going to prevent parties from
24 saying in the overall what they believe the worst case or the
25 likely result in closed terms would be for implementation of

1 anybody's remedy.

2 Mr. Wall.

3 MR. WALL: Your Honor, we -- for the record we
4 maintain those objections although we understand the Court has
5 already ruled on them and overruled the objections in part.
6 It's our understanding that this is an evidentiary proceeding
7 and if declaration testimony is going to come in from
8 witnesses, frankly, we think it's important that we have an
9 opportunity to cross-examine the declarants.

10 That said, my understanding is that the testimony of
11 Mr. Leahigh, on behalf of the Department of Water Resources,
12 will address the cost estimates for, among other things, the
13 Fish & Wildlife Service's action matrix. And my understanding
14 is also that Mr. Leahigh's testimony is quite similar in this
15 regard to the testimony to which Mr. Maysonett referred.

16 THE COURT: Mr. Milligan?

17 MR. WALL: Mr. Milligan. I'm sorry. And, you know,
18 in the interest of time, we all had to pick and choose our
19 witnesses. This proceeding could stretch on for months if all
20 60 or so declarants were here in court.

21 THE COURT: And we're not going to do that.
22 What -- so that I understand your position, what if Mr.
23 Maysonett offered the Milligan declaration and then we -- you
24 have the right to cross-examine Mr. Milligan?

25 MR. WALL: If that were to happen, I think we would

1 cross-examine him and we would have no objection to his
2 declaration coming in.

3 THE COURT: All right. Seems that would be, as a
4 matter of procedural due process, the fair thing to do, Mr.
5 Maysonett. And so we're not going to get to him today
6 obviously, but if there are facts that you need to have in the
7 record relative to your position, then we'll -- it's already
8 indicated there won't be an objection to Mr. Milligan's
9 declaration, but he should be present for cross-examination.

10 MR. MAYSONETT: Your Honor, do we have a sense of
11 when that will be? Will we take that up Wednesday?

12 THE COURT: Well, as I understand it now, so that
13 we're clear, because even the courtroom deputy wasn't clear.
14 When are we resuming our evidentiary hearing?

15 MR. MAYSONETT: My understanding --

16 THE COURT: There was some talk about a witness only
17 able to be here on Tuesday afternoon. And so then we talked
18 about Wednesday. I know that we're going to be in session on
19 Friday. We'll be in session on Thursday. So I need to know.
20 Someone said they had a witness who could only be here Tuesday
21 afternoon. Ms. Wordham?

22 MS. WORDHAM: Your Honor, that's the Department of
23 Water Resources witness, Mr. John Leahigh. He can be here on
24 Tuesday afternoon or any time on Friday. But he cannot be
25 here Wednesday or Thursday.

1 THE COURT: All right.

2 MR. WALL: Your Honor, so are we here Wednesday
3 through Friday? We would be available those days. Although
4 if Mr. Milligan were to testify, we would like to have advance
5 notice of when that's going to happen.

6 THE COURT: Yes. Well, it sounds like we can put him
7 on on Wednesday.

8 MR. MAYSONETT: Okay. We can do that, Your Honor.

9 THE COURT: He'll be the first witness after -- for
10 cross, after Ms. Goude.

11 MR. MAYSONETT: Mr. Milligan is available on
12 Wednesday.

13 THE COURT: All right. Thank you. Mr. Wilkinson.

14 MR. WILKINSON: Yes, Your Honor. The concern that
15 Mr. Maysonett is expressing is I think shared by all of the
16 defendant intervenors as well. We had a great number of
17 declarations that were submitted to the Court as part of the
18 process that was set up. And those declarations talk fairly
19 extensively about the impacts within the individual districts
20 that are served with water, in our case by the State Water
21 Project and in theirs by the Central Valley Project.

22 I guess the question I have is what is the Court's
23 pleasure with regard to those declarations? Are those
24 something that will be considered by the Court as you arrive
25 at a decision in this case or is your decision going to be

1 confined to the evidentiary proceedings here?

2 THE COURT: The purpose of setting the evidentiary
3 proceeding was, quite frankly, to present the evidence
4 concerning the remedies. Now, I think we have two levels of
5 inquiry here.

6 The first is the legal objections that were made by
7 the plaintiffs to types of evidence, including extended
8 economic evidence.

9 And then the second was, as a practical matter, how
10 many witnesses do we end up with and on what subjects. I
11 think we need to know that before I can answer your question.

12 MR. WILKINSON: It would be more than the one that we
13 have.

14 THE COURT: Yes.

15 MR. WILKINSON: I can assure the Court that. So,
16 again, the question is do we make an offer of proof to the
17 Court that if these declarants were to be called as witnesses,
18 they would talk about these things that are in their
19 declarations? Do we just leave the declarations with the
20 Court? Do we ask now for the opportunity to call these folks?
21 It's a little unclear to me.

22 THE COURT: Yes, I understand. What I think we're
23 going need to do is this. You need to, if you will -- and
24 let's try to do this by the end of today -- to look at all
25 your witnesses, your declarants, separate them by subject

1 matter and then give me at least an indication, can be by way
2 of offer of proof, of what subject areas you want to offer for
3 consideration by the Court in relation to the proposed remedy.

4 And I want a statement of the relationship, both from
5 a causation standpoint and from a legal standpoint of that
6 testimony about impacts, whatever it is, to the remedy itself.
7 Which would make it relevant under Rule 401.

8 And so that's how I want you to proceed.

9 MR. WILKINSON: Thank you.

10 MR. WALL: Your Honor, we limited ourselves to two
11 witnesses as well and the other witness we would have called
12 relative to these issues, we not only thought the testimony,
13 although responsive to their declarants' testimony, was
14 objectionable, it was beyond the issues before the Court, but
15 he was unavailable the original proceeding dates. I assume
16 that we would have an opportunity to proceed on the same basis
17 as --

18 THE COURT: Yes, you would. I mean, the -- what I've
19 just announced applies to every party. Every party has the
20 same rights before the Court and is entitled to the same fair
21 consideration. And so, of course -- and if it turns out that
22 evidence does come in which is germane to the subject area of
23 that witness' testimony, you have reserved rebuttal. And so
24 you would have the right to put the witness on.

25 MR. WALL: Thank you, Your Honor.

1 MS. WORDHAM: Your Honor, just briefly. The
2 plaintiffs did have an opportunity to designate a rebuttal
3 witness and they elected not to do so.

4 MR. WALL: Your Honor, if I might, that was based on
5 the original witness list that we were provided. We're now
6 talking about substantially expanding the proceedings.

7 THE COURT: I think the difference is that Mr.
8 Maysonett has asked permission to, if you will, expand his
9 evidentiary presentation. Mr. Wilkinson has done the same. I
10 expect Mr. O'Hanlon is going to do the same. And so the rules
11 are changing here, I recognize midstream, but that's the
12 wonderful thing about trial lawyers, they know how to think on
13 their feet and they are infinitely adaptable.

14 Mr. Maysonett, you may proceed.

15 MR. MAYSONETT: Your Honor, would it be appropriate
16 then at this time, under my understanding of how we're
17 proceeding, to move declarations of Mr. Milligan into
18 evidence.

19 THE COURT: All right. Subject to the right of the
20 plaintiffs to make substantive objections to the declaration
21 and also to raise -- I should say to cross-examine Mr.
22 Milligan here in open court, I will admit and let's -- now the
23 exhibit.

24 MR. MAYSONETT: It's number one.

25 THE COURT: FD number 1. In evidence.

1 (Defendants' Exhibit FD 1 was received.)

2 MR. MAYSONETT: I have here the declaration of Ron
3 Milligan. This was docket number 396-6 dated July
4 9th -- filed July 9th, 2007. To be marked as Federal
5 Defendants' Exhibit Number 1.

6 And Your Honor, I also have labeled the declaration
7 of Ronald Milligan, document No. 433-2 to be marked as Federal
8 Defendants' Number 2.

9 THE COURT: All right. FD 2 in evidence subject to
10 the same right of the plaintiffs to make substantive
11 objections to the content and also to cross-examine Mr.
12 Milligan in open court.

13 (Defendant's Exhibit FD 2 was received.)

14 MR. MAYSONETT: With the Court's indulgence, Your
15 Honor, there may have been a copying error.

16 I think everything is in order, Your Honor.

17 THE COURT: All right. Thank you.

18 MR. MAYSONETT: Those have been moved into evidence,
19 Your Honor, subject to --

20 THE COURT: Yes. FD 1 and 2 are in evidence subject
21 to the right of the plaintiffs and/or any other party to make
22 substantive objections and to cross-examine Mr. Milligan in
23 open court.

24 MR. MAYSONETT: Thank you, Your Honor.

25 At this time we would like to call Ms. Cay Goude to

1 the stand.

2 THE COURT: All right. Please come forward.

3 CAY COLLETTE GOUDE,

4 called as a witness on behalf of the Federal Defendants,
5 having been first duly sworn, testified as follows:

6 THE CLERK: Please state your full name for the
7 record and spell your last name.

8 THE WITNESS: My full name is Cay Collette Goude, my
9 first name is spelled C-A-Y and my last name is spelled
10 G-O-U-D-E.

11 THE COURT: You may proceed, Mr. Maysonett.

12 MR. MAYSONETT: Thank you, Your Honor.

13 DIRECT EXAMINATION

14 BY MR. MAYSONETT:

15 Q. Ms. Goude, where are you currently employed?

16 A. I am employed with US Fish & Wildlife Service in the
17 Sacramento field office.

18 Q. And what's your position at the Fish & Wildlife Service?

19 A. I'm an assistant field supervisor of the endangered
20 species program covering the coast, bay, delta, the forest,
21 the foothill, geographic branches, the recovery branch as well
22 as in charge of habitat conservation plan.

23 Q. And are you a biologist?

24 A. Yes, I am.

25 Q. In your position, do you manage other biologists at the

1 service?

2 A. Yes, I do.

3 Q. How long have you been with the Fish & Wildlife Service
4 approximately?

5 A. Over 20 years.

6 Q. During your time with the service, have you worked on
7 issues related to the delta smelt?

8 A. Yes, I have. I've been around since the listing of the
9 delta smelt recovery planning review, the five year review,
10 numerous biological opinions, including OCAP on delta smelt as
11 well as many other species obviously.

12 Q. Did you work on the suite of actions that the service has
13 proposed to protect the delta smelt in this case?

14 A. Yes, I did.

15 Q. Are you involved in the re-initiated consultation between
16 the Fish & Wildlife Service and the Bureau of Reclamation's
17 operation of the Central Valley Project?

18 A. Yes, I am.

19 Q. What's educational background?

20 A. I have a bachelor of science from UC Davis in renewable
21 natural resources where I emphasized in fisheries. I have a
22 masters of science from Sacramento -- California State
23 University Sacramento in biology, where I did my masters on
24 Sacramento perch.

25 Q. And are you familiar with current scientific studies and

1 biology on the delta smelt?

2 A. Yes, I am.

3 Q. Are you familiar with scientific data and studies on the
4 current status of the delta smelt population?

5 A. Yes, I am.

6 Q. Do any of your staff sit on the Delta Smelt Working Group?

7 A. Yes, they do.

8 MR. MAYSONETT: Your Honor, on the basis of those
9 qualifications we would like to submit Ms. Goude as an expert
10 witness on the biology and current status of the delta smelt
11 and on the environmental factors, including the operation of
12 the projects in the delta smelt.

13 MR. WALL: With no objection, Your Honor.

14 THE COURT: All right. The Court finds that Ms.
15 Goude is qualified to give opinion testimony as an expert on
16 the subjects of biology and the current status of the delta
17 smelt and about the effect of operations of the current
18 projects on the delta smelt. You may proceed.

19 BY MR. MAYSONETT:

20 Q. Ms. Goude, is the delta smelt currently listed under the
21 Endangered Species Act?

22 A. Yes, it's currently listed as a threatened species.

23 Q. How would you characterize the current status of the
24 species?

25 A. The species has had numerous fluctuations over the years,

1 but the last few fall midwater trawls have been very low and
2 so it's still very threatened as we reconfirmed in our
3 five-year review.

4 Q. What sources of data have you relied on to reach that
5 opinion?

6 A. Numerous abundance indices as well as other studies. The
7 five-year review basically went over all kinds -- all the
8 studies that were currently in place.

9 Q. You mentioned abundance indices, and those are based on
10 results of surveys; is that correct?

11 A. That's correct.

12 Q. Are there any other sources of data that you rely on?

13 A. We rely on all data that's available and information, but
14 we also rely on information from salvage.

15 Q. Can you briefly explain the difference between abundance
16 indices on one hand and population estimate on the other?

17 A. Abundance indices are more of -- provide a trend. They
18 have been used in the Delta for a long time, whereas the
19 population estimate is actually the number of plants or
20 animals that are present.

21 Q. And in reaching your conclusions on the current status of
22 the delta smelt, have you relied on abundance indices or
23 population estimates?

24 A. We relied on the abundance indices.

25 Q. Why?

1 A. Because they have -- they show the trend over a long
2 period of time. And also that there has been much dispute
3 over accurately coming up with a population estimate. The
4 abundance indices, some of them have been very long term so
5 you get to see the trend.

6 Also from the listing of the species, it's not just
7 based on, you know, the population trend, it's based on the
8 five factor analysis that goes into the analysis under
9 Endangered Species Act.

10 Q. Could you just briefly explain what the five factors are.

11 A. I'll see if I can remember all of them. But basically,
12 they're threats, inadequate regulatory mechanisms and
13 basically, for delta smelt, it was dealing with threats and
14 inadequate regulatory mechanisms based on my memory.

15 Q. Now, in reaching your conclusions about the current status
16 of the delta smelt, have you relied on the most current
17 abundance indices?

18 A. Yes.

19 Q. When is the most current abundance indices data from?

20 A. Well, it's from '07, but there will be some new
21 information probably, I guess around mid January.

22 Q. And in your opinion, are the -- are those abundance
23 indices and the salvage recorded at the export facilities the
24 best scientific information currently available on the
25 abundance of the delta smelt?

1 A. Yes.

2 Q. When the service listed the delta smelt as threatened
3 species in 1993, did the agency rely on abundance indices or
4 population estimates?

5 A. The abundance indices.

6 Q. And to your knowledge, have there been discussions in the
7 scientific community about additional surveys or other data
8 that might be collected to get more information on the status
9 of the smelt?

10 A. There's always debate, yes, there has been.

11 Q. And have -- how would you characterize the results of
12 those discussions?

13 A. Ongoing.

14 Q. In your opinion, Ms. Goude, is there other scientific
15 information that you need to evaluate the current status of
16 the delta smelt, which isn't currently available?

17 A. If you ask most biologists, they'll always want, including
18 me, more information. But for the agency, you have to use the
19 best available information to make your determinations for
20 your analysis.

21 Q. In your time at the service, Ms. Goude, have you worked on
22 other species besides the delta smelt?

23 A. Yes.

24 Q. And based on your experience with those other species, how
25 does the amount of scientific information available on the

1 delta smelt compare to the amount of scientific information
2 you have on other threatened and endangered species?

3 A. The delta smelt has more of a plethora of information than
4 many other species. Many other species, we have to infer by
5 habitat distribution, for example, the San Joaquin kit fox.
6 You have to base it on what's the available upland habitat.
7 There's very little knowledge of the numbers and you have no
8 trend analysis.

9 Q. And in your experience, do we often have population
10 estimates for threatened and endangered species?

11 A. Well, when they're plants, it's a lot easier. When
12 they're in a limited distribution and very few of them. But
13 generally speaking, no.

14 Q. In your opinion, do we have enough scientific information
15 right now to make an accurate assessment of the current status
16 of the delta smelt?

17 A. Yes, we do.

18 Q. And how does the current status of the smelt compare to
19 its status when it was listed in 1993?

20 A. It -- there has been some very concerning declines in
21 recent years.

22 Q. And what biological factors have, in your opinion,
23 contributed to the decline of the delta smelt?

24 A. I think there's numerous declines. And I wouldn't proffer
25 to say which one's the most important at any one time. It

1 depends. But obviously there's been contaminants, introduced
2 exotics, both plants and animals. Obvi -- the state and
3 federal water projects. There are agricultural diversions.
4 There's basically some power plants. There's -- there's a lot
5 of alterations and issues that have gone on in the Sacramento
6 and San Joaquin Delta system.

7 Q. Ms. Goude, when I say -- when I use the term "jeopardy" in
8 the context of a threatened species like the delta smelt, what
9 does that mean to you as a biologist?

10 A. Well, what it means to me as a biologist that works for
11 the Fish & Wildlife Service is that a jeopardy opinion is
12 proffered -- or jeopardy or no jeopardy opinion is provided in
13 the Biological Opinion. It's a complete analysis of what is,
14 in fact, the effects of the action based on the baseline and
15 ultimately a jeopardy analysis with an incidental take
16 statement.

17 Q. And how would you describe the difference between the term
18 "extinction" and the term "jeopardy"?

19 A. Extinction is that it's not there anymore. And for
20 jeopardy, we're trying -- basically on a Biological Opinion,
21 you would provide reasonable and prudent alternatives to
22 remove the jeopardy if the project proponent didn't, in fact,
23 include some actions that minimized those effects or if they
24 did, they could be reasonable and prudent measures if it's a
25 non-jeopardy.

1 Q. And has the service reached a conclusion whether the
2 current operations of the project is likely to jeopardize the
3 continued existence of the delta smelt?

4 A. In '05 we did, but that's not valid anymore. So now we
5 have to come up with a new opinion.

6 Q. And Ms. Goude, in your opinion, is the operation of the
7 projects likely to jeopardize the continued existence of the
8 delta smelt over the next year?

9 A. I won't be able to answer that because there should be a
10 jeopardy analysis. I can answer that I think that our
11 information would provide protective measures for the coming
12 water year.

13 Q. Ms. Goude, let's turn briefly to the issue of population
14 estimates.

15 THE COURT: Can I ask a question?

16 MR. MAYSONETT: Yes.

17 THE COURT: In relation to current status of the
18 species, and I'm going to use your words that there was a very
19 serious decline that has been recently observed, you've
20 indicated that you can't give us an opinion about, if you
21 will, the degree of jeopardy that currently exists.

22 Are you able to give us your professional opinion
23 about whether the species, delta smelt, in its current
24 condition, if all operations and conditions in the Delta
25 proceed as they have over history in the time you've been

1 observed this species in its critical habitat, if nothing is
2 done, in your professional opinion, what is the potential
3 consequence?

4 THE WITNESS: I think that the delta smelt, in my
5 professional opinion, is in a very low level. And I believe
6 that if our matrix would be implemented, it would be -- it
7 would not -- it would be adequately protected to get to the
8 full analysis that needs to come from the biological
9 assessment and the Biological Opinion that we're working on
10 currently.

11 THE COURT: And so the measures that you and your
12 colleagues have proposed in your opinion would prevent the
13 extinction of the species in the time it's going to take to
14 complete the reinitiated Biological Opinion?

15 THE WITNESS: All other factors staying the same,
16 yes. But I can't speak for, you know, everything, because
17 really what is before us is simply the state and federal water
18 projects, not other events that could occur in the system.

19 THE COURT: All right. And I'm not asking you to
20 introduce unknown variables.

21 THE WITNESS: Okay.

22 THE COURT: I'm asking you only to assume, for the
23 purposes of my question, the known conditions as they exist at
24 this time. If you can answer the question with those
25 assumptions.

1 THE WITNESS: Okay. Yes, I think it would prevent
2 extinction.

3 THE COURT: Thank you. You may continue.

4 MR. MAYSONETT: Thank you, Your Honor.

5 Q. Ms. Goude, as I mentioned, I'd like to turn briefly to the
6 issue of population estimates.

7 Does the service, does the US Fish & Wildlife Service
8 have a current official population estimate for the delta
9 smelt?

10 A. No, we do not.

11 Q. Why not?

12 A. The survey information is -- it has to convert some of the
13 indices into -- or even some of the survey information into a
14 population that would require a great deal of assumptions.
15 And we view that the indices are strong enough indication --
16 and although a population estimate, people would feel more
17 comfortable when they have a population estimate and they
18 actually know, it's really not what is needed for the service.
19 Basically, it would be helpful and maybe helpful to understand
20 some information.

21 But on the analysis that we would be doing for a
22 Biological Opinion, we would be evaluating the baseline
23 conditions as we know it. And so I would say that there's
24 probably people that are working through the POD that will try
25 to come up with some peer review papers on populations, but it

1 hasn't come to pass at this point.

2 Q. You mentioned the POD, can you explain what the POD is?

3 A. I'm sorry. It's the Pelagic Organism Decline, basically
4 when the -- when there started to be a decline, the resource
5 agencies, including the bureau and DWR, basically through a
6 study group had been doing and focusing studies to find out
7 maybe -- or hopefully find out what caused some of the
8 decline.

9 THE COURT: I have another question. And I want you
10 to answer this question, please, only in terms of your
11 expertise and your knowledge. I don't want you to give any
12 legal opinion here. Forget about what the law says in terms
13 of deciding an issue.

14 But in your professional opinion, based on the
15 totality of the circumstances surrounding delta smelt as of
16 August 23rd, 2007, understanding as a biologist and as a
17 leader in the endangered species unit, is it your professional
18 opinion that this species is presently in danger?

19 THE WITNESS: Gee, my agency would be kind of
20 irritated with me on that.

21 THE COURT: Well, I understand that perfectly well,
22 but that's the question from the Court.

23 THE WITNESS: I --

24 THE COURT: The agency doesn't have anything to say
25 about it at this point.

1 THE WITNESS: Eventually they might. I guess --

2 THE COURT: Not as pertains to you. They can take it
3 up with me.

4 THE WITNESS: Okay. Probably, yes.

5 THE COURT: Thank you.

6 BY MR. MAYSONETT:

7 Q. Ms. Goude, has the US Fish & Wildlife Service reached a
8 conclusion on whether the delta smelt is currently in danger?

9 A. No.

10 Q. Are there petitions pending with the Fish & Wildlife
11 Service to change the listing status of the smelt from the
12 threatened status to endangered status?

13 A. Yes.

14 Q. And has the service completed its evaluation of those
15 petitions?

16 A. We haven't started.

17 Q. Okay. Turning back to some more questions on population
18 estimates. You mentioned that there would need to be some
19 assumptions to convert survey data we've heard so much about
20 into population estimates. Could you identify what some of
21 those assumptions would be?

22 A. I'm still -- I'm sorry. I'm still thinking about the --

23 Q. You're working on your resume in your mind.

24 THE COURT: If you want to know the law on this, you
25 can have a little comfort, you are not what the law calls an

1 authorized representative of the government in terms of the
2 hierarchy of government and so although you give us your
3 professional opinion as a biologist, it's probably not legally
4 binding in terms of being a judicial admission for the agency
5 itself. So you don't have to be as concerned about it as you
6 might be.

7 THE WITNESS: Okay.

8 THE COURT: You may proceed.

9 MR. MAYSONETT: Thank you, Your Honor.

10 THE WITNESS: I appreciate that. Maybe I can
11 concentrate now.

12 THE COURT: You can go to sleep tonight.

13 THE WITNESS: I do appreciate that. Can you repeat
14 it? I'm sorry.

15 MR. MAYSONETT: Can we have the question read back.

16 (Record read as requested.)

17 THE WITNESS: Well, first of all, you would need to
18 look at multiple years during -- to actually just not to know
19 the existing population, it would be kind of nice to know how
20 the population has changed over time. So that's one thing.

21 You'd also want to know that -- one of the problems
22 with the assumptions would be you have to convert the volume
23 of water from the sampling to some sort of number. You would
24 have to make some assumptions on, you know, even distribution.
25 There's a lot of different assumptions that you would have to

1 make which doesn't make the analysis as robust as some other
2 population numbers.

3 BY MR. MAYSONETT:

4 Q. And when you say "some other population numbers," do you
5 mean other population numbers for other species?

6 A. Correct.

7 Q. You're working on the new Biological Opinion for the
8 effects of the project operations on the delta smelt; is that
9 correct?

10 A. Yes.

11 Q. Does the service plan to include a population estimate in
12 that new Biological Opinion?

13 A. No.

14 Q. Why not?

15 A. Well, first of all, we have to have it done soon. And
16 second of all, there is none. And so basically -- and the
17 third is that it's really not -- you use the best available
18 information, best scientific information available to do your
19 analysis. And so we're using the indices that we have
20 available.

21 THE COURT: And where is the best scientific
22 information that is needed to do a population estimate?

23 THE WITNESS: You probably would have to use the
24 indices and then figure out some conversions. There are some
25 people that are employed out of the Stockton field office that

1 have started that work. And I looked at it and the math was
2 so far beyond me, you know, but basically they're starting
3 that analysis. And it's probably maybe a year or so away.
4 And they have some concerns about it.

5 THE COURT: Do they have -- if you know this from
6 your communications and your personal knowledge of what you've
7 seen, observed and worked on, do they have, if you will, a
8 body of data and information that is sufficient for them to do
9 the population estimate without doing new studies, surveys or
10 other quantitative kinds of analyses?

11 THE WITNESS: I think they're going to be using -- it
12 appeared to me it was pretty preliminary, is the indices that
13 are available. For the agency, for the service as it relates
14 to what we're doing in the Biological Opinion, we would be
15 using all the information in the indices. But we also have to
16 deal with the action before us, whatever the project is.

17 THE COURT: And so my question is a little bit
18 different than that. And that is: In your professional
19 opinion, is it necessary that new and different studies or
20 analyses be performed or is, if you will, the universe of data
21 that exists now and information there, it's just a matter of
22 applying the right math and science to it to get to a
23 population estimate?

24 THE WITNESS: The way I understood it, they were
25 using the existing surveys. But whether they needed some

1 additional information, I'm not aware of. I don't know that.
2 I didn't -- I did not talk to the individual that was working
3 on this, I just looked at some information.

4 THE COURT: Thank you.

5 THE WITNESS: You're welcome.

6 BY MR. MAYSONETT:

7 Q. So you've testified, Ms. Goude, that the service doesn't
8 plan to include a population estimate in its new Biological
9 Opinion. How does the service then address issues like
10 jeopardy and take in a Biological Opinion if it doesn't have a
11 population estimate for the species?

12 A. We use the best scientific information available. We look
13 at the -- what we have, the baseline information, the action,
14 and we talk about the effects, both the direct and indirect
15 effects. We have to make a logical link from the project
16 description to the effects analysis to the take statement.

17 Q. And in your opinion, do you need a population estimate to
18 reach conclusions about jeopardy or take?

19 A. No.

20 Q. Let's turn briefly to the effects of project operations on
21 the delta smelt. Does the operation of the Central Valley
22 Project and the State Water Project affect the delta smelt
23 directly?

24 A. Yes, it does.

25 Q. And how?

1 A. There is -- and a lot of people split hairs whether you
2 call it direct or indirect. But the bottom line is that there
3 is some -- the direct affects of entrainment that go on and
4 also the unmeasurable effects that happen when fish are in
5 the -- for example, in Clifton Court Forebay and there's
6 additional predation.

7 Q. And does the operation of the projects affect the delta
8 smelt indirectly?

9 A. Yes. There's indirect effects because you modify the
10 hydrology, you can change the flow. There may be some food
11 issues. There's -- it's very hard sometimes to totally
12 quantify the indirect effects, but you identify them.

13 Q. In your opinion, how well are these effects of the
14 projects on the delta smelt understood?

15 A. They are -- there's always more information that you can
16 understand, but there's not any direct correlations that are
17 really clear. But the Delta has been altered significantly
18 and so it's hard to tease apart exactly what's happening
19 within the system. But when you're -- obviously there is a
20 direct and indirect effect because we're in a Biological
21 Opinion currently.

22 Q. And does the -- do the operation of the projects result in
23 direct take of delta smelt?

24 A. Yes.

25 Q. And how does that direct take happen?

1 A. Well, they're basically entrained at the facilities and
2 salvaged. Some of them are salvaged.

3 Q. And when you say "some of them are salvaged," in your
4 opinion and experience, do many of the delta smelt entrained
5 in the pumps survive?

6 A. No.

7 Q. And do the operators monitor the level of take that occurs
8 at the pumps?

9 A. Yes, they do.

10 Q. How is that take measured?

11 A. The take is -- they have repeated samplings through a
12 period of time and they take a subsample and then make a
13 conversion factor and determine a number.

14 Q. Do you know how many delta smelt were taken directly at
15 the pumps over the summer between June 1st and, say, today?

16 A. Roughly around 2200.

17 Q. And can the pumps at the projects be operated to eliminate
18 this direct take entirely?

19 A. Not if they're operated.

20 Q. So is that to say that the only way to avoid the risk of
21 direct take completely is to shut the pumps down?

22 A. It's the only way I know.

23 Q. And how does -- does the operation of the projects affect
24 flows on the Old and Middle Rivers?

25 A. Yes, it does. They do. Excuse me.

1 Q. Can you -- beg your pardon. Can you describe where the
2 Old and Middle Rivers are in relationship to the pumping
3 facilities?

4 A. Basically, as everybody keeps showing, it's the south
5 Delta and comes through here towards Tracy and Clifton Court
6 Forebay.

7 Q. So how do the operation of the pumps affect flows on the
8 Old and Middle Rivers?

9 A. Well, in certain periods of time, they -- when exports
10 have gone up, they can create negative flows. And it's also
11 determinate somewhat on what's coming on in the San Joaquin
12 and the tidal regime.

13 Q. And do negative flows on the Old and Middle Rivers affect
14 the delta smelt?

15 A. It appears so.

16 Q. And how do they affect the delta smelt, those negative
17 flows?

18 A. It's speculated and assumed that they basically increase
19 the level of entrainment of delta smelt coming basically -- if
20 they're in the central or south Delta, moving them closer to
21 the facilities and reducing their ability to survive.

22 Q. Do the effects of negative flows on the delta smelt vary
23 by where the smelt are located in the Delta?

24 A. The flows themselves don't vary by where the smelt are.

25 Q. Is that what I asked?

1 A. Yeah.

2 Q. My question was intended to be do the effects of the
3 negative flows on the smelt vary depending on where the smelt
4 are in the Delta?

5 A. Yes.

6 Q. And how does it vary?

7 A. Well, if the -- if you have positive flows and delta smelt
8 are way -- in Suisun Bay, you know, so there's a wet year,
9 delta smelt are in Suisun Bay, you have less of a risk of
10 entrainment or very little entrainment from the facilities.

11 Whereas if you have high negative flows in Old and
12 Middle River and the delta smelt population or the indices
13 show that they're -- or sampling shows that they're in the
14 central or south Delta, then you have a greater concern of
15 entrainment.

16 Q. And are there other factors besides the operational
17 facilities that affect the flows on the Old and Middle Rivers?

18 A. Tide.

19 Q. Are there any other factors?

20 A. Other than the facilities, not really. Not that I can
21 think of.

22 THE COURT: When you say "tide," in what way do tides
23 affect the species?

24 THE WITNESS: Well, I'm -- basically the -- there are
25 times when it doesn't matter, there's so little flow on the

1 Old and Middle River and the tides are such that my
2 understanding that the facilities have difficulty actually
3 reaching the required flows. But that is more of a hydrologic
4 discussion that I had presented to me by the engineers from
5 DWR and the bureau.

6 THE COURT: Thank you.

7 BY MR. MAYSONETT:

8 Q. Ms. Goude, let's talk briefly about the issue of the take.
9 Did the service's Biological Opinion on the effect of the
10 project operations on the delta smelt address the take of
11 delta smelt --

12 A. Yes.

13 Q. The direct take that occurs at the pumps.

14 A. Yes.

15 Q. And did it include an incidental take statement to address
16 that take?

17 A. Yes, it did.

18 Q. And did that incidental take statement set limits on the
19 amount of take that was allowed to occur?

20 A. Excuse me. Yes, it did.

21 Q. And how were those take limits set?

22 A. We looked at a period of salvage and we grouped water
23 years together, so basically the wet water years and the dry,
24 and then we took the median. So it actually -- the take
25 levels were half of -- roughly half of what historic salvage

1 had been.

2 And -- but the whole idea of the take statement is
3 not to operate to the take, it's to operate below that take.
4 And so the intent -- the intent of the adaptive management
5 program was to not get to a take statement, not to come up to
6 take, in essence.

7 Q. And did the Biological Opinion also identify measures to
8 minimize levels of take?

9 A. Yes, there was some minimization measures. But many of
10 the aspects that were in the original Biological Opinion were
11 incorporated into the project description.

12 Q. And how did the take limits set in this most recent
13 Biological Opinion compare to the previous -- the take levels
14 set in previous 1995 Biological Opinion?

15 A. These take levels were lower.

16 THE COURT: What is the current take limit, first of
17 all, as to what year it was promulgated? The one that's in
18 effect today.

19 THE WITNESS: You mean in the '05 opinion?

20 THE COURT: Yeah. Is that the February '05
21 Biological Opinion? That has been found to be unlawful. I'm
22 sorry. That's not found to be unlawful at all. It's the
23 February of 2005 Biological Opinion and those take that have
24 been found to be unlawful.

25 So it's the '95 Biological Opinion that was the last

1 take or was it also the take limits in '04 as part of the, as
2 I understand it, the Biological Opinion that was reconsulted
3 in '05?

4 THE WITNESS: The first -- the way I describe the
5 median, the calculation, that was what was in the '05
6 Biological Opinion. In the 1995 opinion, which I don't have
7 in front of me, and I don't remember exactly, but they were
8 higher take levels.

9 And the reason I do remember that is then in 2005, I
10 had to brief upper management, though I'm management, upper
11 about that the take limits were reduced from the 1995 opinion.
12 So if that clarifies, sir.

13 THE COURT: It does. And if you know, what take
14 limits are presently being applied for delta smelt?

15 THE WITNESS: I'm somewhat confused on that matter.

16 THE COURT: Yes. Assuming that there were not a
17 legal proceeding and orders in place, what take limits?

18 THE WITNESS: The '05.

19 THE COURT: All right. Thank you. You may continue.

20 MR. MAYSONETT: Thank you, Your Honor.

21 Q. Ms. Goude, at this time I'd like to turn to the service's
22 proposal for interim relief in this case. Has the service
23 identified actions that it believes would adequately protect
24 the delta smelt over the next year?

25 A. Yes.

1 MR. MAYSONETT: Your Honor, at this time I'd like to
2 introduce a declaration, one of Ms. Goude's declarations. I
3 have it marked. It was already marked as Plaintiffs' 12, but
4 it was not moved into evidence by the plaintiffs.

5 THE COURT: All right. Then let it be marked as
6 Federal Defendants 3. Any objection to its receipt in
7 evidence?

8 MR. MAYSONETT: Your Honor, this is the declaration
9 of Cay Collette Goude. It's docket numbers 396-5. It was
10 filed July 9th, 2007.

11 THE COURT: Thank you. That will be Federal
12 Defendants 3 in evidence.

13 (Defendant's Exhibit FD 3 was received.)

14 MR. MAYSONETT: Your Honor, may I approach the
15 witness?

16 THE COURT: You may.

17 BY MR. MAYSONETT:

18 Q. Ms. Goude, did you prepare this declaration?

19 A. Yes. With others.

20 Q. And is this a true and accurate copy of your declaration?

21 A. Yes.

22 Q. Would you turn to -- and regrettably the pages of the
23 exhibits are unmarked. But would you turn to Exhibit 2,
24 please. It's --

25 A. The matrix.

1 Q. It's the matrix. And does this matrix describe the
2 service's proposal for interim relief here?

3 A. Yes, it does.

4 MR. MAYSONETT: Your Honor, could we also provide the
5 witness with a copy of DWR Exhibit D. It's already been moved
6 into evidence. This is Ms. Goude's second declaration. It
7 was docket number 433-4. This is a declaration that was filed
8 on August 3.

9 Q. And Ms. Goude, do you have DWR Exhibit D before you? This
10 is your second declaration.

11 A. Yes.

12 Q. And can you describe what's set out in this declaration?

13 A. The second declaration?

14 Q. Yes, please.

15 A. It basically confirms the same information that was really
16 in my first declaration as it relates to the matrix, but goes
17 over the biological issues a little bit more completely.

18 Q. Thank you. Turning back to your declaration, the matrix,
19 which is now Federal Defendants' Exhibit 3. Can you describe
20 the matrix of actions before us briefly?

21 A. Sure. The matrix has various headings, basically there's
22 five actions. It has the timing, the lifestage, the action,
23 the triggers, the end of the action and then the benefits to
24 delta smelt.

25 Action one was -- is a winter action. It's for the

1 adult. The actual action is within three days of the trigger,
2 achieve an average net upstream Old and Middle River flow not
3 to exceed 2,000 cfs for a ten-day period. Which is a minus
4 2000. The trigger is that it would begin on or after December
5 25th or when the turbidity is 12 NTUs.

6 Q. Ms. Goude, I think we can take the actions one at a time
7 in a moment.

8 A. Oh.

9 Q. If you want to continue.

10 A. You want me to finish this one?

11 Q. Please do.

12 A. The end of the action would be ten days or if the three
13 days at any point is greater than 80,000 cfs, which would be a
14 high water event.

15 Q. Thank you. Before we start to walk through the proposed
16 actions, could you tell us were you involved in designing
17 these proposed actions?

18 A. Yes, I was.

19 Q. And were others also involved in the process of designing
20 these proposed actions?

21 A. Yes. We had a group of biologists from Fish & Game, DWR,
22 the Bureau, did I say Fish & Wildlife Service and also
23 National Marine Fisheries Service to discuss the information
24 and come up with some ideas for remedy. And then the Fish &
25 Wildlife Service pulled all our experts together and

1 biologists and came up with a refinement.

2 Q. And are you familiar with the scientific basis for the
3 service's proposal?

4 A. Yes.

5 Q. In your opinion, Ms. Goude, is it necessary to implement
6 the actions identified on this matrix to protect the delta
7 smelt until the new Biological Opinion is done?

8 A. Yes.

9 Q. Okay. Let's take the time to walk through each of these
10 proposals, Ms. Goude. Could you explain briefly what action
11 one proposes?

12 A. Well, I kind of already did. But it's a winter flow to
13 try and move adult pre-spawning adults out of harm's way.
14 There is a summary.

15 Q. And it would impose limits on negative flows at certain
16 time of the year; is that correct?

17 A. That's correct.

18 Q. And in your opinion, what benefit would action number one
19 provide to the delta smelt?

20 A. It would improve -- reduce entrainment or the level of
21 entrainment and hopefully spawning would occur north of the
22 confluence or closer to the Suisun area. Not -- not the
23 Suisun, but north of the area. Sorry.

24 Q. And what's the basis for your opinion?

25 A. Basically there's been a number of studies, there's Delta

1 Smelt Working Group that had a lot of discussion and
2 hypothesis as well as a discussion from our own biologists on
3 developing this.

4 Q. And Ms. Goude, is it your opinion that limiting flows at
5 this time of year to negative 2,000 cfs would be sufficient to
6 protect the delta smelt?

7 A. Yes.

8 Q. How specifically did you arrive at that negative 2000 cfs
9 level?

10 A. Well, there was discussion about a range between zero
11 and 4,000 at -- minus 4 -- and it was determined that, looking
12 at the particle tracking, that the minus 4,000 wouldn't be
13 considered protective enough or sufficient enough to have the
14 action successful. And there was a discussion
15 around -- between zero and minus 2000.

16 And based on the earlier discussions with the group
17 of biologists, it appeared that the Particle Tracking Model
18 showed that it was pretty equivalent that there would be no
19 difference between zero and minus 2000.

20 Q. Does the service recommend, Ms. Goude, that this -- that
21 these limits be implemented in every water year?

22 A. No. It would -- you would not need it if you have a wet
23 year.

24 Q. Why wouldn't you need these restrictions on negative flows
25 if there were a wet year?

1 A. The wet year itself would move fish out of the area of
2 influence of the pumps. The actual flows, the natural
3 conditions.

4 Q. And how is that recognized in the service's specific
5 proposal?

6 A. It's -- it's at the end of the -- well, it's actually in
7 two places. But it talks about the three-day average of the
8 Sacramento River flow at three-quarters greater than 80,000
9 cfs during this period.

10 Q. So if flows on the Sacramento River were greater than that
11 level, the service does not recommend implementing these
12 restrictions?

13 A. They wouldn't need to.

14 Q. Thank you. And is it your -- strike that.

15 Ms. Goude, in your opinion, would action number one
16 also provide benefits for the critical habitat of the delta
17 smelt?

18 A. Critical habitat, as defined by our rule, which was in
19 1994, was determined based on primary constituent elements
20 that include basically all aspects of the water, the salinity,
21 the turbidity and its -- for the legal Delta,
22 including -- there's another spot that I'm having a blank, but
23 basically so yes, it would improve and provide benefits for
24 critical habitat.

25 Q. Let's move on to the second action that the service has

1 proposed. What would the second action require, Ms. Goude?

2 Could you summarize what the second action would require.

3 A. All right. It would be a daily net upstream OMR, Old and
4 Middle River flow, not to exceed 4500 cfs. And the flow would
5 be measured on a 14-day running average.

6 However, at any one time during the seven days cannot
7 exceed a minus 5,000.

8 And this action would immediately follow number one
9 or beginning on January 15th, unless, again there's a high
10 water year.

11 The end of the action would be at the onset of
12 spawning or when delta smelt temperatures reach 12 degrees
13 centigrade.

14 Q. In your opinion, what benefit would such a limitation
15 provide to the delta smelt?

16 A. It would minimize the number of pre-spawning adult smelt
17 entrained at the facilities and it would also benefit --
18 hopefully have the pre-spawning adults be spawning away from
19 the pumps or south Delta.

20 Q. And what's the basis for your opinion?

21 A. Again, there was a lot of discussions through the Delta
22 Smelt Working Group that was -- as well as the biologists that
23 we assembled and talked about these various issues, as well as
24 Pete Smith, Dr. Smith's information that showed a relationship
25 with negative flow and entrainment on the Old and Middle

1 River. And it appears -- though everybody can discuss about
2 where that point is on the graph, it appears that around minus
3 5,000 cfs take increases. So the Fish & Wildlife Service
4 determined to try and operate in a more conservative fashion
5 to stay, you know, around that area, or under it.

6 Q. And is it your opinion that limiting negative flows at
7 this time of year to negative 4,500 cubic feet per second is
8 sufficient to protect the delta smelt?

9 A. Yes.

10 Q. Let's move on to the third action, Ms. Goude. Could you
11 briefly summarize what the third action proposed by the
12 service would require?

13 A. This is to benefit larval and juvenile fish. It's a zero
14 to 4,000 cfs. There is quite a lengthy attachment to this
15 exhibit that describes a thought process and a logic that
16 would be used to look at when you would -- how you would
17 determine it.

18 We also provided, in our hypothetical, examples that
19 were attached to my declaration. The action would be
20 initiated at the onset of spawning or when temperatures
21 reached 12 degrees centigrade.

22 And this action could be modified based on
23 distribution. But again, it's from zero to minus 4,000. And
24 the only time that this action wouldn't be needed is if you
25 had, again, a high flow event and you had sufficient -- and

1 that was trying to be triggered and analyzed by like you had
2 flows or flood situation in the middle of the bypass, which
3 would be indicative of a wet year.

4 Q. So this action would also require restrictions on negative
5 flows on the Old and Middle Rivers?

6 A. Correct.

7 Q. And does it identify specific target value for those
8 restrictions?

9 A. It's between zero and minus 4,000 and based on
10 distribution of the delta smelt and other factors.

11 Q. I think you mentioned there would be a process to identify
12 sufficient target flow. Could you describe that process?

13 A. Basically you would look at -- well, it's in the -- it's
14 described in my declaration.

15 Q. Where in your declaration is it described?

16 A. Well, not on the numbered pages, but on attachment A,
17 Process for Determining Target Old and Middle River Flow for
18 Action Number Three is the title.

19 Q. So can you describe what this -- will you summarize what
20 this process, how this process would identify a specific
21 target flow between zero and negative 4,000?

22 A. This would still be using the Delta Smelt Working Group
23 which has been previously described as a group that has served
24 at the request of the Fish & Wildlife Service. It has agency
25 biologists on it, but it also has a couple either what we call

1 the operators on it from the projects, people that know about
2 what's going on in the system. So there's biologists and a
3 couple of the operators and it's a group to discuss issues and
4 provide recommendations back to Fish & Wildlife Service.

5 So this process would be looking at real time
6 information to determine -- make recommendations, where it
7 would be between the zero and minus 4,000, and those
8 recommendations would be given to the Fish & Wildlife Service
9 and eventually to WOMET, to the water -- Water Operations
10 Management Team. But the service would make the ultimate
11 call.

12 Q. And you said that the decision on what target to pick
13 between zero and minus 4,000 would be based on real time data.
14 What kind of real time data would it be based on?

15 A. It would be, for example, the Spring Kodiak Trawl Survey,
16 20 millimeter survey, salvage information, particle tracking,
17 temperatures, where they maybe collected patterns of delta
18 smelt. Any other new biological information or data that
19 comes up that may be pertinent during the period of time.

20 Q. So can you describe under what sorts of conditions would a
21 target near the low end of the range towards zero cfs be
22 appropriate?

23 A. Well, it could be when delta smelt are maybe closer to the
24 confluence of the Sacramento and San Joaquin River systems.
25 You have an above normal water year. It appears that very few

1 in the south Delta. So the abundance indices show that the
2 distribution is closer to the Suisun, you would -- whereas you
3 would do a more restrictive action when they are in the south
4 Delta, when there's a low water year, when the indications
5 show that a large segment of the population is in the south or
6 central Delta, for example.

7 Q. And the more restrictive flow limit would be zero cfs; is
8 that correct?

9 A. I'm sorry, yes.

10 Q. And the less restrictive would be negative --

11 A. Negative 4,000.

12 Q. And in your opinion, what benefit would the restrictions
13 proposed in action number three provide to the delta smelt?

14 A. I think we believe that it would minimize larval
15 entrainment and improve the chances of more fish for next
16 year.

17 Q. Is it your opinion that these negative flow limits would
18 be sufficient to protect the smelt during this interim period?

19 A. Yes, it is.

20 Q. And why?

21 A. It's based on the information, again, as I say, discussed
22 earlier about it appeared take does significantly increase
23 around 5,000. So then again, they are still providing
24 sufficient protection.

25 Q. Do you believe -- in your opinion, would it be more

1 appropriate to set a specific flow target rather than
2 identifying a range as the service has done?

3 A. That was actually discussed at one point and it was
4 decided that it was more important to have the lower range at
5 certain times, especially when delta smelt were close to the
6 facilities.

7 Q. Could you summarize action number four for us.

8 A. Action number four would be -- this action has -- is
9 basically assuming that all your other actions, that there was
10 still entrainment that occurred. It would be in the spring
11 and the summer and for juveniles. It would follow action
12 three and it would be on real time information starting June
13 1st.

14 It would continue until the entrainment risk is
15 abated or June 30th. And the -- there's a very great flow
16 chart that describes the process.

17 Q. Is it fair to call action number four an adaptive
18 management process?

19 A. Yes, it's very fair to call it that.

20 Q. And what kind of operational changes might be required
21 under that adaptive management process?

22 A. Curtailed pumping.

23 Q. Is the adaptive management process that the service has
24 proposed here in action number four the same as the DSRAM
25 process that's identified in Biological Opinion?

1 A. It's still an adaptive management process. It still has
2 some of the same components. But the difference is that the
3 service would be taking a more -- would be presenting the
4 position of what action should be taken. And it's also a
5 little -- it's much more defined of the process in the flow
6 chart of how you could be looped back in based on the
7 entrainment. So it is a little -- it puts more sideboards on
8 it.

9 Q. And under the process, the definition process described in
10 action number four, who would get the final say on what the
11 appropriate action would be?

12 A. In my opinion, it would be Fish & Wildlife Service.

13 Q. What benefits do you believe that this action number four
14 provides to the delta smelt?

15 A. It could hopefully reduce entrainment, provide more of a
16 population that might be near the south Delta to make it into
17 the next year class.

18 Q. Why did the service include adaptive management here in
19 action number four instead of simply defining some set of
20 specific operations to protect the delta smelt?

21 A. It's very difficult to know what to do when you get to
22 this kind of stage because you really do need to look at where
23 the distribution of the fish are. You need to pay attention
24 to -- because you're entering into the summer months, I'd like
25 to think that you would be done in 2008 and you really don't

1 have 2009 to come in to the situation.

2 But you actually have to be thinking of the
3 hydrologic year that's coming up. And being -- paying
4 attention to how the hydrology is in the system, what's
5 happening on storage reservoirs, what's going on with salmon.
6 So at that point, you have to really have major discussions on
7 what is going on in the system.

8 Q. And Ms. Goude, while it's not listed on the Action Matrix,
9 the service has also proposed that the Central Valley Project
10 and the State Water Project return to operations more like
11 pre-2000 operations; is that correct?

12 A. That is correct.

13 Q. Ms. Goude, I'd like to turn now to the plaintiffs'
14 proposal.

15 A. Okay. Which one is --

16 Q. It is in the declaration of Christina Swanson, which has
17 been marked Plaintiffs' Exhibit 4. I have a copy here if
18 you --

19 A. It's not the -- so it's not the 7-23 one or the --

20 Q. It's -- it should be marked at the top docket 466-2. It's
21 very thick.

22 THE COURT: Did you cover action number five?

23 MR. MAYSONETT: I beg your pardon.

24 THE COURT: Do you want to do that?

25 MR. MAYSONETT: Very briefly.

1 Q. I'm sorry, Ms. Goude, before we go on to that. Could you
2 briefly describe what action number five in the service's
3 proposal is?

4 A. Oh, it's not the -- not to install the Spring Head of Old
5 River and the flap gates tied open for the south Delta
6 agricultural barriers.

7 Q. And what benefit, in your opinion, would that provide to
8 the delta smelt?

9 A. It is the Head of Old River Barrier can cause -- it
10 contributes to more of the San Joaquin flow that would benefit
11 the Old and Middle River flows. It creates a hydrologic shift
12 of the water when you put that barrier in. Which affects
13 delta smelt.

14 Q. And how does that hydrologic shift affect the delta smelt?

15 A. It can, in certain situations, contribute to negative
16 flows.

17 Q. Thank you. Now if we could turn to the plaintiffs'
18 proposal, which as I said is in Plaintiffs' Exhibit 4.

19 A. So it's 466-2?

20 Q. Yes. That's correct. And it's, I don't know, it's about
21 halfway, it's marked as an appendix. It's where the chart
22 begins.

23 Do you have the plaintiffs' proposal before you now?

24 A. Yes, I do.

25 Q. Have you reviewed the interim remedies that the plaintiffs

1 have proposed in this matter, Ms. Goude?

2 A. Yes, I have.

3 Q. And have you reviewed the declarations that the plaintiffs
4 submitted to support that proposal?

5 A. Yes, I have.

6 Q. And were you present for the testimony of Doctors Moyle
7 and Swanson at these proceedings?

8 A. Yes, I was.

9 Q. Okay. Let's turn then to some of the specific actions
10 that the plaintiffs have proposed. Action one, could you
11 briefly describe what action one is?

12 A. Action one is to continue year round surveying that's
13 currently ongoing.

14 Q. And who conducts the surveys that the plaintiffs have
15 identified?

16 A. It says here Fish & Game, but really it's an Interagency
17 Ecological Program that does most of the -- does all the
18 surveys together.

19 THE COURT: Would this result in any change in the
20 current regime of surveying?

21 THE WITNESS: No. And there is no plan on, my
22 understanding, to change any of the surveys.

23 THE COURT: Thank you.

24 BY MR. MAYSONETT:

25 Q. You mentioned the IEP.

1 A. Yes.

2 Q. What does IEP stand for?

3 A. Interagency Ecological Program.

4 Q. And what is that, if you could just briefly explain?

5 A. It is -- it's a group of biologists that have been
6 put -- and managers and it's a multi-agency, includes -- I
7 don't want to forget anyone, they'd probably get upset.

8 Bureau of Reclamation. National Marine Fisheries. Fish &
9 Game. DWR. USGS. There's probably others.

10 Q. And does the service participate in these surveys?

11 A. Yes.

12 Q. How does the service participate?

13 A. Well, some of the surveys we are doing is out of the
14 Stockton field office and we do some of the salmon work.

15 Q. And what's -- in your opinion, could you -- what's the
16 value of these surveys in assessing the status of the delta
17 smelt?

18 A. They're critical.

19 Q. And in your opinion, has the value of these surveys in
20 assessing the status of the delta smelt been affected by the
21 recent decline of the smelt?

22 A. Some of the surveys were -- there is a concern that some
23 of the surveys are not as robust because of the low numbers of
24 smelt.

25 Q. Let's move on to plaintiffs' action number 3. Could you

1 just briefly explain what plaintiffs have proposed in action
2 number three.

3 THE COURT: If you don't mind, why don't you -- if
4 you're skipping two purposefully and if there is an opinion
5 that this additional sampling shouldn't be done, then let's
6 know why.

7 BY MR. MAYSONETT:

8 Q. Ms. Goude, do you have an opinion on the additional
9 sampling proposed in plaintiffs' action number 2 and whether
10 it would be useful?

11 A. I think it would be useful.

12 THE COURT: Is there a reason not to do it?

13 THE WITNESS: Well, Fish & Wildlife Service doesn't
14 do it, so it's easy for me to say they should do it.

15 THE COURT: Who would do it?

16 THE WITNESS: Well, it would be DWR and the bureau.
17 And I think Dr. Ford in one of DWR's declarations may have
18 said that they would do it. I can't remember. I'm sorry.

19 THE COURT: They do have the physical resources in
20 terms of person, power and whatever testing equipment would be
21 required?

22 THE WITNESS: That would be -- I don't know that for
23 a fact.

24 THE COURT: All right.

25 BY MR. MAYSONETT:

1 Q. Moving on to action number three, Ms. Goude, could you
2 briefly summarize what's proposed in action number three?

3 A. It would be basically looking for larval delta smelt
4 smaller than 20 millimeters at the state and -- at the State
5 Water Project and Central Valley Project.

6 THE COURT: And at the present time, the 20
7 millimeter survey is just that. The nets are designed to not
8 pick up smaller fish.

9 THE WITNESS: Right.

10 THE COURT: Or larvae.

11 THE WITNESS: Correct. But I think they would
12 be -- this is -- this one would be looking actually at
13 the -- at both the fish protective facilities. So it's
14 actually sampling probably at the salvage facilities. I think
15 that's the intent.

16 BY MR. MAYSONETT:

17 Q. And Ms. Goude, how would that differ from a survey?

18 A. Basically this would be sampling, trying to find small
19 fish, I guess between five to 15, 20 millimeters, larvae right
20 at the facility. So they would be actually sampling. But it
21 wouldn't be through the 20 millimeter, it would be right at
22 the two facilities is my understanding.

23 Q. And where would a survey be conducted?

24 A. Throughout the numerous stations throughout the
25 Sacramento-San Joaquin Delta and there's some in Suisun.

1 Q. Ms. Goude, does the plaintiffs' proposal describe how this
2 new sub-20 millimeter monitoring would be conducted?

3 A. Not really.

4 Q. In your opinion, would there be any technical problems you
5 would have to solve to design this kind of monitoring?

6 A. Yes.

7 Q. What would some of those problems be?

8 A. Well, you'd have to get the equipment, you'd have to get
9 the personnel, you would have to make sure that they are
10 trained to identify those fish. There you would have to pay
11 attention that -- because some of this information is real
12 time information that everyone's using, so you would want to
13 be sure that this new information wouldn't mess -- wouldn't
14 affect your real time monitoring that you're trying to get
15 because basically you could have so many samples coming in at
16 a certain point you would have trouble processing them.

17 This is the kind of thing that should be looked at
18 through the Pelagic Organism Decline or through the
19 Interagency Ecological Program for further refined
20 development.

21 Q. If we could just touch on a few of those points. You
22 mentioned that there might be equipment problems.

23 What -- could you describe what kind of equipment problems
24 there might be?

25 A. Well, it really -- it depends. You'd have to have small,

1 smaller mesh, you would have to buy the equipment, I assume,
2 not unless they have it. And you would have to be able to get
3 those -- sort the fish and identify them. It's just a timing
4 process. It would be timely because you would have more fish
5 to identify over a period of time.

6 THE COURT: You mean time consuming?

7 THE WITNESS: Correct.

8 THE COURT: Thank you.

9 THE WITNESS: Sorry.

10 THE COURT: Perfectly all right.

11 BY MR. MAYSONETT:

12 Q. You mentioned that you would need trained personnel to
13 conduct this monitoring? What kind of training would people
14 require to be able to identify a sub-20 millimeter delta smelt
15 larval?

16 A. It's -- you would have to be able -- at a certain point, a
17 lot of the larvae look the same. And so you would just have
18 to have -- it's not necessarily more education, but it's more
19 training. I mean, with training, people can do it that have
20 good eyesight.

21 Q. And would there be other fish larvae present at the
22 facilities of this sub-20 millimeter size?

23 A. Yes.

24 THE COURT: You mean other species?

25 THE WITNESS: Yes.

1 THE COURT: You said other fish.

2 MR. MAYSONETT: Yes, Your Honor, that is what I
3 meant.

4 Q. Would there be other species of larvae present at the
5 facilities, Ms. Goude?

6 A. Yes.

7 Q. And is it easy to distinguish larvae in this size between
8 five and 20 millimeters of different species?

9 A. Not easy.

10 Q. Do they presently monitor for delta smelt larvae smaller
11 than 20 millimeters at the facilities?

12 A. No.

13 THE COURT: What benefit do you believe would be
14 produced by conducting these kinds of surveys that are
15 proposed in action number three?

16 THE WITNESS: I think what the attempt is to be able
17 to know -- well, my view is that you should be doing measures
18 not to get them to that place in the first place, because at
19 that point they're dead. So you're trying to actually prevent
20 them from getting to the facilities. So anything that you do
21 in a preemptive fashion is more important.

22 I'm not exactly sure what the benefits would be and
23 maybe I'm not the one to figure that out. But I do think it
24 would be something that other researchers should look at in
25 their course of the normal Interagency Ecological Program and

1 they probably have discussed it.

2 THE COURT: Thank you.

3 BY MR. MAYSONETT:

4 Q. Ms. Goude, are you aware of any engineering design for
5 this sort of monitoring?

6 A. No, I'm not.

7 Q. Ms. Goude, let's move on to plaintiffs' proposed action
8 number four. And in this action, the plaintiffs have proposed
9 limits on negative flows after a winter pulse flow; is that
10 correct?

11 A. That's correct.

12 Q. Is this recommendation similar to the recommendation that
13 the service has presented in its actions one and two?

14 A. It's similar, yes.

15 THE COURT: How different?

16 THE WITNESS: There -- they have a different running
17 average. They're looking at a five-day running average. We
18 use seven days and a 14-day running average would -- not to
19 exceed seven days. The -- their flow, let's see, they have a
20 2750, minus 2750 to 4250 flow that's similar to our action
21 two -- let's see, similar to our action -- it's similar, but
22 it --

23 THE COURT: More rigorous? More protective?

24 THE WITNESS: It's more rigorous in some areas and in
25 one of our areas -- well, it's more -- it's more rigorous, but

1 it's so close to ours that I don't see much difference.

2 THE COURT: Would that be, in your professional
3 opinion, no net benefit?

4 THE WITNESS: There would be, in my professional
5 opinion, no net benefit.

6 THE COURT: Thank you.

7 BY MR. MAYSONETT:

8 Q. And Ms. Goude, what's the basis for your opinion that it
9 would not provide a significantly greater benefit to the delta
10 smelt?

11 A. That we used -- when we were discussing it and looking at
12 the biology and some of the information is that, again, the
13 increase in take did seem to increase at or about 5,000. And
14 so we felt that if you have it below -- for action two, below
15 4500, not to exceed, that we were in an area of protection.

16 Q. If we could turn now to plaintiffs' action five, six and
17 seven.

18 Just briefly, what's action number six that the
19 plaintiffs propose?

20 A. It's the VAMP action.

21 Q. And the VAMP is -- what's the VAMP?

22 A. It's a -- it's actually, I just want to clarify that it's
23 been in -- it was in the Biological Opinion for quite a while.
24 But it's an April 15th to May 15th flow that was in the
25 original '95 opinion.

1 Q. And did the service include the VAMP in its proposed
2 action matrix?

3 A. No, because we assumed it was going to occur.

4 Q. Okay. If we could turn back to the plaintiffs' actions
5 five and seven. In those actions, they
6 recommended -- plaintiffs have recommended limits on negative
7 flows on the Old and Middle Rivers; is that correct?

8 A. That's correct.

9 Q. And are the actions that the plaintiffs have proposed here
10 similar to the limitations on negative flows that the service
11 has recommended in its action three?

12 A. They're similar.

13 Q. And how do the limits on negative flows in the service's
14 proposal and the plaintiffs' proposal differ?

15 A. Ours are from -- our similar flow is from zero to 4,000.

16 And I -- action five has a minus 750 to 2250. And so does --

17 THE COURT: Is it a minus 2250?

18 THE WITNESS: I'm sorry, yeah, minus 2250. And they
19 have a five-day average.

20 THE COURT: And what's the practical effect of a
21 five-day versus a seven-day running average?

22 THE WITNESS: I can only tell you what the engineers
23 or the operators told me.

24 THE COURT: Yes. Tell me that. Your understanding.

25 THE WITNESS: Yeah. My understanding was that they

1 were having -- they were having difficulty based on the tides
2 and the measurements, trying to -- they wanted to make sure,
3 since there's been times with the water quality control plan
4 that it's been difficult to meet the standards. So they
5 wanted to make sure that anything we proposed, that they could
6 adequately meet the standards because there is some variation
7 based on the tides and other issues. That was the explanation
8 for the seven-day running average that I remember that I
9 received in discussions.

10 THE COURT: So that we understand. What does it mean
11 to have a seven-day running average? Your sample or test is
12 run in, then, for some period of time longer than seven days
13 and you end up with a seven-day running average or is it
14 something different?

15 THE WITNESS: Well, I -- I should correct myself.
16 The flow will be a 14-day running average. I'm sorry. But
17 the seven-day running average for that action would never go
18 over 500 cfs. So you were trying to basically not
19 have -- what we didn't want to have is within that period a
20 huge flow and a peak. So, you know, all of a sudden you had a
21 4,000 cfs and then one day a minus 4,000 and then
22 minus -- something that went up to minus 7,000.

23 THE COURT: So the only way to achieve this is to
24 ramp down the pumps?

25 THE WITNESS: Correct.

1 THE COURT: Let's do this. Let's take the afternoon
2 recess at this time. We're going to stand in recess until 10
3 minutes after three.

4 (Recess.)

5 THE COURT: We're going back on the record in NRDC
6 versus Kempthorne. Mr. Maysonett, you may resume the direct
7 of Ms. Goude.

8 MR. MAYSONETT: Thank you, Your Honor.

9 Q. Ms. Goude, we were looking at the flow levels in the
10 plaintiffs' proposed actions five and seven. In your opinion,
11 are the differences between the flow levels in plaintiffs'
12 proposed actions five and seven and in the service's proposed
13 action three likely to provide -- excuse me. Strike that.
14 Let me start that again.

15 Ms. Goude, are the flow levels in actions five and
16 seven likely to provide significant greater levels of
17 protection to the delta smelt than the flow levels proposed in
18 service's action three?

19 A. Well, actually we have on our action three a lower level
20 at zero to -- at zero and they have minus 750. However, at
21 our upper end, we have a minus 4,000 and they have minus 2250.

22 Q. And do you believe that those differences are likely to
23 result in significantly different levels of protection for
24 delta smelt?

25 A. No, I don't.

1 Q. And what's the basis for your opinion?

2 A. I think that's based on the information we looked at, the
3 discussion and looking at Pete Smith's information as well as
4 other information that was discussed during our deliberations.

5 Q. And in these actions, Ms. Goude, the plaintiffs have
6 recommended fixed flows within a certain range, while the
7 service has recommended that a specific target be chosen from
8 a range of flows based on current survey data and modeling; is
9 that correct?

10 A. Correct.

11 Q. And in your opinion, which approach is more appropriate to
12 protect the delta smelt?

13 A. The service's.

14 Q. Why?

15 A. I think it represents real conditions of distribution,
16 looking at real time information, making some sound decisions
17 and also making sure that you are protective enough but
18 maintain enough water so that you can do further actions if
19 you need to.

20 THE COURT: And can you explain how that actually
21 applies based on these different levels? In other words, why
22 would the difference between negative 4,000 cubic feet per
23 second versus negative 2250 mean that there's not going to be
24 water in the system because if you don't pump, the water stays
25 there; doesn't it?

1 THE WITNESS: That's true.

2 THE COURT: And if that's at a lower level, that
3 wouldn't be at a cost to the project then, in terms of water.

4 THE WITNESS: It depends on whether they're
5 deliver -- I'm not --

6 THE COURT: Understood. You're not an operator.

7 THE WITNESS: All right. It depends on if there's
8 other water quality aspects that they -- water quality plan
9 issues that they have to deal with or other releases that they
10 might have from another reservoir, you know, for example.

11 THE COURT: But that's constant. That happens either
12 way. The plaintiffs proposal doesn't obliterate or eliminate
13 the other legal responsibilities the operators of the projects
14 have. They still have to comply with water decisions of the
15 resources control board, they still have to obey the ESA and
16 other laws, CVPIA that require water for protection. So how
17 is this, if you will, more real time, how is it better, if you
18 will, to use the vernacular, than the plaintiffs' proposal?

19 THE WITNESS: I guess in my opinion, that if delta
20 smelt are in Suisun, for example, then you may not need, based
21 on information of distribution from the Spring Kodiak Trawl,
22 the 20 millimeter surveys, other indices, you may not need to
23 use that water so it's equally protected.

24 I have a hard time -- and maybe it's just because
25 I've been doing this so long, I can't think of it in one-year

1 increments. I have to -- because the -- even though the fish
2 lives one year, it seems lately, unfortunately sometimes,
3 drought seems to come in twos. And it can be a very
4 significant concern if you have a second year of the drought.

5 And so you're trying to balance these issues. And
6 that is not perfect, but that is the way the service has to
7 look at some of these issues and make sound professional
8 judgment on having some sort of -- using your best information
9 available to make a call in a range. And I think also you
10 could need a zero flow. It could be just as significant and
11 just as important if the numbers are really low, that you may
12 need to be even more protected. So that was what -- why we
13 did it the way we did.

14 THE COURT: One more question. Don't the triggers
15 address that? In other words, the triggers call -- if I
16 understand them correctly, and you can correct me because this
17 is important. The triggers don't call for the action until
18 the conditions require. Or am I wrong?

19 THE WITNESS: The triggers -- the beginning
20 is -- let's see. I'm looking at the wrong one. I need to
21 look at ours. Our action initiates at the onset of spawning
22 or when the water temperatures reach 12 degrees centigrade.

23 THE COURT: And how about the plaintiffs?

24 THE WITNESS: Their action is -- whoops. The onset
25 is spawning as determined by the Kodiak survey by spent smelt,

1 very similar -- or 12 degrees, or their new one is
2 the -- their larval -- their smaller than 20 millimeter survey
3 at the pumps.

4 THE COURT: If that showed anything.

5 THE WITNESS: Right.

6 THE COURT: If it showed the presence of species at
7 the pumps.

8 THE WITNESS: Right. So it's very similar, their
9 trigger, except they added one.

10 THE COURT: So after having read that, would you say
11 that these are pretty much the same except the level of
12 pumping? Because they're not going to do it either unless
13 there's a need. Theirs isn't an absolute, to simply flow
14 water -- if the problem doesn't exist in a water year, you're
15 not going to take the water. It doesn't mandate it unless the
16 triggering event is present.

17 THE WITNESS: I guess I didn't read it that way, Your
18 Honor.

19 THE COURT: Do you read it that way now?

20 THE WITNESS: No.

21 THE COURT: No?

22 MR. MAYSONETT: Your Honor, could I ask --

23 THE COURT: Then tell me why.

24 THE WITNESS: Well, I don't see -- I mean, I
25 understand that you would still have the Kodiak survey

1 showing -- or the 12 degrees. I don't see where they say that
2 if they don't need it, you wouldn't use it. So maybe I'm
3 missing something.

4 I understand that -- what I remember from Dr.
5 Swanson's testimony is that she did mention that if there was
6 high flows -- I don't want to paraphrase her since it's been a
7 long day, but I think she mentioned that there could be an
8 off-ramp, but I hadn't read it from this.

9 THE COURT: I thought that there was some discretion
10 because of the triggers, the way Dr. Swanson described it.
11 But if you want to clarify, Mr. Maysonett, if you can.

12 MR. MAYSONETT: Maybe I could just ask a couple of
13 questions to try to clarify it.

14 Q. Ms. Goude, would you look at plaintiffs' action five, at
15 the triggers specifically. The first trigger would be based
16 on detection of spent delta smelt in the Kodiak survey; is
17 that correct?

18 A. Yes.

19 Q. And is that something that happens every year?

20 A. Yes.

21 Q. And the second trigger will be when water temperatures are
22 greater than 12 degrees; is that correct?

23 A. Yes.

24 Q. Is that something that happens every year?

25 A. Yes.

1 Q. And the third trigger is this detection of sub-20
2 millimeter delta smelt water facilities under their new
3 proposed monitoring; correct?

4 A. Correct.

5 Q. And are there sub-20 millimeter delta smelt larvae present
6 at some point in the Delta over the course of each year?

7 A. Yes.

8 Q. So is it fair to say that these -- that these triggers
9 would be triggered -- would definitely be triggered at some
10 point each year?

11 A. Yes.

12 MR. MAYSONETT: I'm not sure if that clarifies it,
13 Your Honor.

14 THE COURT: Well then the final question is, then,
15 even if it's not necessary?

16 THE WITNESS: Right.

17 THE COURT: That's your opinion?

18 THE WITNESS: That even if --

19 THE COURT: In other words, even if it is a wet year,
20 it's an excess water year. And so even if we get a 12 degree
21 temperature, which is likely even in a -- be more likely,
22 quite frankly, in a wet water year because there's more water
23 to keep the temperature down, you'd still be putting these
24 measures in place according to the plaintiffs even if they're
25 not necessary. Is that what your interpretation is?

1 THE WITNESS: That's what it appears.

2 THE COURT: All right. I understand. You may
3 proceed.

4 MR. MAYSONETT: Thank you, Your Honor.

5 Q. Turning to plaintiffs' proposed measures eight and nine,
6 Ms. Goude. Your Honor, I'm going to try to move through this
7 quickly, if possible.

8 Ms. Goude, is it fair to say that plaintiffs'
9 proposed measures eight and nine impose restrictions on the
10 Head of Old River Barrier and the agricultural barriers and
11 are similar to the service's proposed action five?

12 A. Yes.

13 THE COURT: Well, are there any differences?

14 THE WITNESS: I didn't see any differences. I didn't
15 note any difference. We were not as detailed in the
16 description, but the end point is the same. Not putting in
17 the --

18 THE COURT: You, in effect, do the same thing?

19 THE WITNESS: Right. Correct.

20 BY MR. MAYSONETT:

21 Q. And turning finally, Ms. Goude, to plaintiffs' proposed
22 action number ten, this is the so-called fall action, the X2
23 action. Can you just briefly explain what would be required
24 of the plaintiffs' proposed action plan ten?

25 A. This is basically to have X2 at upstream of 80 kilometers

1 on September 1st. That would be the trigger. And the action
2 would be to maintain Delta outflows at a minimum of 7500 cfs
3 or maintain X2 downstream of 80 kilometers, whichever requires
4 less fresh water outflow.

5 Q. And have you reviewed the scientific papers that
6 plaintiffs have cited in support of this proposal?

7 A. Yes. The major paper being Feyrer.

8 Q. And in your opinion, how certain is it that the operations
9 proposed in plaintiffs' action number ten would provide
10 significant benefits to the delta smelt?

11 A. I believe it's very uncertain at this point.

12 Q. What is the basis for your opinion?

13 A. I think that they have some -- that his report and -- his
14 study, their study had information that was -- has valid
15 information in there that should be looked at for the
16 long-term analysis in the Biological Opinion as well as some
17 other issues and information.

18 However, because of the concerns for salmon and
19 especially winter run, there have a lower return rate right
20 now, that there would be a major concern about implementing
21 this action. And there was a lot of discussion and debate
22 between the service biologists as well as the other biologists
23 that were participating on whether to have this action go
24 forward.

25 Q. And when you say there was debate upon biologists, service

1 biologists and the biologists who were participating, do you
2 mean participating in the development of the service's
3 proposal?

4 A. Yes.

5 Q. So did the service consider including the sort of fall
6 action in its own proposal?

7 A. There was discussions concerning it.

8 Q. And I believe you mentioned there were concerns for
9 salmon. Can you explain what those were?

10 A. Again, there was concern that there would be problems with
11 storage, that the storage is low in both the American and
12 Shasta. So -- I mean Folsom and Shasta. That there's very
13 little contribution that comes out of New Melones, I don't
14 remember the storage.

15 And so the concern was especially for Shasta, that it
16 would get into the coldwater pool for winter run salmon for
17 spawning.

18 In addition, there was debate on whether this
19 proposal was ripe, that there was more information that needed
20 to be discussed. And especially since, in the previous
21 discussions from the Delta Smelt Working Group and some of the
22 other biologists, there was a concern about doing this as you
23 were coming into a dry water year.

24 THE COURT: Let me understand. The practical effect
25 of measure ten of the plaintiffs, do you understand that to

1 create, if you will, a water habitat or zone for the fish to
2 be in by in effect extending this low salinity water area, the
3 X2 point, below the confluence to in effect protect more of
4 the fish? Is that what you understand the plaintiffs'
5 objective to be?

6 THE WITNESS: Yes.

7 THE COURT: And are you saying that for the amount of
8 water that's going to take, that there just isn't enough of a
9 net benefit beyond current operations to commit that water,
10 that additional water?

11 THE WITNESS: Um.

12 THE COURT: There's a potential effect on reservoirs
13 and other storage.

14 THE WITNESS: Right. And it's so important to make
15 sure that you do the winter actions too.

16 THE COURT: Was there any indication that this would
17 prevent winter actions?

18 THE WITNESS: Well, I can continue to hope that it
19 rains a great deal.

20 THE COURT: Well, are you saying that if the measure
21 ten is implemented, that there won't be water for winter
22 actions later in the year?

23 THE WITNESS: I'm not -- I'm not the person to
24 probably answer that. But I -- but there was concern about
25 how all these cascading effects might have for something that

1 myself, as well as the other service biologists, felt had some
2 doubts. It doesn't mean that this is something, as well as
3 other information and other ideas, that shouldn't be evaluated
4 in the biological assessment for the future opinion as well as
5 other things that people have discussed.

6 THE COURT: You're saying, to answer that question,
7 you need the operators from the bureau and State Water
8 Project.

9 THE WITNESS: As it relates to the high --

10 THE COURT: The supply concerns.

11 THE WITNESS: The supply concerns, yes.

12 THE COURT: Thank you.

13 BY MR. MAYSONETT:

14 Q. Okay. Just to wrap up, Ms. Goude, in your opinion, taking
15 all the actions identified in the service's matrix together,
16 will those actions be enough to protect the delta smelt over
17 this interim period until the new Biological Opinion is done?

18 A. Yes.

19 Q. And in formulating that opinion, did you consider the most
20 current data including the latest survey data?

21 A. Yes.

22 Q. And are you -- in your opinion, are the measures
23 identified on the plaintiffs' matrix, to the extent they go
24 beyond what the service has proposed, necessary to protect the
25 delta smelt over this interim period?

1 A. No.

2 Q. Why not?

3 A. I think that our -- most of ours are actually very similar
4 in aspect, except for action number ten, which we have some
5 concerns on and feel that they should have -- it should be
6 under -- further analyzed, that there's some questions
7 about -- even the authors express caution in the paper as well
8 as our own scientists and the Delta Smelt Working Group. And
9 mind you, some of the Delta Smelt Working Group was the group
10 that we worked with to develop our matrix.

11 MR. MAYSONETT: Thank you, Ms. Goude. I have no
12 further questions, Your Honor.

13 THE COURT: Mr. Wall, do you wish to cross-examine?

14 MR. WALL: I do, Your Honor.

15 THE COURT: You may proceed.

16 CROSS-EXAMINATION

17 BY MR. WALL:

18 Q. Good afternoon, Ms. Goude.

19 Counsel asked you about population estimates. Are
20 you familiar with Dr. Hanson's population estimates?

21 A. I am. I reviewed his declaration.

22 Q. Those -- are you familiar with the methods he used in
23 developing those estimates?

24 A. Generally speaking, yes.

25 Q. Those methods are not a reliable means of producing an

1 accurate population estimate for any particular year; are
2 they?

3 A. Not necessarily. There were a lot of assumptions made.

4 Q. Has the Fish & Wildlife Service ever asked a statistician
5 to evaluate a population estimate similar to Dr. Hanson's to
6 determine what the confidence intervals would be?

7 A. You mean in the United States? I mean, where? I'm sorry.

8 Q. Has the Fish & Wildlife Service ever asked a statistician
9 to evaluate population estimates for delta smelt that are
10 similar to Dr. Hanson's to determine what the confidence
11 intervals would be?

12 A. I don't know if the individual that's looking at the
13 information is a statistician or biologist. Right now.

14 Q. Has that --

15 A. I'm sorry.

16 Q. To your knowledge, has that individual developed
17 confidence intervals?

18 A. I don't know if he's gotten that far. I think he's
19 beginning to look at some information.

20 Q. Ms. Goude, were you -- did you supervise the preparation
21 of the five-year status review for the delta smelt a couple of
22 years ago?

23 A. I supervised, I reviewed, I edited, I helped write, I
24 briefed, I was involved.

25 Q. And was that status review conducted after the San Luis

1 and Delta-Mendota Water Authority submitted to the Department
2 of Interior an analysis of population size estimates,
3 population trends and extinction probabilities for the delta
4 smelt?

5 A. Truly, I can't remember. Sorry.

6 Q. Do you remember if San Luis and Delta-Mendota Water
7 Authority submitted such an analysis of population size?

8 A. You know, basically there was a lot of issues about the
9 five-year review. But I don't remember that. That doesn't
10 mean that didn't happen. Sorry.

11 Q. Do you remember whether the Fish & Wildlife Service
12 reviewed a white paper from Dr. William Miller in connection
13 with that status review?

14 A. We reviewed and looked at all the information and provided
15 data and information on the five-year review. So basically,
16 whatever was out there, we discussed. But there was also
17 some -- I don't remember how we referenced Dr. Miller's
18 research.

19 Q. Do you remember the white paper that he prepared?

20 A. I remember the white paper.

21 Q. And did the Department of Interior conduct a peer review
22 of that white paper?

23 A. The -- you mean for the five year review? If I remember
24 right, I'm not sure if it was Interior. I thought that -- and
25 I may be wrong, I thought it was the CALFED Science. But you

1 would have to check that, I'm sorry, I can't remember who did
2 the peer review. But I thought that there was some
3 information on the five-year review.

4 Q. Do you remember the conclusion of the peer review of Dr.
5 Miller's population estimates?

6 A. I'm not being very helpful. I'd have to look at that.

7 Q. Ms. Goude, you talked about the need for -- or whether
8 there was a need for sampling for larval delta smelt at the
9 export facility; correct?

10 A. Correct.

11 Q. And you said it was, if I recall correctly, in your view
12 was it more important to take preemptive measures to keep
13 larval delta smelt away from the facilities than to actually
14 determine whether they are at the facilities?

15 A. I don't know it if -- how -- I think that we used both
16 information. We use information from different agencies. We
17 obviously still need salvage information because that's how in
18 the past we have monitored incidental take statement. So I
19 can't say that that's not an important aspect of sampling,
20 though it's kind of a lethal one. So I guess you would need
21 both.

22 But obviously, on a biological basis, the way we have
23 analyzed our opinion is the more actions you take to keep the
24 fish out of the facility, the better it is.

25 Q. But Ms. Goude, there is no present sampling at the

1 facilities for larval delta smelt; is there?

2 A. No.

3 Q. So how would you go about validating whether your
4 protective measures designed to keep them away from the
5 facility are working?

6 A. We would look at some of the actions that the Delta Smelt
7 Working Group had talked about and that we outlined in one of
8 the -- Attachment A, where you look at real time data, you
9 look at the Spring Kodiak Trawl, you look at -- for
10 temperature. You're deciding those actions based on some
11 physical parameters. You look at particle tracking. You use
12 all the various tools that you have available to make those
13 determinations so that you do that early.

14 Q. But you don't look at whether there are actually larvae
15 being entrained at the pumps by taking samples at the
16 facilities?

17 A. Well, you sample at the facilities. But what you're
18 asking for is sampling at the facilities, I guess, both when
19 they're smaller than 20 millimeter. And what I said was -- in
20 a long way, was that basically it may be something that should
21 be considered. But to be able to actually implement a study
22 plan and a design program and then a determination of what you
23 consider significant detection to trigger an action is
24 something that needs to be done in the future.

25 So you detect one 50 millimeter smelt; what do you

1 do?

2 Q. Well, Ms. Goude, without that kind of sampling facilities,
3 would you know if there were thousands of larvae delta smelt
4 being entrained?

5 A. In our biological opinions through time, from the very
6 beginning we've always acknowledged that there is an
7 unquantified take that is occurring indirectly, not directly
8 at the facilities.

9 So -- and again, I -- I think the question is whether
10 you can, in fact, design something that would be sufficient to
11 manage it. I didn't say that it wouldn't be something that
12 shouldn't be looked at. I'm saying that for this time and
13 place, it's not appropriate.

14 Q. Ms. Goude, you mentioned some potential practical
15 difficulties, such as training and equipment with respect to
16 larval sampling at the facilities; correct?

17 A. Correct.

18 Q. Ms. Goude, the Interagency Ecological Program conducts a
19 20 millimeter survey at areas other than the export
20 facilities; correct?

21 A. That's correct.

22 Q. And it samples for larvae at areas other than the export
23 facilities; correct?

24 A. Yes.

25 Q. It just doesn't sample at the facilities themselves;

1 correct?

2 A. Yes.

3 Q. Ms. Goude, the water development project operations
4 continue to adversely impact the delta smelt in its long-term
5 viability; correct?

6 A. We have done numerous biological opinions that deal with
7 the direct and indirect effects of delta smelt and on adverse
8 modification or not adverse modification critical habitat,
9 yes.

10 Q. That wasn't quite the answer to my question. Would you
11 read back my question, please.

12 (Record read as requested.)

13 THE WITNESS: There -- I -- that's a confusing
14 question. Can -- because you -- it depends on the action that
15 you're evaluating. It depends on what's in the project
16 description. It depends on what's being proposed.

17 MR. WALL: May I approach, Your Honor?

18 THE COURT: You may.

19 THE CLERK: Are you wanting this to be 13?

20 MR. WALL: Yes, ma'am.

21 (Plaintiffs' Exhibit 13 was marked for
22 identification.)

23 THE COURT: All right. Do we have a title of this
24 exhibit?

25 MR. WALL: Your Honor, this is -- well, perhaps I

1 could ask the --

2 THE COURT: Yes.

3 MR. WALL: -- the witness to identify it.

4 Q. Ms. Goude, do you recognize this document?

5 A. Yes, it it's the five-year status review for the delta
6 smelt.

7 Q. And you mentioned that you were intimately involved in the
8 writing of this document?

9 A. Reviewing and at some points writing and briefing.

10 MR. WALL: Your Honor, I move to have Plaintiffs' 13
11 admitted in evidence.

12 THE COURT: Any objection?

13 Plaintiffs' 13 is received in evidence.

14 (Plaintiffs' Exhibit 13 was received.)

15 BY MR. WALL:

16 Q. Ms. Goude, let me turn you to page two. In the first full
17 paragraph. If I could ask you to read the last two sentences
18 of that paragraph, please. Out loud for the record.

19 A. On page two?

20 Q. Yes. It's the page two of the cover letter to --

21 A. Oh, I'm sorry.

22 Q. -- to Mr. Bill Pauli.

23 A. "The Farm Bureau"? Is that what you're talking? Oh, I'm
24 sorry.

25 Q. The paragraph begins "Our review concludes."

1 A. Okay. Obviously -- "Our review concludes that the delta
2 smelt population remains at relatively low levels
3 compared to its historical levels (1970s). We also
4 found that there had been some years of increases in
5 population from one year to the next, notably 1999,
6 2000 and 2001, followed by steep declines in
7 pre-listing 1980s levels and 2002 and 2003. We
8 identified a number of factors that continue to
9 adversely impact the delta smelt and its long-term
10 viability. Among the most significant impacts are
11 modifications to the natural hydrology due to both
12 natural weather patterns and water development
13 project operations."

14 Q. Thank you, Ms. Goude. Let me re-ask my earlier question.
15 Water development project operations continue to adversely
16 impact the delta smelt in its long term viability; correct?

17 MR. BUCKLEY: Objection, vague.

18 THE COURT: Do you understand the question?

19 THE WITNESS: Yes.

20 THE COURT: Overruled.

21 THE WITNESS: Yes.

22 BY MR. WALL:

23 Q. And the CVP and the State Water Project are the largest
24 water development projects affecting the Delta; correct?

25 A. Yes.

1 Q. The CVP and State Water Project continue to adversely
2 affect the Delta smelt's long-term viability; check?

3 MR. O'HANLON: Objection. Vagueness.

4 THE COURT: Do you understand the question?

5 THE WITNESS: No.

6 THE COURT: Sustained.

7 BY MR. WALL:

8 Q. Ms. Goude, you testified that water development project
9 operations continue to adversely impact the delta smelt in its
10 long-term viability. And that the CVP and the State Water
11 Project are the largest water development projects that are in
12 the Delta.

13 MR. WILKINSON: Misstates the testimony.

14 THE COURT: It doesn't. She answered both questions
15 in the affirmative. Overruled. I assume this is a predicate.
16 You want to ask the question?

17 BY MR. WALL:

18 Q. Ms. Goude, the CVP operations continue to adversely impact
19 the Delta smelt's long-term viability; correct?

20 MR. O'HANLON: Objection. Ambiguous.

21 THE COURT: Well, it's been asked and answered. Let
22 me read you the question back. In fact, let me have the
23 reporter read it back. At 1542.

24 (Record read as requested.)

25 BY MR. WALL:

1 Q. So now I'm asking specifically do the CVP and State Water
2 Project continue to adversely impact Delta smelt's long-term
3 viability?

4 MR. O' HANLON: Objection. Ambiguous.

5 THE COURT: Overruled. Do you understand the
6 question?

7 THE WITNESS: It's the part at the end. There is an
8 adverse effect. We haven't made the determination of the
9 long-term viability until we do the Section 7 Biological
10 Opinion that is now initiated by the bureau.

11 BY MR. WALL:

12 Q. Ms. Goude, doesn't the March --

13 THE REPORTER: I'm sorry. Start over.

14 BY MR. WALL:

15 Q. Ms. Goude, the March 31, 2004 five-year status review that
16 you prepared reaches a conclusion regarding the long-term
17 viability of the delta smelt and the connection of that
18 long-term viability to water project operations; correct?

19 A. Well, I'm kind of confused. You're referring to the
20 transmittal letter that transmits. The actual five-year
21 review is the actual thing that goes in the register as the
22 part that starts on page one.

23 Q. I see.

24 A. And I tend to not -- I'm not in the California-Nevada
25 office, that's like our regional office. I'm in the field

1 office. So I most likely didn't have anything -- I can't
2 remember the letter, the transmittal letter. What I was
3 dealing with was the five year review.

4 Q. Who is Steve Thompson?

5 A. He is the manager for the California-Nevada office.

6 Q. And he works for the Fish & Wildlife Service?

7 A. Correct.

8 Q. And is Steve Thompson in a position senior to your own?

9 A. Yes.

10 Q. And he's transmitting the five year status review through
11 this cover letter?

12 A. Correct.

13 Q. And would it be fair to say that his cover letter
14 summarizes some of the conclusions of the five year status
15 review?

16 A. It seems to, but I'd have to re-read the five-year review.

17 Q. Ms. Goude, are you able to tell us whether the CVP has an
18 adverse impact on the Delta smelt's long-term viability?

19 A. I will by the summer of hopefully 2008 when we do an
20 analysis in the Biological Opinion. We've already concluded
21 in the past that there's been adverse effects and that we
22 have -- even though the opinion has had difficulty in '05, we
23 did talk about the adverse effects of the opinion, the Central
24 Valley Project and the State Water Project that it had on
25 delta smelt and its critical habitat.

1 So we've always said that there has been an effect.
2 We have not made a new determination on its viability at this
3 point because it depends on what's before us in the project.
4 And that's part of our analysis.

5 Q. So today, as we're here in the Court, do you have an
6 opinion on whether the operations of the CVP and the State
7 Water Project adversely impact the Delta smelt's long-term
8 viability?

9 A. If you didn't do anything, if they didn't implement any
10 conservation measures, if they did everything wrong, yes.

11 Q. If they operate as they're operating today --

12 A. Well, as it related to the 2005 Biological Opinion? Oops,
13 not supposed to ask a question. I'm -- I don't understand.

14 Q. Ms. Goude, let me try this from a different angle. Has
15 the service concluded -- and by "the service," I mean the Fish
16 & Wildlife Service. Has the service concluded in the past
17 that operations of the CVP and State Water Project adversely
18 impact the Delta smelt's long-term viability?

19 A. You mean in a Biological Opinion, we usually don't talk
20 about its long-term viability. We talk about the adverse
21 effects of the action and we describe the effects of the
22 action and then make a call on its -- whether it's a jeopardy
23 opinion or no jeopardy. And on the take statement.

24 Q. So I'm sorry. What's the answer to my question?

25 A. The five-year review discussed in the cover letter that it

1 does, in fact, say the statement that you said that was two
2 sentences. And it does say what you, in fact, said that it
3 talks about the long-term viability in the cover letter.

4 Q. What are the adverse effects of the Central Valley Project
5 and State Water Project on the Delta smelt's viability?

6 A. The adverse effects have to deal with both indirect and
7 direct. Entrainment as well as moving, changing the
8 hydrology, affecting the hydrology, affecting where delta
9 smelt would be, where it -- and probably reducing available
10 habitat for delta smelt over time.

11 Q. That would include available habitat for the delta smelt
12 in the fall months?

13 A. No. I would say that it includes available habitat for
14 Delta -- remember critical habitat's everything within the
15 legal Delta. So basically it's any modification of that
16 habitat.

17 Q. And do operations of the CVP and State Water Project
18 modify that critical habitat during the fall months?

19 A. It modifies it during the entire year. And that's what
20 would be analyzed in the 2008 Biological Opinion that's
21 forthcoming, looking at it on a year-round basis to see what
22 modifications would happen. And that would be -- that is
23 what's being currently presented and analyzed in the
24 biological assessment that's being prepared by the Bureau of
25 Reclamation and DWR.

1 Q. Ms. Goude, does your proposed Action Matrix contain any
2 measures to minimize or mitigate impacts of State Water
3 Project or Central Valley Project on delta smelt critical
4 habitat during the fall months?

5 A. Well, since critical habitat includes everything,
6 basically action one and two and three, and you can even say
7 five because if you improve the -- and don't have the
8 barriers, that actually provides it. The only one that you
9 could argue wouldn't would be action four, the adaptive
10 management entrainment one.

11 Q. Ms. Goude, I'm going to ask the reporter to read back my
12 question and if you wouldn't mind.

13 THE REPORTER: I'm sorry, you'll have to restate it.

14 BY MR. WALL:

15 Q. Ms. Goude, does your proposed Action Matrix include any
16 measures to mitigate impacts of the Central Valley Project and
17 State Water Project on delta smelt critical habitat in the
18 fall months?

19 MR. BUCKLEY: Objection. Asked and answered.

20 THE COURT: The witness partially answered the
21 question. I will ask her if you had completed your answer to
22 the question.

23 THE WITNESS: Would you mind reading back my answer?

24 I mean --

25 (Record read as requested.)

1 BY MR. WALL:

2 Q. Ms. Goude, do any of actions one, three -- well, actually,
3 any of your actions, occur during the fall months?

4 A. No.

5 Q. So then the answer to my question about whether your
6 action matrix does anything to mitigate adverse impacts on
7 delta smelt critical habitat in the fall months would be no;
8 correct?

9 MR. O' HANLON: Objection. Assumes facts not in
10 evidence.

11 MR. LEE: Also objection. Asked and answered.

12 THE COURT: That objection is overruled. As to the
13 foundational objection, this is a probing of the witness'
14 answer and because it is cross-examination, I'm going to
15 overrule the objection. I want to be sure the witness
16 understands the question.

17 THE WITNESS: It's similar to the jeopardy question.
18 And the service determines critical habitat, as everybody
19 knows, as rule making and it's based on the primary
20 constituent elements. And whether you adversely modify
21 critical habitat is in the context of a Biological Opinion.

22 And for better or worse, with 20 years of dealing
23 with endangered species and regulation, I have trouble
24 answering it other than in the context of how you administer
25 critical habitat. It isn't something you just discuss, it is

1 an action that was -- you know, it's part of the law.

2 THE COURT: There is a temporal aspect to his
3 question. It is -- you just answered that there are no
4 specific measures under the action matrix by the government
5 that occur, that are implemented in the fall, yet you answered
6 that these other actions that you've listed do, if you will,
7 benefit the objectives. And so can you explain that answer?

8 THE WITNESS: Basically you're improving habitat
9 within the Old and Middle River and within the central Delta
10 during those periods of time. You contribute making it,
11 hopefully, the south Delta less adverse during those -- that
12 period of time.

13 The issue on the critical habitat is that the way the
14 rule is made right now, that is in standing, is basically all
15 aspects of the water are primary constituent elements. Its
16 temperature, the salinity, the grading, it's everything. So
17 basically almost any water molecule that's in the Delta is a
18 primary constituent element. So it makes it hard to deal with
19 critical habitat.

20 THE COURT: And if these measures are implemented at
21 times other than the fall, do they or do they not have
22 beneficial or adverse effects in the fall?

23 THE WITNESS: We don't have any actions in the fall,
24 but that doesn't mean that there aren't other water quality
25 control plan items that are occurring in the fall that also

1 would be ongoing. So the existing D 1641 and other items that
2 are in place would also be contributing. We haven't done that
3 kind of analysis yet.

4 THE COURT: Thank you.

5 BY MR. WALL:

6 Q. Ms. Goude, the threats of destruction modification or
7 curtailment at Delta smelt's habitat resulted from the
8 operations of the SWP and CVP could result in the extinction
9 of the delta smelt; correct?

10 A. It could.

11 Q. In fact, even if the action matrix that was attached to
12 your declaration were implemented, these impacts would
13 appreciably reduce the Delta smelt's ability to recover;
14 correct?

15 MR. O'HANLON: Objection. Lacks foundation.

16 THE COURT: The objection is overruled. Do you
17 understand the question?

18 THE WITNESS: Yes. I don't agree.

19 BY MR. WALL:

20 Q. Does the operation of the CVP and State Water Project in
21 the fall months adversely modify the critical habitat of the
22 delta smelt?

23 A. We haven't really done the adverse modification analysis.
24 The last OCAP was mainly concentrating between January and
25 June and this year -- this analysis will be a year-round

1 analysis that will be in the new OCAP opinion in 2008.

2 Q. So as you sit here today, are you able to offer an opinion
3 about whether the operation of the CVP and SWP in the fall
4 months, with your action matrix in place, would adversely
5 modify the critical habitat of the delta smelt in the fall
6 months?

7 A. I wouldn't proffer an opinion on jeopardy or adverse
8 modification.

9 Q. So then let me ask you this question: If the CVP and
10 State Water Project operations are modified to conform to your
11 action matrix, do you have an opinion about whether those
12 operations would either jeopardize or adversely modify the
13 critical habitat of the delta smelt?

14 A. I believe that our matrix for the year 2008 would be
15 sufficiently protective for delta smelt until the Biological
16 Opinion is written.

17 MR. WALL: Madam reporter, did you get down my
18 question?

19 THE REPORTER: I did.

20 MR. WALL: Could you please read it? And Ms. Goude,
21 could you please answer the question I posed.

22 (Record read as requested.)

23 THE COURT: I think she has answered your question in
24 effect by stating an affirmative inconsistency. In other
25 words, she didn't specifically say yes or no, but rather she

1 testified that in place the FWS action matrix would, use her
2 words, be sufficiently protective for delta smelt until the
3 Biological Opinion was written. And that, I think, is
4 sufficiently inconsistent in the premise of your question and
5 it is a responsive answer.

6 MR. WALL: What I'm trying to explore, Your Honor, is
7 I'm not sure what she means by "sufficiently protective."

8 THE COURT: You can ask her directly what she means.

9 MR. WALL: Right.

10 Q. So how -- explain to me what you mean by "sufficiently
11 protective."

12 A. That it's protective enough for the water year 2008, that
13 the species should be able to withstand the effects and make
14 it to -- while we're doing the Biological Opinion. So it's
15 sufficiently protected. It's adequate. It's fine.

16 Q. It's sufficiently protective to insure that the delta
17 smelt doesn't go extinct until the Biological Opinion is
18 completed; is that correct?

19 A. Yes.

20 Q. Are you able to offer an opinion about whether it provides
21 any level of protection above extinction? Or above preventing
22 extinction?

23 MR. WILKINSON: Compound.

24 THE COURT: Overruled. One question.

25 THE WITNESS: The -- you just asked the question of

1 extinction. I think it actually provides a more protective
2 level than to the level of extinction. I don't -- but you
3 asked the question with extinction.

4 But I think it's sufficiently protective for the
5 species. It's a one-year event. I think that basically the
6 suite of biologists that we worked with on it, the people we
7 discussed, everybody felt it was. And at the same time, we
8 have to deal with other fish species in the system.

9 BY MR. WALL:

10 Q. Ms. Goude, what is your understanding of the concept of
11 adverse modification of critical habitat?

12 A. You mean as it's defined in law and it's basically whether
13 you -- it depends on the critical habitat designation, but
14 it's appreciably reduced. The adverse -- to -- if I
15 don't -- it's whether you affect the primary constituent
16 elements and reduce or modify the critical habitat. And it's
17 part of the analysis that goes into a Biological Opinion.

18 Q. Have you assessed whether CVP and SWP operations, subject
19 to your action matrix, would meet the no adverse modification
20 standard?

21 A. We haven't done that yet.

22 Q. So at this time, you have no opinion on that subject?

23 A. No.

24 Q. Ms. Goude, salvage does not reliably indefinitely help the
25 smelt entrainment; does it?

1 A. No.

2 Q. And large numbers of young delta smelt are entrained in
3 the CVP and State Water Project export facilities; correct?

4 MR. O' HANLON: Objection. Ambiguous.

5 THE COURT: Do you understand the question?

6 THE WITNESS: Well, there is --

7 THE COURT: You have to tell me if you understand the
8 question.

9 THE WITNESS: No, I don't.

10 BY MR. WALL:

11 Q. Ms. Goude, could you please turn to page 22 of the
12 five-year status review.

13 A. I'm sorry, did you say 23?

14 Q. I'm sorry, I should have said 23. I said 22, but I meant
15 23.

16 A. And I went to 23.

17 THE COURT: You don't have it?

18 THE WITNESS: No, I did. I just went automatically
19 to 23.

20 THE COURT: All right.

21 BY MR. WALL:

22 Q. Could you please read the first sentence of the fourth
23 paragraph?

24 A. "Based upon years of entrainment data at the CVP and SWP
25 facilities, it is clear that large numbers of delta smelt are

1 subject to mortality each year."

2 Q. Is that a correct statement, Ms. Goude?

3 A. Yes.

4 Q. Ms. Goude, is the California Department of Fish & Game
5 concerned that entrainment at the CVP and State Water Project
6 may be a major source of population impacts under certain
7 conditions?

8 A. Yes.

9 Q. Ms. Goude, the delta smelt salvage counts at the CVP and
10 State Water Project export facilities do not include any delta
11 smelt smaller than 20 millimeters; correct?

12 A. Yes.

13 Q. And take of larval delta smelt at those export facilities
14 is assumed to be high because of the smelt's poor swimming
15 ability; correct?

16 A. Not just the poor swimming ability, just basically on
17 distribution within the system too.

18 Q. But the Delta -- the take of larval smelt at those
19 facilities is assumed to be high; correct?

20 A. Yes.

21 MR. O' HANLON: Objection. Ambiguous.

22 THE COURT: Overruled. Do you agree with the four
23 percent survival estimate that we heard about earlier?

24 THE WITNESS: Four percent -- four percent of
25 juveniles making it to adult?

1 THE COURT: Yes.

2 THE WITNESS: It's been discussed. I'm not sure. I
3 don't know if I have an opinion know one way or the other.

4 THE COURT: Thank you.

5 BY MR. WALL:

6 Q. Ms. Goude, did delta smelt salvage count for the CVP and
7 State Water Project export facilities represent only a small
8 portion of the delta smelt killed by operation of these
9 facilities; correct?

10 MR. O'HANLON: Objection. Lacks foundation.

11 THE COURT: Are you familiar with this report?

12 THE WITNESS: Which report are you --

13 THE COURT: This would be exhibit, that is
14 Plaintiffs' 13, the five-year status review.

15 THE WITNESS: Oh, yeah. I'm sorry, yes.

16 THE COURT: All right. Are you able to answer this
17 pending question based on your knowledge as of that time?
18 This would be March 31st, 2004?

19 THE WITNESS: Yes. Could you repeat the question?
20 I'm sorry.

21 MR. WALL: Sure.

22 Q. The delta smelt salvage counts at the CVP and SWP export
23 facilities represent only a small portion of the delta smelt
24 killed by operation at these facilities; correct?

25 A. Yes.

1 Q. Do you have any estimate at this time of when the next
2 Biological Opinion will be completed, or the OCAP, with
3 respect to the delta smelt?

4 A. I don't remember. There is a couple of declarations from
5 the bureau. We have not received a biological assessment to
6 date.

7 Q. So at this time you don't have any estimation or do you
8 have any estimation of when the Biological Opinion will be
9 completed?

10 A. I think there's been some schedules that have shown the
11 winter, but I -- I'm not exactly sure of the date. Sorry.
12 There's been two schedules and I can't remember.

13 THE COURT: Of what year?

14 THE WITNESS: That's a good question. This year.
15 But it's determinate on getting the biological assessment for
16 the Fish & Wildlife Service and the National Marine Fisheries
17 Service. We're doing it together.

18 That may be -- I'm sorry, that may be the -- that may
19 be the date that the biological assessment's coming. So
20 that -- and then you would be getting -- developing the
21 Biological Opinion after that.

22 And in addition, this is going from memory, that my
23 understanding is National Marine Fisheries Service has quite a
24 lengthy review process that they have to go through. Ours is
25 simpler.

1 BY MR. WALL:

2 Q. So do you have an estimate of when the Biological Opinion
3 for effects of OCAP on delta smelt will be completed?

4 A. I'm hoping soon. If we have the BA in December, then it's
5 dependent somewhat on NMFS review of the BA is what I
6 understand. I don't -- I think they're talking about some
7 peer review of the biological assessment. So there is a
8 schedule that was provided in one of the declarations, I'm
9 sorry, I just can't remember.

10 MR. WALL: Okay. Do you have Ms. Goude's August 3rd
11 declaration in evidence yet? I'm not sure.

12 MR. MAYSONETT: I believe we do.

13 THE COURT: I think that was offered by the
14 government.

15 MR. MAYSONETT: Your Honor, I believe it was DWR's
16 Exhibit D.

17 THE COURT: Oh, thank you. DWR D. Do you have it up
18 there, Ms. Goude?

19 THE WITNESS: Uh-huh.

20 BY MR. WALL:

21 Q. Ms. Goude, if I could ask you to turn to page six of that
22 declaration. And read paragraph nine, sentence number one.

23 A. "As I stated in my July 3rd, 2007," is that where you want
24 me to start?

25 Q. Yes. Thank you.

1 A. "As I stated in my July 3rd, 2007 declaration in this
2 action, it is my opinion that implementation of the various
3 actions identified in Exhibit 2 of that declaration is
4 expected to provide the minimum in protective actions
5 necessary to protect delta smelt from potential adverse
6 effects associated with the diversion of water from the Delta
7 by the CVP and SWP during 2008 water year."

8 Q. Ms. Goude, when you say "the minimum in protective actions
9 necessary to protect the delta smelt," do you mean that
10 there's no room for error?

11 A. I didn't -- I think I meant that more in the future
12 Biological Opinion, that we would have to evaluate all the
13 different effects because it's a long-term opinion for multi
14 years, which would include more analysis. I guess I saw
15 things in a different way.

16 Q. Ms. Goude, how confident are you that the actions listed
17 in your action matrix would eliminate adverse effects
18 associated with the diversion of the water from the Delta by
19 the CVP and State Water Project during 2008 water year?

20 A. I don't think anything eliminates the adverse effect, but
21 I'm very confident that this matrix is a good matrix, written
22 by a lot of biologists with a lot of discussions. And
23 especially since I personally have some major concern for the
24 delta smelt, I feel very confident that this is adequate.

25 Q. Would the remaining adverse effects that would not be

1 eliminated by the action matrix, would those remaining adverse
2 effects on the delta smelt be detectable?

3 A. There's a lot of effects that people still don't know or
4 how they interrelate, so probably not.

5 Q. You wouldn't be able to detect take, remaining take after
6 the action matrix were put in place?

7 A. I'm confused. Sorry. I'm confused on what actually
8 "take" is anymore, so --

9 Q. Okay. Let me try this from another angle. I don't want
10 to confuse you.

11 If your action matrix were implemented in water year
12 2008, would the state and federal export facilities continue
13 to have measurable adverse effects on the delta smelt?

14 A. They would more than likely. There still will be take
15 occurring in both the state and federal facilities, so that
16 would be one of the measurable effects.

17 Q. Would there be others?

18 A. There's indirect effects. There's changes in hydrology.
19 There's other effects that you would have.

20 Q. Ms. Goude, this sentence says that you believe the action
21 matrix would provide the minimum in protective actions
22 necessary to protect the delta smelt from potential adverse
23 effects associated with the diversions of water from the Delta
24 CVP and SWP during the next water year.

25 Do operation of the CVP and SWP have impacts on the

1 delta smelt through mechanisms other than diversions of water
2 from the Delta?

3 A. You mean modification of hydrology? Change in potential
4 how you deal with invasive species if there's effects on food?
5 There's a whole myriad of effects that you analyze.

6 Q. And those are effects of the CVP and SWP on the Delta
7 smelt's habitat; correct?

8 A. There -- since -- it's their effects that are indirect
9 effects on delta smelt. And some of those indirect effects
10 occur irrespective of the action you're analyzing or looking
11 at. But there are some that are also associated with the
12 Central Valley Project and the State Water Project.

13 MR. WALL: Madam reporter, would you mind reading
14 back the question.

15 (Record read as requested.)

16 BY MR. WALL:

17 Q. Do you understand that question?

18 MR. WILKINSON: I think it's been asked and answered,
19 Your Honor.

20 THE COURT: Sustained.

21 BY MR. WALL:

22 Q. Ms. Goude, do the operations of the major dams that are
23 part of the CVP and SWP affect delta smelt critical habitat?

24 A. Since critical habitat, the primary constituent element's
25 basically all water and actions, it really depends. So Shasta

1 contributes water into the system obviously. And so does the
2 American River and New Melones. As well as other dams.

3 Q. So is the answer to my question yes?

4 A. As it relates that the molecules of water that come down
5 the system and then enter the geographic areas that are the
6 critical habitat area, yes.

7 Q. And those molecules of water affect salinity in the Delta;
8 correct?

9 A. They can affect salinity, temperature, flow, sediment.

10 Q. Turbidity?

11 A. Turbidity, yes. Yes.

12 Q. Did you analyze those effects in preparing your
13 declarations in this case?

14 A. No. But there are some discussions or analysis as it
15 relates to the operators are having to look at storage and
16 operations of the system and seeing how you would, in fact,
17 implement those actions. And they're better at answering that
18 question than myself.

19 Q. But you didn't evaluate how the CVP or SWP's decision to
20 release or not release water from their dams is affecting the
21 Delta smelt's habitat?

22 A. No, I was more concerned about how it affects salmon and
23 steelhead because I had NMFS sitting next to me at those
24 meetings. Oh, and green sturgeon, I'm sorry.

25 Q. Ms. Goude, in your declaration, you refer to some recent

1 work by Dr. William Bennett regarding -- I'm not sure I'm
2 going to pronounce this word correctly -- but delta smelt
3 otoliths or otoliths.

4 A. Yeah. Yes. Don't make me spell it.

5 Q. Let me see if I can find the passage so we can give the
6 reporter a spelling.

7 THE REPORTER: I've got it.

8 BY MR. WALL:

9 Q. Is it your understanding of his research -- well, let me
10 ask you this. Could you briefly describe your understanding
11 of that research by Dr. Bennett?

12 A. I basically looked at CALFED Science report, I think it
13 was in '05. And we were looking at just some of the
14 information as it relates to it, so I'm not totally versed in
15 every aspect of his research. So it depends. It was a large
16 document.

17 Q. And Ms. Goude, if you could turn to page two of your
18 August 3rd declaration. And read the sentence that begins at
19 line 9.

20 A. At which, line 19?

21 Q. At line 9. I'm sorry. Actually read those two sentences
22 starting with the one at line 9, that begins with "Bennett
23 (2006)"?

24 A. "Bennett (2006) observed the very few of the delta smelt
25 that are spawned prior to April 15th survive to be collected

1 in summer and fall surveys" -- I'm sorry, "summer and fall
2 surveys."

3 Q. Could you read the next sentence, please.

4 A. "Those delta smelt that do survive appear from their
5 otoliths to have hatched during the Vernalis Adaptive
6 Management Plan period (generally from mid-April through
7 mid-May) when exports are curtailed and San Joaquin River
8 flows into the Delta are augmented."

9 Q. Do you know whether any of the years which Dr. Bennett
10 conducted his research were wet years?

11 A. I don't remember. But I do want to make a correction that
12 this Vernalis Adaptive Management Plan was originally a part
13 of the Water Quality Control Plan and in the 1995 Biological
14 Opinion.

15 Q. Are you aware that Dr. Swanson has based her proposed
16 action measure five on this research?

17 A. She's based it on this as well as other research, yes.

18 Q. And are you aware that she set the flow levels she
19 recommends in her action five for Old and Middle Rivers to
20 conform with average flow levels on those rivers that are
21 experienced during the VAMP period?

22 A. Yes.

23 Q. And do you know what those flow levels are?

24 A. I'd have to look at them again.

25 Q. Let me represent to you it's a target of 1500 plus or

1 minus for variability.

2 A. Yes.

3 Q. And if those were the flow levels on Old and Middle River
4 in a year in which Dr. Bennett found that fish survived
5 only -- those were the flow levels on Old and Middle River
6 during the VAMP period in a year in which Dr. Bennett found
7 that only those delta smelt spawned during the VAMP period
8 survived to reproductive age.

9 MR. WILKINSON: Objection. Ambiguous.

10 THE COURT: I don't think the question has been
11 finished.

12 MR. WALL: No, it isn't.

13 Q. And would you believe that was an appropriate basis for
14 setting the levels on Old and Middle River?

15 MR. LEE: Objection. The characterization of the
16 VAMP flows is inaccurate.

17 MR. WALL: I'm sorry. I'm asking her to make an
18 assumption. We, of course, will, if we haven't already, prove
19 up that assumption.

20 THE COURT: All right. Let us do this. Let us start
21 the question over, please, at a measured pace, state it in one
22 complete question and then if there are objections, you may
23 state your objections. Let's get a question and we'll see
24 where we go.

25 MR. WALL: Thank you, Your Honor.

1 Q. Let me ask you to assume that in a year in which Dr.
2 Bennett found that only those delta smelt spawned during the
3 VAMP period survived and in that year the average Old and
4 Middle River flows during the VAMP period were no more
5 negative than minus 1500 cfs --

6 MR. WILKINSON: Objection. I believe the question
7 misstates Mr. Bennett's report.

8 THE COURT: She's being asked to assume these values.
9 If it's tied to the Bennett report and the Bennett report is
10 different, then this would be a failure to prove as to the
11 hypothetical fact has to be assumed. So if you claim it's
12 stating the report, counsel chooses to do that, then it's
13 either -- it's not an improper hypothetical, it's just an
14 unprovable hypothetical. So that objection is overruled.

15 Let's see if we can get a question stated completely
16 and then we'll have the objections, please.

17 BY MR. WALL:

18 Q. Ms. Goude, I'm going to ask you to assume that in a year
19 in which Dr. Bennett found that only those fish spawned during
20 the VAMP period survived to reproductive -- only those delta
21 smelt spawned during the VAMP period survived to reproductive
22 maturity.

23 And I'm also going to ask you to assume that in that
24 year the flows on the Old and Middle River were no more
25 negative than minus 1500 -- the average flows in the old to

1 Middle River were minus 1500 cfs during the VAMP period.

2 And I'm going to ask you to assume that flows in that
3 year on Old and Middle River were more negative than minus
4 1500 cfs in the month prior to the VAMP period.

5 And I'm going to ask you to assume that it was a wet
6 year.

7 A. This is kind of like the train left the station. Let's
8 see.

9 THE COURT: I don't think the question is finished.

10 THE WITNESS: Oh, it isn't? This train left the
11 station.

12 THE COURT: Don't be impatient. We're going to get
13 there.

14 BY MR. WALL:

15 Q. Given those assumptions, would you believe that flows in
16 excess of negative 1500 cfs for the month before the VAMP
17 period would be protective of delta smelt in a wet year?

18 MR. O'HANLON: Objection. Incomplete hypothetical.

19 THE COURT: That objection is overruled. Do you
20 understand the question?

21 THE WITNESS: Well, I don't want him to repeat it, so
22 I'm going to try and answer it.

23 THE COURT: You may.

24 THE WITNESS: I -- it may be. It could be. It
25 depends. And it really depends on a lot of factors. But yes,

1 it could be protective.

2 THE COURT: Now let me ask this. How much longer do
3 you have?

4 MR. WALL: I'll need to glance through my notes
5 before answering the question. Give me about 30 seconds to do
6 that.

7 THE COURT: Yes. We have other questioners. Now,
8 what is Ms. Goude's availability? Is this the only time she's
9 available?

10 MR. MAYSONETT: My understanding, Your Honor, was
11 that Ms. Goude was not available next week. She was -- that's
12 my understanding.

13 THE WITNESS: I'm available tomorrow.

14 THE COURT: You're available tomorrow. Well, we
15 have --

16 THE WITNESS: Right.

17 THE COURT: -- a problem tomorrow and so we're not
18 going to be in session. You're not available next week?

19 THE WITNESS: Huh-uh.

20 THE COURT: All right. We're not going to get this
21 examination completed this evening because we don't
22 have -- essentially we've got four more parties to
23 cross-examine. I guess three that would have cross. And your
24 remaining questioning will take what?

25 MR. WALL: Well, that depends how quickly we get them

1 answered. I think realistically could take a half an hour.

2 THE COURT: All right. What's your estimate, Mr.
3 Lee?

4 MR. LEE: Um, give me a second to consult with my
5 co-counsel.

6 THE COURT: Yes. What's your estimate, Mr.
7 Wilkinson?

8 MR. WILKINSON: I would think about 20 minutes, Your
9 Honor.

10 THE COURT: What's your estimate, Mr. O'Hanlon?

11 MR. O'HANLON: Oh, I'm sorry, Your Honor. About 10
12 minutes.

13 MR. LEE: Your Honor, the State of California so far
14 has not found anything in which it wants to cross. We reserve
15 the right, of course, to --

16 THE COURT: That's 50 minutes of examination which
17 would take us to 5:20. And although I would do it, I don't
18 ask my staff to stay after five. They're not set up to do
19 that. They don't plan on doing it. And so I recognize that
20 everybody's traveled here, but that's where we are. I don't
21 think it's feasible that we're going to get this
22 cross-examination completed.

23 MR. O'HANLON: Your Honor, excuse me, I have -- in
24 speaking with Mr. Birmingham. I have one suggestion that may
25 help address this issue. And that is Mr. Birmingham may sit

1 in tomorrow morning to complete the examination of Ms. Goude
2 so that she could be released at that point.

3 THE COURT: All right. I'm certainly willing, so we
4 can at least get Ms. Goude's testimony completed. Can
5 everybody do that?

6 MR. MAYSONETT: Yes, Your Honor.

7 MR. WILKINSON: Yes, Your Honor.

8 MR. BIRMINGHAM: Excuse me, Your Honor, I'm presently
9 not counsel of record. I would necessitate a speaking motion
10 to be associated as counsel and I would require, I presume,
11 the consent of all the parties.

12 MR. LEE: State of California consents.

13 MR. WALL: The plaintiffs would have no objection.

14 MR. MAYSONETT: Your Honor, just a point of
15 clarification. Not expecting to be in trial tomorrow, we
16 rearranged our travel plans. We would expect that we would
17 just complete Ms. Goude's cross-examination tomorrow?

18 THE COURT: That's all. I'm going to estimate it
19 would be an hour. The courtroom deputy seems to be not
20 agitated, but -- indicating that there may be some issues.

21 (Off the record.)

22 THE COURT: Could everybody be here at 9:30 a.m.? I
23 have matters -- we've gone ahead and we adjusted our calendar
24 for tomorrow, I have three matters starting at nine that I can
25 get done, I'm sure, by about 9:30. Will that work? And then

1 my expectation would be that everybody will be out of here by
2 noon because then we have other hearings starting at noon that
3 are going to go into the afternoon for an extended period.

4 MR. MAYSONETT: Your Honor, we did have a 12:30
5 flight.

6 THE COURT: Well, if everybody focuses, we should be
7 able hopefully to get the questioning done before twelve
8 starting at 9:30. That will give us -- the estimate is we've
9 got about an hour left, we should be done by 10:30. So I have
10 criminal matters. I rearranged on the schedule. I've got to
11 take one plea. Thanks to the Ninth Circuit, I can't take that
12 any faster than in 20 minutes based on the questions that I'm
13 required by law to ask. And so no matter how fast I speak.
14 And then the other two matters are very short and so we'll be
15 able to start at 9:30. But as a practical matter, I don't
16 think we can start before then. Unless you want to come, we
17 can start at 8:30 and -- or at 8:15 for that matter and get
18 some questioning in then.

19 MR. MAYSONETT: That would be much advantageous to
20 us, Your Honor.

21 THE COURT: All right. If everybody can make it,
22 let's start at 8:15.

23 MR. LEE: State of California can make it.

24 MR. WALL: Your Honor, the plaintiffs are available.

25 THE COURT: All right. Thank you.

1 MR. MAYSONETT: Thank you, Your Honor.

2 THE COURT: Well then that -- let's address Mr.
3 Birmingham's status.

4 Now, Mr. Birmingham has requested to appear, is it
5 going to be a special appearance or general appearance, Mr.
6 Birmingham.

7 MR. BIRMINGHAM: Special appearance.

8 THE COURT: Special appearance for the purpose of
9 completing the questioning of Ms. Goude only as counsel of
10 record and then that will end his participation of counsel of
11 record in the lawsuit. Does anybody have an objection to
12 that?

13 MR. LEE: No objection.

14 MR. MAYSONETT: No objection.

15 MR. WALL: No objection.

16 MR. WILKINSON: No objection.

17 MR. BUCKLEY: No objection.

18 THE COURT: Hearing none, then Mr. Birmingham is
19 admitted in this case as an additional attorney for San Luis
20 and Delta-Mendota Water Authority and Westlands Water District
21 for the purpose of completing the examination of Ms. Goude.
22 Anything further before we recess?

23 MR. WILKINSON: Only, Your Honor, and maybe we can do
24 this afterwards. Do you want to follow up on this issue
25 relating to the declaration? And then we'll be done. We

1 talked about that just prior to the afternoon recess.

2 THE COURT: Yes. Well, we don't need Ms. Goude for
3 that issue?

4 MR. WILKINSON: No, we don't. I'm sorry.

5 THE COURT: Thank you, Ms. Goude. You may step down.
6 We'll see you at 8:15 a.m. Have a pleasant evening. We will
7 then resume this hearing August 24th, 2007 at 8:15 a.m. And do
8 we need the court reporter, Mr. Wilkinson for your question?

9 MR. WILKINSON: I don't believe so, Your Honor.

10 THE COURT: All right. Thank you, Karen. You are
11 excused.

12 (The proceedings adjourned at 4:40 p.m.)

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