

STATE WATER RESOURCES CONTROL BOARD

PUBLIC HEARING ON AMENDED JOINT PETITION OF THE
IMPERIAL IRRIGATION DISTRICT AND THE SAN DIEGO COUNTY WATER
AUTHORITY FOR APPROVAL OF A LONG-TERM TRANSFER OF CONSERVED
WATER PURSUANT TO AN AGREEMENT BETWEEN IID AND SDCWA, AND
APPROVAL OF CHANGES IN POINT OF DIVERSION, PLACE OF USE AND
PURPOSE OF USE UNDER PERMIT NO. 7643 (APPLICATION 7482).

WEDNESDAY, MAY 15, 2002
9:00 A.M.

BONDERSON BUILDING
SACRAMENTO, CALIFORNIA

REPORTED BY:

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SACRAMENTO, CALIFORNIA

WEDNESDAY, MAY 15, 2002, 9:00 A.M.

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CHAIRMAN BAGGETT: Back on the cross-examination of
Defenders.

Begin with Mr. Gilbert.

MR. GILBERT: None.

CHAIRMAN BAGGETT: Mr. Du Bois.

MR. DU BOIS: No.

CHAIRMAN BAGGETT: Mr. Rodegerdts.

MR. RODEGERDTS: None.

CHAIRMAN BAGGETT: Mr. Rossmann.

MR. ROSSMANN: Yes, sir.

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CROSS-EXAMINATION OF DEFENDERS OF WILDLIFE

BY COUNTY OF IMPERIAL

BY MR. ROSSMANN

MR. ROSSMANN: Good morning, Mr. Schade. I should know
your pronunciation by now. Thank you very much for lending
your experience to our proceeding.

You are familiar with this Board's determination in the
Mono Lake case, you were a witness in that proceeding?

MR. SCHADE: Yes, I was.

MR. ROSSMANN: In that proceeding did this Board look
at baseline conditions of 1941 as well as present conditions

1 in 1994?

2 MR. SCHADE: I believe they did.

3 MR. ROSSMANN: You stated yesterday that Salton Sea
4 could be compared in some respects to both Mono Lake and
5 Owens Lake; is that correct?

6 MR. SCHADE: Yes.

7 MR. ROSSMANN: Can you draw a distinction between those
8 two? Are there some aspects which the Salton Sea may be
9 more like Mono Lake than Owens Lake?

10 MR. SCHADE: I would say -- what I am thinking about
11 the comparison, the thing about Mono Lake, it is not a
12 shallow lake like Owens and Salton Sea. But on the east and
13 west shores of Salton Sea you have fairly steep shorelines.
14 So the east and west shorelines of Salton Sea remind me very
15 much of the shorelines at Mono Lake. They are steeper,
16 tended to have more sandy material rather than the clays and
17 silt the you see in the flat areas. So that Owens Lake has
18 very few areas that are steep as the east and west shores of
19 Salton Sea or Mono.

20 MR. ROSSMANN: How about the rates of recession of the
21 water decline as a result of decisions to divert water or
22 not?

23 MR. SCHADE: The Los Angeles Aqueduct was actually
24 brought on line by the City of Los Angeles in 1913. They
25 didn't really start diverting a significant amount of water

1 till 1917. In 1913 that corresponded with a fairly wet
2 period in Los Angeles. So even though the aqueduct was
3 completed and there were some diversions, they started in
4 diversions in earnest in 1917.

5 By 1926 or so the lake was essentially like it is
6 today, not completely dry but a remnant brine pool in the
7 summer. The evaporation rate is about five feet a year at
8 Owens Lake, which, according to the testimony I heard
9 yesterday, is similar, maybe a little bit less than
10 evaporation of the Salton Sea.

11 MR. ROSSMANN: That is with the diversions in place,
12 the evaporation rate?

13 MR. SCHADE: The evaporation rate is the same
14 regardless. The evaporation is the evaporation rate. You
15 get a little over five feet at the Salton Sea, according to
16 testimony. At Owens Lake, like this almost was a hundred
17 years ago now, but according to data we have the
18 evaporation is about, was about five feet a year.

19 MR. ROSSMANN: So Owens Lake would naturally evaporate
20 five feet a year, but in its natural condition it would have
21 been replenished by substantially equal amount of water?

22 MR. SCHADE: Exactly. About 300,000 feet a year
23 naturally flowed into the lake and that was balanced by that
24 five feet evaporation.

25 MR. ROSSMANN: How about the recession rate at Mono

1 Lake beginning with Los Angeles' diversions in 1941?

2 MR. SCHADE: It was a lot more gradual than the Owens
3 Lake because, number one, you've got lower evaporation
4 rates. I think more important at Mono Lake is the City of
5 Los Angeles didn't take all of the water that was flowing
6 into Mono Lake. They just brought it out of balance. So
7 rather than the amount going in equaled -- the amount going
8 out always the amount going in. If less is going in, then
9 you have a smaller lake. It was a much more gradual
10 rescission at Mono Lake.

11 MR. ROSSMANN: And would that, therefore, be similar to
12 the experience that is anticipated at the Salton Sea if the
13 transfer goes through as proposed?

14 MR. SCHADE: I don't know how much is proposed to go
15 back into Salton Sea, so I am not qualified to answer that.

16 MR. ROSSMANN: Thank you.

17 How long have you worked for the Great Basin Air
18 Pollution Control District?

19 MR. SCHADE: For almost 12 years.

20 MR. ROSSMANN: Do you know when the air quality issue
21 was first identified to the City of Los Angeles with a
22 request to do something about it?

23 MR. SCHADE: I believe -- well, the dust storms started
24 immediately in the '20s, as the lake receded. There was no
25 Clean Air Act. There were no regulations that prevented

1 something like that. It was really with the passing of the
2 Clean Air Act in the early '70s that people started to think
3 about it.

4 It was actually the China Lake Naval Weapons Center
5 which is south of -- a Naval test base south of Owens Lake.
6 They found that that base was set there, established there
7 in the '50s, because it had extremely clean air, and the
8 Navy was interested in doing a video of their weapons, of
9 their missiles. And they found that more and more they were
10 required to shut their operations down because of all this
11 dust in the air. They were the ones -- that hired some
12 consultants in the early '80s to quantify the problem,
13 determine how, why the dust was blowing, and come up with
14 some potential solutions to that. Kind of an
15 acknowledgement of the problem led to -- it's a long story
16 -- led to a law being passed by the State of California that
17 then gave our district, the Great Basin Air Pollution
18 Control District, the assignment, essentially, of coming up
19 with the solution.

20 MR. ROSSMANN: Actually was Pierre St. Arman, he was
21 one of the consultants hired by the Navy?

22 MR. SCHADE: Dr. St. Arman was the Navy's main
23 consultant in those early days.

24 MR. ROSSMANN: When did the County of Inyo or the Great
25 Basin Air Pollution Control District, if you know, first

1 request the City of Los Angeles to address this problem?

2 MR. SCHADE: The Great Basin Air Pollution Control
3 District has, as do a lot of California air pollution
4 control districts, has a regulation that says you can't --
5 they can't issue a permit to you for a facility, a
6 potentially air polluting facility, if you have another
7 facility that doesn't meet air quality standards. The City
8 of Los Angeles came to the district in the early '80s, say
9 1983, and submitted application for a geothermal well, a
10 geothermal development they wanted to down in the coastal
11 range. The district turned them down, said, "We can't give
12 you a permit because you have a facility that is not meeting
13 air quality standards."

14 They said, "What do you mean a facility?" And the
15 Great Basin, "Well, your aqueduct is -- we consider that to
16 be a facility. The Owens Valley is your water factory and
17 Owens Lake is your smoke stack and until you take care of
18 the problem we can't give you a permit."

19 The City of Los Angeles didn't take that very well.
20 They went to the Legislature and said, "We are going to get
21 our water gathering activity exempted from any air quality
22 permit requirements." They went to the Legislature, and
23 they indeed got exempted from permit requirements. But in
24 return what they got was this little Great Basin Air
25 Pollution Control District was given the authority to assess

1 them for research and testing to determine how to fix the
2 problem and was also given the authority to order them to
3 fix the problem once a plan had been prepared. That is kind
4 of how we got involved.

5 MR. ROSSMANN: Isn't it true that County of Inyo had
6 been asking Los Angeles back in the 1970s to address this
7 problem?

8 MR. SCHADE: Yes. But really had no leverage over the
9 city at that point.

10 MR. ROSSMANN: When did the Great Basin Air Pollution
11 Control District adopt its plan that was the subject of your
12 testimony?

13 MR. SCHADE: We adopted our plan in 1998.

14 MR. ROSSMANN: The Air Resources Board, the California
15 Air Resources Board then had a role after you adopted that
16 plan; is that correct?

17 MR. SCHADE: They actually had a role before we adopted
18 the plan as well.

19 MR. ROSSMANN: Could you explain that, please?

20 MR. SCHADE: The same law that allows us to assess the
21 City of Los Angeles, they realized that an arbiter needed to
22 be put in place and Air Resources Board has the ability --
23 the law says that we have the ability to assess the City of
24 Los Angeles for reasonable costs associated with developing
25 control measures, and reasonable was to be determined by the

1 Air Resources Board. So the law allows for Great Basin or
2 allows the City of Los Angeles to appeal an order from Great
3 Basin to the Air Resources Board. When we adopted our plan,
4 it was a very large plan, was going to cost the City of Los
5 Angeles a lot of money. They didn't take very lightly to
6 that. They actually appealed our plan to the Air Resources
7 Board, and they also filed a lawsuit on our EIR.

8 We had a hearing before the Air Resources Board before
9 we actually got the plan approved.

10 MR. ROSSMANN: What was the vote at the hearing of the
11 Air Resources Board?

12 MR. SCHADE: It was a tie vote.

13 MR. ROSSMANN: How was that tie broken?

14 MR. SCHADE: The Air resources Board told us in no
15 uncertain terms that if we came back to them it may not --
16 we may either -- both sides, either side may not get the
17 answer that it wanted. It encouraged us to go and negotiate
18 a solution that was acceptable to both parties before we
19 went back at the ARB.

20 MR. ROSSMANN: So, it be would be fair to say that it
21 was tooth and nail fighting all the way?

22 MR. SCHADE: Tooth and nail fighting. They withheld
23 our money. We were talking about working out of our
24 garages. We filed a lawsuit against them to force them to
25 pay us the money. It was tooth and nail. That is a good

1 term.

2 MR. ROSSMANN: Are either of those lawsuits you
3 mentioned active today?

4 MR. SCHADE: We settled it. That is part of the
5 agreement that we came to with the City, we settled all the
6 pending lawsuits.

7 MR. ROSSMANN: Is it fair to say that but for the
8 leadership, if that is the right word, in a four to four
9 vote, instead of solving the problem, you and the City of
10 Los Angeles, you may well still be in litigation today?

11 MR. SCHADE: I expect that would have been the case.

12 MR. ROSSMANN: That is kind of natural, isn't it, the
13 City of Los Angeles had built up expectations over the
14 decades that they are going to be able to take that water?

15 MR. SCHADE: Yes, yes. They had done it for so long
16 that they didn't consider anything else was even possible.

17 MR. ROSSMANN: So in light of that, as an air pollution
18 control district officer, would it be your opinion that the
19 time to address these air quality issues is in advance of
20 expectations being fixed by potential diverters of water?

21 MR. SCHADE: Absolutely.

22 MR. ROSSMANN: Mr. Chairman, thank you very much.

23 I have no further questions.

24 CHAIRMAN BAGGETT: Thank you.

25 Mr. Doyle, National Wildlife.

1 Sierra Club, is anybody here?

2 Ms. Douglas.

3 MS. DOUGLAS: Yes.

4 ----oOo----

5 CROSS-EXAMINATION OF DEFENDERS OF WILDLIFE

6 BY PLANNING AND CONSERVATION LEAGUE

7 BY MS. DOUGLAS

8 MS. DOUGLAS: Mr. Schade, if we could begin, please,

9 with Defenders Exhibit 24.

10 Do you have that in front of you?

11 MR. SCHADE: Yes, I do.

12 MS. DOUGLAS: Could you tell me what this chart

13 depicts?

14 MR. SCHADE: That is a series of charts.

15 MR. OSIAS: I will get it. I am sorry to interrupt.

16 MR. SCHADE: Actually a series of charts from the EPA.

17 The EPA has a system called the Aerometric Information

18 Retrieval System or AIRS. What they do is the air pollution

19 control districts throughout the country enter their air

20 quality data into that system. That is a printout for 2001,

21 2000 and 1999 for the highest measured PM-10 violations in

22 both United States, which is the first three charts, and

23 also for California.

24 MS. DOUGLAS: Let's start with the charts for the

25 United States, then. If you can help me sort of walk

1 through this.

2 It appears that the highest violator is Inyo County.
3 Is that in the country?

4 MR. SCHADE: You're talking about 2001 here?

5 MS. DOUGLAS: Yes.

6 MR. SCHADE: Yes. Those are national PM-10 values.
7 From all the hundreds, if not thousands of PM monitors
8 throughout the country, this is a ranking by the first -- if
9 you look at the chart, the column that says 24-hour values.
10 They are ranked by the first maximum, which is the highest
11 read at that site in that particular year.

12 MS. DOUGLAS: So high is this over air quality
13 standards, the first maximum value that is 20,750?

14 MR. SCHADE: 20,750. The standard is 150. So the --

15 MS. DOUGLAS: The standard is 150?

16 MR. SCHADE: Over 130 times the standard. In fact,
17 when we first started entering data in the air system EPA,
18 it only made provisions for four digits. They had to modify
19 their program so we can get five digits of PM-10 in.

20 MS. DOUGLAS: Moving down the chart, I see we've got
21 Inyo. Then we've got Mono County.

22 MR. SCHADE: Yes. Number three is a Mono County
23 value.

24 MS. DOUGLAS: Are these sort of a one-time, 24-hour
25 exceedances?

1 MR. SCHADE: Yes. This is -- we run from midnight to
2 midnight, and you can see the number of observations.
3 Sometimes you run -- some monitors aren't set up to run
4 every day. But we run midnight to midnight, and you can see
5 that, like, Mono there is 4,482, was the high at that site.

6 MS. DOUGLAS: And again, the standard is 150?

7 MR. SCHADE: The standard is 150.

8 MS. DOUGLAS: Where do you see either Imperial or
9 Riverside Counties in this chart? Do they appear?

10 MR. SCHADE: Calexico down at No. 13 and also Calexico
11 at 14, Calexico, which is Imperial, Calexico at 18. I am
12 not seeing any Riverside there.

13 MS. DOUGLAS: There is -- actually California is then
14 -- either Inyo or Imperial County make you up the top 14 in
15 the nation?

16 MR. SCHADE: Yes. California is well represented in
17 the dustiest places in the country.

18 MS. DOUGLAS: Imperial County down here at No. 18.
19 That is Calexico again?

20 MR. SCHADE: Yes.

21 MS. DOUGLAS: If you could, could you walk us through
22 the 2000 and '99, are they about the same?

23 MR. SCHADE: Similar there. You can see that Inyo
24 County, Mono County for 2000 here again very high. We have
25 a north Las Vegas thrown in. Down at 10 is Calexico. Few

1 more North Las Vegas. 1999, very similar. See the same
2 culprits kind of throughout.

3 MS. DOUGLAS: In your opinion, why is it that PM-10 is
4 so high in these three counties?

5 MR. SCHADE: I really can't speak to Riverside County
6 or -- I'm sorry, Imperial County, but Inyo and Mono those
7 are -- all those high values are associated either with
8 Owens Lake for Inyo County or Mono Lake for Mono County.

9 MS. DOUGLAS: Let's go, if we could, to the charts for
10 California, which are further along in Exhibit 24.

11 MR. SCHADE: Starts at 2001 for just ranking
12 California, the California sites.

13 MS. DOUGLAS: If you could walk us through this chart.
14 It looks like -- maybe you could elaborate, but again Inyo
15 and Mono County and Imperial County are the top violators
16 within California.

17 MR. SCHADE: Yes. Although we see -- for 2001 we see
18 Riverside County, Indio --

19 MS. DOUGLAS: Where?

20 MR. SCHADE: No. 19.

21 MS. DOUGLAS: How far is Inyo from the Salton Sea?

22 MR. SCHADE: I don't know the exact miles, but it is on
23 the northeast corner of the Salton Sea, probably less than
24 ten, 15 miles away.

25 MS. DOUGLAS: Let's look quickly at the exceedance

1 numbers. I guess the top number, this is the same, the
2 20,750, right?

3 MR. SCHADE: Yes.

4 MS. DOUGLAS: Does this basic pattern change in 2000 or
5 1999?

6 MR. SCHADE: No. For as long as we've been measuring,
7 which is the PM-10 value -- the PM-10 standard came into
8 place in 1987 or '88. And every year Mono or Owens Lake has
9 had the highest readings in the country.

10 MS. DOUGLAS: So the 150 standard, what does it mean
11 UV\M3?

12 MR. SCHADE: That is micrograms per cubic meter.

13 MS. DOUGLAS: Is that a health-based standard?

14 MR. SCHADE: Yes. EPA sets the PM standard, sets all
15 the criteria pollutant standards based on health studies.
16 With respect to PM-10 it is not what it is made up of, just
17 the fact it is fine dust.

18 MS. DOUGLAS: To your knowledge, what are some of the
19 health effects of PM-10?

20 MR. SCHADE: One of biggest health effects of PM-10 is
21 that it exacerbates existing respiratory conditions. If
22 you're old or if you're young, or if you have asthma or
23 emphysema, something like that, then you are particularly at
24 risk. The EAP sets those criteria pollutant standards based
25 on these risk populations.

1 So if you're an old person or if you are a child, it is
2 likely that you will have some kind of health effect at
3 150. They also set what is called -- they set a level that
4 is not actually officially, but a level at which you would
5 expect health effects from even healthy people. That I
6 believe currently is about 600 micrograms per cubic meter.
7 That means even people in great shape start to suffer at
8 600.

9 MS. DOUGLAS: It is my understanding that sort of
10 sensitive populations include also exercising people; is
11 that correct?

12 MR. SCHADE: Yes. If you are out in one of these
13 storms over 150 you are having health effects. Whether or
14 not those health effects have any kind of a long-term impact
15 on you has to do with how often you are out in it, for
16 instance.

17 MS. DOUGLAS: So we've gotten the standard of 150 that
18 has health effects. If there is an acute event that happens
19 once at 20,750, for example, is that a level that can have
20 health effects, perhaps long-term in healthy people not at
21 risk?

22 MR. SCHADE: Absolutely, yes. That high -- when we
23 work at Owens Lake we are all required to carry full face
24 respirators. If you get stuck in one of these storms and
25 have a respirator, you will have immediate health effects.

1 You may not make it up. You're to a point where there is
2 more dirt in the air than oxygen. It's impossible to
3 describe to a group of people sitting in a clean room.

4 MS. DOUGLAS: At what point, maybe given -- at what
5 concentration would you put your respirator on?

6 MR. SCHADE: It's difficult to judge concentration when
7 you are out in the field, but 600 -- at 600 Great Basin
8 staff has been instructed to leave the Owens Lake area, get
9 out of the air. We have an office in a town called Keeler
10 which is on the east side of the lake, that is where our
11 Owens Lake office is. Those employees at 600 are told to go
12 home.

13 MS. DOUGLAS: So they are told to go home. So it is
14 below 600 that you put a respirator on and continue with
15 your work?

16 MR. SCHADE: You should have a respirator on at over
17 150 because that is the standard.

18 MS. DOUGLAS: In your direct testimony you went through
19 sort of a rough quantitative analysis of potential
20 exceedances from the Salton Sea or potential PM-10 from the
21 Salton Sea.

22 Could I ask you to go through that again with us just
23 as you did a couple calculations?

24 MR. SCHADE: As I mentioned in my testimony, I lead off
25 by saying at the risk of oversimplifying the many

1 complicated factors. Modeling of this can be done.
2 Modeling the potential emissions, I believe, should have
3 been done by the AR consultant. Given the information that
4 I had in the short period of time, I did a very crude
5 estimate of what you might see in the way of dust levels,
6 and essentially took 78 square miles or about 50,000 acres
7 that potentially could be exposed, and said that even if it
8 were one-tenth to one-one-hundredth, if the amount of dust
9 or the emission rates were only 1 to 10 percent at Salton
10 Sea, what they were at Owens Lake, because the exposed area
11 is up to twice as much, you would see 1 to 10 percent of our
12 maximum values at Owens Lake multiplied by twice the
13 material, multiplied by two.

14 MS. DOUGLAS: What does that get?

15 MR. SCHADE: You would see between 300 and 4,000
16 micrograms. Even at the 1 percent level you are over the
17 150.

18 MS. DOUGLAS: You're still over 150 and well above or
19 very close to the threshold of where your staff was told to
20 leave the Owens Lake area?

21 MR. SCHADE: Yes, especially if it is 4,000. It's --
22 one of the things that there may be a misconception that at
23 Owens Lake, this lake is dried up and there is 35 square
24 miles exposed, and when the wind blows and dust comes off
25 all 35 square miles, it takes much less than 35 square miles

1 to cause an exceedance.

2 The 20,000 values that we looked at in the table there,
3 those values come off an area that is open nearly all the
4 time, is rarely if ever crusted with protective salt crusts.
5 Those values come off of an area probably six to eight
6 square miles. So an area as little as six to eight square
7 miles can give you these 20,000 micrograms readings, doesn't
8 take a lot of area to generate a lot of dust.

9 In fact, a kind of rule of thumb that I use to explain
10 to people, if you have one square mile exposed, that is 640
11 acres, and you get one millimeter of material blowing off
12 that area, then you have about 5,000 tons of material that's
13 been emitted. So it adds up pretty quickly. These are vast
14 areas.

15 MS. DOUGLAS: You get how many tons?

16 MR. SCHADE: 5,000 tons of material. Not necessarily
17 PM-10. If you removed a millimeter of dirt from the
18 surface, some of which is PM-10, you get 5,000 tons of
19 material removed from the site.

20 MS. DOUGLAS: You mentioned briefly crust, and we have
21 discussed the potential of a crust forming on parts of the
22 Salton Sea. Also is there a crust that forms sometimes at
23 Owens Lake?

24 MR. SCHADE: Oh, yes.

25 MS. DOUGLAS: Are they stable or do they get eroded

1 away sometimes?

2 MR. SCHADE: The Great Basin research, the Great Basin
3 staff that works at Owens Lake is to salt crust what Eskimos
4 are to snow. There is something like 20 or 40 different
5 types of snow that Eskimos have. We have about 20 different
6 terms for the crust that forms naturally at Owens Lake.
7 They can be very hard and very durable. If you take some
8 people out there in the summer, when the summer crusts form,
9 it is very difficult to get a shovel through this stuff.
10 But with a little bit of moisture and temperature change,
11 these winter crusts form which are very fluffy and
12 fluorescent. We have crusts called rain crust, cauliflower
13 crust, the puffy crust. We have lots of terms that we have
14 kind of standardized for our own use when talking about a
15 crust so the rest of us really know what the other ones are
16 talking about.

17 MS. DOUGLAS: If there is a high wind event and a lot
18 of sand blowing around, how long can it take to erode a
19 crust?

20 MR. SCHADE: Loose sand is the enemy of salt crust.
21 Even the most durable salt crust will be abraded by what is
22 called saltating sand. Saltation has nothing to do with
23 sand. Saltation is a term that is used for sand size
24 particles bouncing across the surface. When the wind comes
25 up, I think as I mentioned in my testimony yesterday, the

1 first sized particles to move are generally these fine
2 sands.

3 What happens is that they are not actually PM-10. They
4 are too large to be considered PM-10. But as they saltate,
5 first they start to roll and then they start to bounce.
6 Then they actually take pretty long bounces, sometimes on
7 the order of ten feet. These sand particles bounce a lot.
8 As they impact the surface, it's that salutation impaction
9 that causes the salt crust to break up. It causes maybe an
10 otherwise confident clay crust or clay surface that is
11 formed to break up. It is the loose sand that is really
12 responsible for the initiation of a lot of these dust
13 storms. Once the salt crust is gone, you've got this
14 fluffy, completely unstable material underneath it, and then
15 the dust gets really bad after that.

16 MS. DOUGLAS: So let's say there was a hard crust and
17 there came along a big sand storm that knocked out the
18 crust, say parts of the lake surface or dry lake bed
19 surface. What has to happen for a stable crust to form
20 again? Does it just form again? Does it have to rain or
21 how would a crust form again?

22 MR. SCHADE: Typically would have to have some kind of
23 moisture. Sometimes it is moisture from below, if it is in
24 an area where you've got high groundwater. But in much of
25 the lake bed the groundwater is too deep for those crusts to

1 form, at least quickly. They might form over a year or so.
2 What typically causes those stable crusts to then reform is
3 precipitation, of which we get about four inches a year.

4 MS. DOUGLAS: I believe we heard testimony that in the
5 Salton Sea area you get two and half inches a year?

6 MR. SCHADE: Yes.

7 MS. DOUGLAS: Of rain.

8 Once a salt crust is, say, abraded or destroyed by
9 sand, it could be -- you might have to wait until it rains
10 again for the crust to form?

11 MR. SCHADE: Yes. Or for the winds to stop blowing.
12 At Owens lake we have a very definite wind season. We don't
13 get sustained, high winds generally during the summer. We
14 also get these summer crusts. These crusts form differently
15 under high temperatures forming. So we will have September
16 through the middle of June is considered our dust season,
17 and that is mainly because the winds die off during the
18 summer.

19 MS. DOUGLAS: Final topic here. We have talked a bit
20 about the lack of quantitative model in the EIR/EIS, right?

21 MR. SCHADE: Yes.

22 MS. DOUGLAS: You weren't here for the day of
23 testimony, but let me ask it this way: What would your
24 reaction be if I were to tell you that, I am about to, that
25 the CH2MHill consultant who sat where you are now had told

1 us CH2MHill didn't do any quantitative analysis of potential
2 air effects from a dried up Salton Sea bed because it was
3 difficult?

4 MR. SCHADE: The fact that CH2MHill said that, I guess
5 I'm going to have to say it disappointments me. Because we,
6 Great Basin, is working and has been working with the City
7 of Los Angeles' consultant at Owens Lake, which also
8 happens to be CH2MHill. And the work we are doing modeling
9 PM-10 emissions from Owens Lake is -- nobody's ever done
10 anything like it. It's absolutely state of the art, cutting
11 edge, very sophisticated, very expensive monitoring on the
12 lake bed to find out which areas move and why and when and
13 under what kind of meteorological conditions. We have taken
14 that information, and we've developed some very
15 sophisticated PM-10 models. It's the scientists at CH2MHill
16 who have worked with us and are really shadowing us on all
17 that, making sure that we are doing it right.

18 If anybody other than Great Basin were doing -- were to
19 be -- if I were to pick anyone other than Great Basin to do
20 an air quality modeling, it would have to be the scientists
21 at CH2MHill because they are so familiar with dust emissions
22 from another dry lake bed.

23 MS. DOUGLAS: So, to get it straight, you are saying
24 that the scientists at CH2MHill, are they the ones that did
25 your quantitative model?

1 MR. SCHADE: No. They are critiquing our quantitative
2 model. They work for the City of Los Angeles and are
3 interested in making sure what we come up with is indeed the
4 right answer. Because this -- the results of this modeling
5 will dictate the City of Los Angeles which areas of the lake
6 have to be fixed, and it's very expensive. We actually have
7 gridded the lake into square kilometers of about a half
8 square mile. It is very expensive. Every kilometer, every
9 square mile that is added adds many millions of dollars to
10 the City's obligations at Owens Lake. The CH2MHill
11 scientists, the City hired them because of their expertise
12 have worked very closely or actually have observed us very
13 closely in the air modeling that we do.

14 MS. DOUGLAS: You say at least that they have observed
15 and understand what you are doing and should probably know
16 how to do this kind of analysis?

17 MR. SCHADE: Yes. And was disappointed that they
18 didn't apply more of that knowledge to the EIR that they put
19 together for the Salton Sea.

20 MS. DOUGLAS: Thank you.

21 Thank you, Mr. Chairman.

22 I have no further questions.

23 CHAIRMAN BAGGETT: Thank you.

24 Audubon.

25 Is Mr. Kirk here, Salton Sea?

1 I guess we are down to Mr. Slater. Seeing the Tribes
2 aren't present yet.

3 ---oOo---

4 CROSS-EXAMINATION OF DEFENDERS OF WILDLIFE

5 BY SAN DIEGO COUNTY WATER AUTHORITY

6 BY MR. SLATER

7 MR. SLATER: Morning, Mr. Schade.

8 MR. SCHADE: Morning.

9 MR. SLATER: I have a few questions for you. I would
10 like to start with what I understand your testimony to be,
11 is that the Water Board should deny that license allowing
12 water diversions until the proponents can approve that they
13 will not create an Owens lake for the 21st century. Do you
14 remember making that statement?

15 MR. SCHADE: Yes, I actually do.

16 MR. SLATER: I assume you meant the petition for
17 change now that presently is in front of this Board,
18 correct?

19 MR. SCHADE: Yes.

20 MR. SLATER: By listening to your testimony, am I
21 correct in understanding that the concern is that this
22 transfer would somehow create something akin to Owens Lake
23 in the form of a dry lake or a dust bowl?

24 MR. SCHADE: A drier -- the concern is that sediments
25 that are currently inundated with water would become dried

1 and available to be blown by the wind.

2 MR. SLATER: That is on the basis of evaluating the
3 surface area that would be exposed, correct?

4 MR. SCHADE: Yes.

5 MR. SLATER: With regard to the Owens' condition, that
6 was created by the City of Los Angeles, correct?

7 MR. SCHADE: Yes, it was.

8 MR. SLATER: That was undertaken pursuant to a
9 diversion by the City of Los Angeles, correct?

10 MR. SCHADE: Yes, it was.

11 MR. SLATER: That cut off the inflow into Owens Lake.
12 Am I right?

13 MR. SCHADE: Yes.

14 MR. SLATER: That occurred in roughly 1913?

15 MR. SCHADE: Yes. That is when the aqueduct was
16 completed.

17 MR. SLATER: Was there any permitting of the initial
18 diversion by the State Board or its then predecessor in
19 interest?

20 MR. SCHADE: No, there wasn't. I don't believe there
21 was a State Board.

22 MR. SLATER: In fact, it predated the Water Code,
23 didn't it?

24 MR. SCHADE: Yes, it did.

25 MR. SLATER: Consequently there was no CEQA analysis,

1 right?

2 MR. SCHADE: No, there wasn't.

3 MR. SLATER: Essentially, Los Angeles did pretty much
4 what it wanted to do, right?

5 MR. SCHADE: Yes.

6 MR. SLATER: I've heard it said that they sort of
7 reaped what they sowed. Do you think that is a fair
8 statement?

9 MR. SCHADE: I don't know that it is, no.

10 MR. SLATER: Well, in any event it is not 1913
11 anymore?

12 MR. SCHADE: No.

13 MR. SLATER: It is 2002, and we live in a regulated
14 environment.

15 MR. SCHADE: Would hope so.

16 MR. SLATER: Now, which aspects of the transfer,
17 assuming that the regulatory agencies and the proponents of
18 the transfer want to do the right thing, which aspects of
19 the transfer causes the impact that you are concerned
20 about?

21 MR. SCHADE: You know, anything that would cause any
22 action that would cause the Sea to shrink in size and expose
23 sediments. Any action taken by anybody. You've got a
24 system here that is fairly stable now. I see areas around
25 the Salton Sea that, number one, remind me of Owen Lake and,

1 number two, where I've actually seen wind damage on the
2 crust that's formed. Any action taken by anyone to expose
3 more of that sediment.

4 MR. SLATER: That is a single constant, is the balance
5 of the components of the transfer variable, it doesn't
6 really matter so long as the inflow to the Sea is
7 protected?

8 MR. SCHADE: No. As long as the sediments aren't
9 exposed.

10 MR. SLATER: As long as the sediments aren't exposed.
11 Okay.

12 Are you familiar with HCP No. 2 and Alternative 4 to
13 the EIR/EIS?

14 MR. SCHADE: Vaguely. I actually reviewed the air
15 quality sections of the EIR and really purposefully didn't
16 spend a lot of time reviewing anything other than THE air
17 quality section.

18 MR. SLATER: Is it your testimony then that if the
19 conservation program employed would not expose the
20 sediments, that your concerns would be predominantly
21 addressed?

22 MR. SCHADE: Absolutely.

23 MR. SLATER: No further questions.

24 CHAIRMAN BAGGETT: Thank you.

25 Mr. Osias.

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CROSS-EXAMINATION OF DEFENDERS OF WILDLIFE
BY IMPERIAL IRRIGATION DISTRICT
BY MR. OSIAS

MR. OSIAS: Good morning, Mr. Schade.

MR. SCHADE: Good morning.

MR. OSIAS: Let me start with the material that you did review just to make sure we looked at it with the same eye. You received a hard copy of the whole EIR/EIS or just the air section?

MR. SCHADE: Just the air section.

MR. OSIAS: Who gave that to you?

MR. SCHADE: I actually got it off the Internet.

MR. OSIAS: Who asked you to do that?

MR. SCHADE: Defenders of Wildlife.

MR. OSIAS: They told you where to find it or you already knew?

MR. SCHADE: I already knew because I had been actually working with the Salton Sea Science Office for a year or so. They came up to visit us and we came down to visit them.

MR. OSIAS: So it was just that chapter that you looked at?

MR. SCHADE: It is actually a couple chapters.

MR. OSIAS: Did the sections you looked at identify the

1 authors of those sections?

2 MR. SCHADE: No. But I did look to see -- I did look
3 in the list of preparers to try to determine who prepared
4 them.

5 MR. OSIAS: Were you able to do that?

6 MR. SCHADE: Sort of. It wasn't real apparent in the
7 document.

8 MR. OSIAS: So do you know if the scientists, if I call
9 them that, at CH2MHill who are doing the consulting work on
10 the EIR for the mitigation that is going on Owens consulted
11 on this EIR?

12 MR. SCHADE: I actually asked the people at CH2MHill
13 that I work with at Owens Lake whether or not that had
14 anything to do with this, and they said they had.

15 MR. OSIAS: That they had?

16 MR. SCHADE: That they had.

17 MR. OSIAS: That was a positive response, in your mind,
18 correct, because they are the ones who, I think you said,
19 would know the most?

20 MR. SCHADE: I would think it would be positive, but,
21 like I said, I was a bit disappointed that they didn't use
22 more of the knowledge that I felt they had in coming up with
23 something other than a page and a half of description.

24 MR. OSIAS: It's very easy to be a witness who wants to
25 say something even if it is not in response to the question.

1 All I was really asking is whether you were pleased to
2 hear that they had been involved, not grading the output
3 yet. So you were -- you would have been disappointed had
4 they said, "Oh, no, nobody talked to us"?

5 MR. SCHADE: Yes.

6 MR. OSIAS: In that sense the response was positive,
7 they worked on it?

8 MR. SCHADE: Yes.

9 MR. OSIAS: Thank you.

10 Try to keep that in mind as I ask you questions. You
11 will have a chance for Mr. Fletcher to ask you lots more
12 questions if I don't get to an area that you want to talk
13 about.

14 MR. SCHADE: All right.

15 MR. OSIAS: The problem that CH2MHill is working on
16 currently and recently regarding Owens is how to mitigate an
17 existing PM-10 problem, correct?

18 MR. SCHADE: Yes.

19 MR. OSIAS: And the problem they looked at for the
20 EIR/EIS for the transfer was how to predict what might
21 happen from a reduction of inflows to the Salton Sea,
22 correct?

23 MS. SCHADE: Yes.

24 MR. OSIAS: They weren't trying to solve an existing
25 problem. They were trying to first predict what problem

1 would result and then also then predict, if they could, how
2 to solve that problem?

3 MR. SCHADE: I believe so.

4 MR. OSIAS: Those are different kinds of analysis, are
5 they not?

6 MR. SCHADE: Not necessarily.

7 MR. OSIAS: At least for Owens Lake they didn't have to
8 make any reduction about what the problem is?

9 MR. SCHADE: No. We had a very obvious problem.

10 MR. OSIAS: Nor did they have to predict the evolution
11 of the problem, the timing over which it would develop?

12 MR. SCHADE: No.

13 MR. OSIAS: It was fully realized?

14 MR. SCHADE: Fully developed.

15 MR. OSIAS: So in that sense at least the current
16 situation at Salton Sea is different?

17 MR. SCHADE: Yes.

18 MR. OSIAS: You have been involved in probably one of
19 the most significant air pollution problems in the nation
20 now for 11 years?

21 MR. SCHADE: Yes.

22 MR. OSIAS: And it is that background that you bring to
23 your testimony, right?

24 MR. SCHADE: Yes.

25 MR. OSIAS: I think you testified that you were

1 contacted about a year and a half ago to look at the Salton
2 Sea?

3 MR. SCHADE: Yes.

4 MR. OSIAS: That contact was made by Mr. Tom Kirk,
5 correct?

6 MR. SCHADE: I believe I talked to Dr. Milt Friend
7 initially, but we met with the Salton Sea Science Office as
8 well as the Salton Sea Authority. They invited us down to
9 look at their lake.

10 MR. OSIAS: Was it an us or was it you? I'm really
11 sort of picky.

12 MR. SCHADE: There were actually two people from my
13 office that went down the first time. At subsequent times
14 I've taken some other people from my staff down to the
15 Salton Sea.

16 MR. OSIAS: You have been there how many times?

17 MR. SCHADE: I've been there five days three different
18 times. Three times over the -- one time for three days and
19 two times for one day.

20 MR. OSIAS: It is a long distance, is it, from Bishop?

21 MR. SCHADE: Yes.

22 MR. OSIAS: You live up there I suppose?

23 MR. SCHADE: Yes, I live in Bishop.

24 MR. OSIAS: Who showed you around the Salton Sea?

25 MR. SCHADE: The first time it was a group of people

1 from the Salton Sea Science Office, Dr. Milt Friend and Tom
2 Kirk as well as a few people that work with Tom, I believe.
3 The second time it was Dr. Milt Friend by himself; and the
4 third time was in the last few months as part of an air
5 quality subcommittee that the Salton Sea Science Office
6 committee put together.

7 MR. OSIAS: The three-day visit was in 1999?

8 MR. SCHADE: 2002.

9 MR. OSIAS: The three-day was in 2002?

10 MR. SCHADE: Just a few months -- it was two months
11 ago.

12 MR. OSIAS: So the longer visit was the most recent? I
13 had it backwards in my notes.

14 MR. SCHADE: Yes.

15 MR. OSIAS: The shorter visits were the earlier?

16 MR. SCHADE: Were the earlier visits.

17 MR. OSIAS: First visit occurred in what year?

18 MR. SCHADE: A year and a half ago.

19 MR. OSIAS: So '99, 2000?

20 MR. SCHADE: I believe it was probably the beginning of
21 2000.

22 MR. OSIAS: I think you said someone from the Science
23 Office was the first people who contacted you?

24 MR. SCHADE: Yes.

25 MR. OSIAS: Were you aware that the Salton Sea

1 Authority was putting out an EIR/EIS?

2 MR. SCHADE: Yes, I was.

3 MR. OSIAS: Did they ask you to review it before it was
4 released?

5 MR. SCHADE: No, they didn't.

6 MR. OSIAS: Did they draw upon your staff or your
7 expertise in preparing the air quality section of that
8 document?

9 MR. SCHADE: No. I believe -- this is recollection. I
10 believe it was out when I first went down there.

11 MR. OSIAS: Did they give you a copy?

12 MR. SCHADE: No.

13 MR. OSIAS: To this date you don't have that air
14 quality section, correct?

15 MR. SCHADE: No, I've never seen it.

16 MR. OSIAS: They, of course, were interested in impacts
17 to air, you would assume, correct?

18 MR. SCHADE: You would assume.

19 MR. OSIAS: Do you assume that?

20 MR. SCHADE: Yes.

21 MR. OSIAS: Do you know if they looked at air quality
22 impacts for different inflow levels?

23 MR. SCHADE: I do not know that. I've never seen the
24 EIR.

25 MR. OSIAS: If I told you they were mandated to look at

1 air quality impacts for different inflows, including reduced
2 inflows, and that they concluded that there was no
3 significant air quality impacts, would that surprise you?

4 MR. SCHADE: Yes -- well, it wouldn't. Because -- yes,
5 it would. Yes, it would. I'm sorry.

6 MR. OSIAS: Take your time if you want to make up your
7 mind.

8 MR. SCHADE: Yes.

9 MR. OSIAS: And in the number of visits you've had to
10 this day, they've not told you that that was their opinion;
11 is that correct?

12 MR. SCHADE: I don't recall. There have been -- there
13 was -- during our tours at the Salton Sea there were
14 discussions about their EIR. Like I said, I never saw it.

15 MR. OSIAS: Did you ask to see their modeling work for
16 their EIR?

17 MR. SCHADE: No, I didn't.

18 MR. OSIAS: Did you ask if they did modeling?

19 MR. SCHADE: Yes.

20 MR. OSIAS: What did they say?

21 MR. SCHADE: No.

22 MR. OSIAS: And they didn't use or consult with the
23 experts at CH2MHill?

24 MR. SCHADE: I don't know who they consulted with.

25 MR. OSIAS: Did you ask?

1 MR. SCHADE: No.

2 MR. FLETCHER: Can I ask for a second, what's the
3 relevance of this line of questioning?

4 CHAIRMAN BAGGETT: Is that an objection?

5 MR. FLETCHER: Yes. I would object.

6 MR. OSIAS: I view it is an objection, relevance.

7 MR. FLETCHER: Yes, that is what it is.

8 MR. OSIAS: My response is that it goes to some
9 credibility issues with respect to other parties in this
10 proceeding, including the Salton Sea Authority and it goes
11 to the conclusion that he brings to the transfer EIR/EIS
12 that he didn't bring or that no one, in fact, asked him to
13 review, the Salton Sea one. I think that goes to the bona
14 fides of why these objections are being made.

15 CHAIRMAN BAGGETT: Continue.

16 MR. OSIAS: The Owens Lake experience -- actually let
17 me back up.

18 You were asked by Mr. Fletcher if you could compare
19 Owens Lake to the Salton Sea. At least my recollection is
20 that you said quite honestly there are similarities and
21 differences?

22 MR. SCHADE: Yes, there are.

23 MR. OSIAS: You remember saying that yesterday?

24 MR. SCHADE: Yes, I do.

25 MR. OSIAS: Do you remember that Mr. Fletcher worked

1 you through the similarities?

2 MR. SCHADE: Yes.

3 MR. OSIAS: He didn't ask you about the differences, did
4 he?

5 MR. SCHADE: He didn't.

6 MR. OSIAS: So maybe I will do that.

7 MR. SCHADE: That would be great.

8 MR. OSIAS: Thanks.

9 Now, the Owens Lake was fed, I think you said, by about
10 300,000 acre-feet of water?

11 MR. SCHADE: Yes, rough average, rough long-term
12 average.

13 MR. OSIAS: It was then the 300,000, starting maybe
14 about 1917, was fully diverted into the L.A. Aqueduct?

15 MR. SCHADE: Not always every year. As much as they
16 could. Sometimes the flows in the Owens River exceeded the
17 capacity of the Aqueduct.

18 MR. OSIAS: At least for the period that I think you
19 said was 1917 to 1926. Most or virtually all of the flow
20 was diverted?

21 MR. SCHADE: It would be fair to say virtually all.

22 MR. OSIAS: So that sea disappeared in nine years?

23 MR. SCHADE: About nine years.

24 MR. OSIAS: And would you describe, therefore, the
25 exposure of the lake bed as a rather sudden event?

1 MR. SCHADE: Yes.

2 MR. OSIAS: Now, maybe coincidentally there is proposed
3 transfer of 300,000 acres. You are aware of that?

4 MR. SCHADE: Yes.

5 MR. OSIAS: And do you know how much water is proposed
6 to be transferred in the first year?

7 MR. SCHADE: Less than 300,000. I know there is a ramp
8 up.

9 MR. OSIAS: You do know there is a ramp up?

10 MR. SCHADE: Yes, I do now.

11 MR. OSIAS: Do you know what the magnitude of the ramp
12 up is?

13 MR. SCHADE: No.

14 MR. OSIAS: Is that something that one would need to
15 consider in predicting the air quality impact?

16 MR. SCHADE: Not the ultimate air quality impact.
17 Obviously the slower it recedes the slower those air quality
18 impacts would slow themselves.

19 MR. OSIAS: And so the pace of recession of the Sea is
20 relevant?

21 MR. SCHADE: Yes.

22 MR. OSIAS: And the mitigation that you might be able
23 to use might depend on that pace also, correct?

24 MR. SCHADE: Yes, if you decided to put mitigation
25 measures in place.

1 MR. OSIAS: At least you would hope that CH2MHill would
2 have considered the pace of recession?

3 MR. SCHADE: Yes.

4 MR. OSIAS: Because, again, they are in a predictive
5 model, and they have to use this kind of information?

6 MR. SCHADE: Yes.

7 MR. OSIAS: Thank you.

8 If I told you that the first year inflow reduction was
9 only 20,000 acre-feet versus 300-, that would seem to be at
10 least for a first year problem much different than the Owens
11 Lake situation, correct?

12 MR. SCHADE: Yes.

13 MR. OSIAS: If I told you it would take the 23 years
14 before you got to 300,000, that would be materially
15 different than the Owens Lake situation?

16 MR. SCHADE: Only along the way, only 23 years versus,
17 say, nine years. Once they both got to their ultimate, to
18 the end point, they, you know, reduction is reduction.

19 MR. OSIAS: Even if things happen in the meantime?

20 MR. SCHADE: No. If something happened in the
21 meantime, then there would obviously be a difference.

22 MR. OSIAS: If nine years was too fast for something to
23 happen, but 23 years isn't, that would be a material fact,
24 right, in other words?

25 MR. SCHADE: Yes.

1 MR. OSIAS: So, I am not suggesting this, but I will
2 make this up. Maybe I will make it silly so you understand
3 it's just a hypothetical. If vegetation would spring up in
4 a 23-year period that couldn't spring up in a nine-year
5 period, that would be a material fact?

6 MR. SCHADE: If it could, yes.

7 MR. OSIAS: Or if you could help it?

8 MR. SCHADE: Yes. If you were chasing that receding
9 shoreline.

10 MR. OSIAS: Now, the things that -- things is not a
11 very scientific term. I apologize for that.

12 The things that sort of affect the emissiveness of the
13 soil includes temperature?

14 MR. SCHADE: Yes.

15 MR. OSIAS: And, for example, winter temperatures in
16 the Owens Lake Basin average what?

17 MR. SCHADE: I would say low temperatures average in
18 the mid to low 20s.

19 MR. OSIAS: The number of days that the temperature is
20 below freezing?

21 MR. SCHADE: From November through March; say, six
22 months. Not always below freezing, but you would expect to
23 see freezing temperatures.

24 MR. OSIAS: Most of the time.

25 MR. SCHADE: Yes.

1 MR. OSIAS: Maybe that is a understatement to say most.
2 Now at the Salton Sea in the winter the temperature is
3 materially higher than Owens Valley?
4 MR. SCHADE: Yes, it is.
5 MR. OSIAS: The number of days below freezing, do you
6 have any idea what that would be?
7 MR. SCHADE: Very, very few, if any.
8 MR. OSIAS: The number of days where the low
9 temperature for any significant period of time is below 40?
10 MR. SCHADE: Very few.
11 MR. OSIAS: We are not exactly sure what that will do
12 at the Salton Sea because we haven't experienced the PM-10
13 problem yet, like at Owens, but the temperature is relevant
14 to trying to predict that?
15 MR. SCHADE: Yes, it is.
16 MR. OSIAS: Slope of land I think is relevant; is that
17 right?
18 MR. SCHADE: Slope of land?
19 MR. OSIAS: Yes.
20 Relevant for what?
21 MR. OSIAS: Fair enough.
22 You described Mono Lake, Mono Lake; I never know which
23 it is.
24 MR. SCHADE: Mono.
25 MR. OSIAS: I'm dating myself by not having been

1 involved in that.

2 MR. ROSSMANN: In this Board room you better get that
3 one right.

4 MR. OSIAS: The shoreline is steeper in terms of the
5 banks than at Owens?

6 MR. SCHADE: Yes. On an average it is. Mono is a
7 very deep lake.

8 MR. OSIAS: Does that influence the emissivity of
9 PM-10?

10 MR. SCHADE: Yes, it does.

11 MR. OSIAS: I would assume, without being a scientist,
12 that a flat surface could produce more rolling sand
13 particles than a steep surface?

14 MR. SCHADE: Not necessarily. Actually the steepness
15 -- typically, the steeper the soil, the steeper the bed or
16 bank, the coarser the soils you find, because the fine soils
17 don't lodge there as easily as the larger particles do.

18 MR. OSIAS: Because of slope?

19 MR. SCHADE: Because of the slope. So you would expect
20 to see more sand on a steep slope and more clays on a flat
21 slope.

22 MR. OSIAS: So, therefore, you have more small
23 particles to get freed up on the flat slope?

24 MR. SCHADE: Yes.

25 MR. OSIAS: I guess the Salton Sea has both?

1 MR. SCHADE: The Salton Sea has both.

2 MR. OSIAS: Do you know if the slopes -- let's use the
3 flat areas of Salton Sea, which I suppose are the most risky
4 ones for PM-10, correct?

5 MR. SCHADE: Not necessarily, no.

6 MR. OSIAS: Okay. We'll start with the flat areas and
7 then do the steep areas.

8 In the flat areas how does the slope change, if at all,
9 as the Sea withdraws? Do you know?

10 MR. SCHADE: It changes very little. It is very flat
11 and relatively uniform. It is not uniform all the way out,
12 but it does -- the flat areas are very flat.

13 MR. OSIAS: So at least in preparing your testimony you
14 assume that if the Sea withdraws from an area that is
15 currently fairly flat, the entire area exposed will also be
16 flat?

17 MR. SCHADE: Yes.

18 MR. OSIAS: And that the slope didn't change?

19 MR. SCHADE: Based on the bathymetry maps that I've
20 seen, it appears as though it is fairly uniform as you go
21 out in those flat areas.

22 MR. OSIAS: I thought we heard yesterday from Dr.
23 Krantz that, in fact, that wasn't the case and one of the
24 impacts on birds was that there was less shallow areas and
25 flat slopes.

1 Did you hear that?

2 MR. SCHADE: I don't recall that. May have been out of
3 the room.

4 MR. OSIAS: You assumed consistency?

5 MR. SCHADE: Yes.

6 MR. OSIAS: Same on the steep side?

7 MR. SCHADE: Although the steep sides do flatten out as
8 you get towards the bottom. But the steep areas are much
9 narrower than the flat areas as they would have to be.

10 MR. OSIAS: Were you here when you heard about the sort
11 of episodic history of Salton Sea? It would come and it
12 would go.

13 MR. SCHADE: Yes.

14 MR. OSIAS: It would come and it would go?

15 MR. SCHADE: Yes.

16 MR. OSIAS: Sometimes it was totally gone and then it
17 would fill up again?

18 MR. SCHADE: Yes.

19 MR. OSIAS: That history is different than Owens Lake?

20 MR. SCHADE: Owens Lake also had periods of being a
21 very large lake and being not a lake where it was actually a
22 flow through. It was similar in that respect to the Salton
23 Sea. It wasn't part of the ocean, however. It was -- there
24 is a volcanic dam south of Owens Lake that sometimes was
25 high and sometimes was low, and that regulated the depth of

1 the lake.

2 MR. OSIAS: Might the history of the Salton Sea
3 sediments versus the history of Owens Lake sediments be a
4 difference that would have to be taken into account by
5 CH2MHill scientists in predicting the outcome?

6 MR. SCHADE: Absolutely.

7 MR. OSIAS: You didn't have enough information to take
8 that into account yourself?

9 MR. SCHADE: There was very little information on
10 sediments compared to Owens Lake.

11 MR. OSIAS: Rainwater is a factor in creating a crust I
12 think I heard you say?

13 MR. SCHADE: Yes.

14 MR. OSIAS: As is, I suppose, capillary action from the
15 soil?

16 MR. SCHADE: Yes, it is.

17 MR. OSIAS: In your testimony you also identified that
18 rainwater is, in fact, a crust dissolver?

19 MR. SCHADE: It can be, yes.

20 MR. OSIAS: It is not fair to assume that a place with
21 less rainfall will have less crust?

22 MR. SCHADE: No.

23 MR. OSIAS: Which was, I think, sort of the questioning
24 that you were getting before. It depends on whether the
25 rainfall is breaking up the crust or creating the crust,

1 right?

2 MR. SCHADE: Depends on when the rain falls and the
3 conditions, mostly the temperature conditions and weather
4 conditions when the rain falls.

5 MR. OSIAS: Based on your experience, I take it you
6 would recommend that a gradual reduction in inflow take
7 place if you are going to mitigate it rather than a sudden
8 reduction?

9 MR. SCHADE: Not necessarily.

10 MR. OSIAS: You think mitigation would be easier if you
11 withdraw the entire --

12 MR. SCHADE: Well, if you had one big project to do,
13 you have to look at what, number one, the project was, and,
14 number two, how it was implemented. A little bit every year
15 may actually take longer and cost more than, like,
16 essentially what is happening at Owens Lake where the lake
17 is gone. They rush in and these very large projects get
18 installed all at once.

19 MR. OSIAS: Do you know if there are any projections of
20 the Sea declining without a transfer project?

21 MR. SCHADE: No.

22 MR. OSIAS: If the Sea receded without a transfer
23 project, the air quality impacts would be the same for at
24 least that same area of land that was exposed than if it
25 receded because of the transfer project, correct?

1 MR. SCHADE: Yes. As long as the recession was in
2 short a term of geologic time. If the recession took place
3 over thousands of years that would be different than if it
4 took place over tens of years.

5 MR. OSIAS: Assuming we are in the same tens of years?

6 MR. SCHADE: Yes.

7 MR. OSIAS: The reason the inflow is cut off or the
8 reason the Sea recedes doesn't really drive the --

9 MR. SCHADE: No.

10 MR. OSIAS: Got to let me finish.

11 MR. SCHADE: I'm sorry.

12 MR. OSIAS: Because of the reporter.

13 -- doesn't drive the air quality impact?

14 MR. SCHADE: No.

15 MR. OSIAS: I assume as someone who has been involved
16 in EIR litigation and mitigation disputes and noble
17 mitigation goals, that if you were going to do a project
18 that would reduce the inflow and there was going to be a
19 natural reduction in inflow also, you would have two
20 different mitigation problems. One unrelated to the new
21 project and one related to the natural?

22 MR. SCHADE: I don't know that the -- please ask it
23 again.

24 MR. OSIAS: What if we didn't do a transfer project
25 until after the Sea had receded to wherever it was going to

1 go in the nonproject alternative, you would still have to do
2 mitigation presumably for that air quality, correct?

3 MR. SCHADE: Yes.

4 MR. OSIAS: But it wouldn't be on the transfer
5 proponents to do it, would it, because it happened before
6 they even did the transfer?

7 MR. SCHADE: You would think that they didn't cause it,
8 that they wouldn't be responsible for it.

9 MR. OSIAS: In that setting who is responsible for it?

10 MR. SCHADE: That is an answer from the attorneys. I
11 really couldn't answer that.

12 MR. OSIAS: I was thinking more from the air quality
13 control basin, not an air lawyer.

14 Do they have to order somebody to clean that up?

15 MR. SCHADE: Yes. If it is an anthropogenic source of
16 air pollution.

17 MR. OSIAS: You have to tell me what that word means.

18 MR. SCHADE: Man-made source of air pollution.

19 If an action by men, like the diversion of the Owens
20 River and the L.A. Aqueduct causes an air pollution
21 problem, then that diverter is the polluter and is
22 responsible for fixing the problem.

23 MR. OSIAS: Absent that cause, the air basin district
24 has no authority to make someone do it?

25 MR. SCHADE: If it's not anthropogenic, then no.

1 MR. OSIAS: So even though it is a problem, it's not in
2 anyone's lap to solve, probably?

3 MR. SCHADE: Well --

4 MR. OSIAS: Possibly?

5 MR. SCHADE: If it became a huge nuisance problem, for
6 instance, that everyone acknowledged that something needs to
7 be done about, like 20,000 micrograms per meter, then maybe
8 someone would do something about it regardless of who was at
9 fault.

10 MR. OSIAS: I think from the charts we looked at you
11 saw that there was at least some PM-10 issues in Imperial
12 County --

13 MR. SCHADE: Yes.

14 MR. OSIAS: -- unrelated to the Sea?

15 MR. SCHADE: Imperial County is currently nonattainment
16 for the PM-10 standard.

17 MR. OSIAS: Presumably that is not caused by the Salton
18 Sea withdrawals?

19 MR. SCHADE: You wouldn't imagine, no.

20 MR. OSIAS: Isn't it fair to say that there are two
21 sources for that? One is air quality problems coming across
22 the border from Mexicali and the other actually farming
23 activity?

24 MR. SCHADE: Yes.

25 MR. OSIAS: If you don't know --

1 MR. SCHADE: I have reviewed the PM-10 inventory in the
2 EIR. That is what it seems to indicate.

3 MR. OSIAS: Does it sound right?

4 MR. SCHADE: Yes.

5 MR. OSIAS: If we looked at the California list, we saw
6 other farming communities on that list, did we not,
7 Corcoran, Bakersfield, Fresno?

8 MR. SCHADE: Yes.

9 MR. OSIAS: They don't have Salton Sea?

10 MR. SCHADE: No.

11 MR. OSIAS: If we take farmland out of production,
12 leave it idle, could we be contributing to air quality
13 problems?

14 MR. SCHADE: I really -- I don't know. Depends on how
15 you took it out of production.

16 MR. OSIAS: Your testimony here today, either in the
17 written form or in response to questions, did not take into
18 account what the air quality might be from fallowing?

19 MR. SCHADE: No.

20 MR. OSIAS: I suppose that could be analyzed.

21 MR. SCHADE: Yes, I suppose it could be.

22 MR. OSIAS: I suppose CH2MHill would know as much about
23 that as anyone?

24 MR. SCHADE: Yes.

25 MR. OSIAS: Moisture is relevant to the emissivity of

1 PM-10?

2 MR. SCHADE: Very often plays a very large factor in
3 the emissivity.

4 MR. OSIAS: Would lands closer -- sorry, let me back
5 up.

6 You saw, I think yesterday, the sort of annual
7 fluctuation in the elevation of the Sea?

8 MR. SCHADE: Yes. Your charts?

9 MR. OSIAS: Yeah, uh-huh.

10 So we have annual fluctuation and we have a sort of a
11 volatility based on ag need.

12 MR. SCHADE: Yes.

13 MR. OSIAS: Assume those are right, even if
14 hypothetical. Given that, would you assume that the
15 emissivity of the exposed soils closest to the Sea would be
16 less than those farther away from the historic shoreline?

17 MR. SCHADE: Not necessarily.

18 MR. OSIAS: You don't think they'd be, because of
19 their proximity to the shrunken sea, wetter still?

20 MR. SCHADE: If they're wet enough, then they would be,
21 yes. If they were so close that they were so wet that the
22 surface is saturated and remained saturated, even under dry
23 conditions or windy conditions, then, yes, the Sea itself
24 could mitigate, could prevent the emissions from occurring.

25 MR. OSIAS: For some distance?

1 MR. SCHADE: For some distance, yes. Not so much a
2 distance so much as it is a moisture condition, how moist it
3 is.

4 MR. OSIAS: Saturation doesn't mean under water?

5 MR. SCHADE: No.

6 MR. OSIAS: What does it mean?

7 MR. SCHADE: It means that all the spaces between the
8 soil particles are full of water, so that you can't add any
9 more water to it without the water running off. Nothing
10 more -- no more water will soak into that soil.

11 MR. OSIAS: That act sort of as a glue or something?

12 MR. SCHADE: Yes.

13 MR. OSIAS: So given the annual fluctuations and
14 seasonal runs, we would need to try to predict the moisture
15 content of certain areas close to the Sea to figure out
16 where emissivity would start?

17 MR. SCHADE: Yes.

18 MR. OSIAS: That would be another problem to attack if
19 you were CH2MHill?

20 MR. SCHADE: Yes.

21 MR. OSIAS: I assume that is a fairly complex
22 prediction?

23 MR. SCHADE: Yes.

24 MR. OSIAS: Not one you had to deal with at Owens?

25 MR. SCHADE: We have to a certain extent because we are

1 interested in how that brine pool does mitigate dust.

2 MR. OSIAS: Is humidity irrelevant to emissivity?

3 MR. SCHADE: In the environments we are taking about,
4 it is because the humidity is so low all the time.

5 MR. OSIAS: Is it low on the surface of the Salton Sea?

6 MR. SCHADE: No. It is -- on the surface it is wet,
7 very high.

8 MR. OSIAS: How about six inches above the surface?

9 MR. SCHADE: Still for fairly moist because --
10 especially during the hot periods of the year.

11 MR. OSIAS: Right on the shoreline it's probably at
12 least for the first six inches above the soil still fairly
13 humid?

14 MR. SCHADE: Yes.

15 MR. OSIAS: Could that be a relevant factor?

16 MR. SCHADE: Not very relevant.

17 MR. OSIAS: The size of the remaining lake of the
18 Salton Sea, even with these withdrawals, would dwarf the
19 size of the remnant at Owens Lake?

20 MR. SCHADE: Yes.

21 MR. OSIAS: To the extent the Sea has any humidity
22 impacts, they would be much different than the remnant of --

23 MR. SCHADE: To the extent that humidity may have an
24 impact.

25 MR. OSIAS: How long did your group study the Owens

1 Lake problem to come up with a proposed plan?

2 MR. SCHADE: The research work started really in
3 earnest, large scale work, in 1990.

4 MR. OSIAS: The plan was proposed in what year?

5 MR. SCHADE: 1997 was the first draft of the plan.

6 MR. OSIAS: The plan was finally --

7 MR. SCHADE: 1998.

8 MR. OSIAS: So seven to eight years?

9 MR. SCHADE: Yes.

10 MR. OSIAS: Do you think the research and study needed
11 for the Salton Sea has the same time frame?

12 MR. SCHADE: The Salton Sea. A lot of work that we had
13 to do at Owens Lake is taking place or has taken place at
14 Salton Sea, so you are a little bit ahead in that respect.
15 We didn't have a textbook to go by at Owens Lake. We kind
16 of had to do everything.

17 I would hope that whoever -- if anyone solves, attempts
18 to solve the problem, the potential problem, at the Salton
19 Sea, they would use some of the work that has already been
20 done. It may take a shorter period of time.

21 MR. OSIAS: Then, again, there are other complexities
22 and there is the predictive nature that wasn't at Owens,
23 right?

24 MR. SCHADE: Yes.

25 MR. OSIAS: A five-to-ten-year study period, sort of

1 shorter at the five year and maybe a little longer at the
2 ten; is that a fair estimate?

3 MR. SCHADE: That would be reasonable.

4 MR. OSIAS: And it is your testimony that this petition
5 or discretionary inflow reductions, should they not be
6 permitted, I don't mean in the technical sense, the permit,
7 should not be blessed until that study is done; is that
8 right?

9 MR. SCHADE: If you don't want dust, yes.

10 MR. OSIAS: Thank you.

11 I have nothing further.

12 CHAIRMAN BAGGETT: Let's take a short break, ten
13 minutes. I have a number of questions, and I know staff
14 does.

15 Recess.

16 (Break taken.)

17 CHAIRMAN BAGGETT: Back on the record.

18 ---oOo---

19 CROSS-EXAMINATION OF DEFENDERS OF WILDLIFE

20 BY THE BOARD

21 CHAIRMAN BAGGETT: Mr. Schade, I have a few questions
22 for you. Yesterday we heard testimony that the potential
23 arsenic emissions into the air would exceed federal EPA
24 standards based on Region 9 standards.

25 Can you compare the state and federal standards or

1 regulations for arsenic?

2 MR. SCHADE: Arsenic is not a criteria air pollutant.
3 So it -- no, I can't compare those because it is not
4 something that we measure. We measure PM-10 regardless what
5 the constituents are.

6 CHAIRMAN BAGGETT: That is helpful.

7 Are efflorescent salts -- in Mono Lake that was an
8 issue. Is that comparable to Salton Sea? Is that -- I am
9 just trying to understand the term.

10 MR. SCHADE: Efflorescent salts?

11 CHAIRMAN BAGGETT: Yes. Is that generic?

12 MR. SCHADE: Yeah, it is very important. What happens
13 is -- let me just kind of start from you have a bare playa
14 that's got salt on the surface or in solution. You get
15 water precipitation falling on that. So it dissolves the
16 salts. As those salts dry out or as the moisture leaves, as
17 they do in these hot environments, the salt crystals form
18 and the type of crystal that forms is very dependent on
19 temperature.

20 You've got to assume you've got this nice muddy playa.
21 As it dries, if the temperature is very warm, generally over
22 65 degrees, you get what we call summer crusts, a very hard,
23 durable crust. Because it's got no water molecules. The
24 water gets driven off and you've got these salt crystals
25 hooked together.

1 As it dries, if the temperature is cool, what happens
2 is the salt crystals that form are very large. Sometimes
3 some of the salts have up to ten water molecules embedded in
4 the internal portions of the salt crystals. That water
5 then, as it continues to get warm, like during the summer,
6 that water will be driven off and leave this kind of matrix,
7 this very fragile matrix of salt crystals behind. And that
8 is the stuff that really -- when we say efflorescent, it
9 literally blooms in the surface of the right kinds of
10 conditions. It looks like snow.

11 CHAIRMAN BAGGETT: So that is a salt crust, if you
12 will, formed in cooler temperatures being below 65 degrees
13 Fahrenheit.

14 MR. SCHADE: Cool, moist. You have to have moisture
15 first. This all starts with moisture.

16 CHAIRMAN BAGGETT: It is a winter thing.

17 MR. SCHADE: It is a winter thing, right. And those,
18 I'll call them, fluffy crystals start forming at about 65
19 degrees, and they really form anytime you get the
20 temperature below 50 degrees. Doesn't have to be freezing.
21 Freezing has nothing to do with it. It's just a phase
22 chemistry of it.

23 CHAIRMAN BAGGETT: Freezing would actually inhibit it?

24 MR. SCHADE: Yeah. Then your evaporation rate drops
25 dramatically when it is frozen.

1 CHAIRMAN BAGGETT: Yesterday we heard testimony that if
2 the Salton Sea recedes, I don't know how many feet it was,
3 there would be a land bridge in the island in the Salton Sea
4 much like in Mono Lake that were volcanic in origin.

5 If it recedes, those islands, they will be further
6 exposed.

7 Are PM-10 emissions that are volcanic in nature more
8 problematic from air quality and human health impact or
9 concern than other salts?

10 MR. SCHADE: Again, PM-10 is -- PM-10 is regardless of
11 what the PM material is made out of. So it is just whether
12 it was small enough to become airborne and lodged in our
13 lungs.

14 If it's got something like, say, arsenic, or at Owens
15 Lake we have arsenic, nickel and cadmium elevated levels
16 most naturally occurring. That's kind of a double whamy.
17 EPA doesn't look at the health effects of, say, arsenic dust
18 because that would -- they look at just the health effects
19 of the PM regardless of what it is made of.

20 CHAIRMAN BAGGETT: Whether it is selenium or actually
21 another constituent, it doesn't really matter?

22 MR. SCHADE: Right. Those are toxics and would be
23 considered separately.

24 CHAIRMAN BAGGETT: In the Mono Lake order this Board
25 found that the exposure of the land bridge in that lake was

1 a significant source of emissions.

2 Did you look at that potential in Salton Sea as a land
3 bridge more problematic?

4 MR. SCHADE: The land bridge at Mono is really just a
5 given to an area that has very fine soil.

6 CHAIRMAN BAGGETT: I know the area well.

7 MR. SCHADE: I don't know that a land bridge or the
8 land bridge at the Salton Sea would have the same kind of
9 sediments. So it may or may not be. It's more of a
10 geologic feature than a soil type.

11 CHAIRMAN BAGGETT: You testified that the level of over
12 600 is time to go home?

13 MR. SCHADE: Yes. Run away.

14 CHAIRMAN BAGGETT: Over 600 was a time to go home.

15 Have you done any analysis or read any literature
16 comparing different, I guess, arid, saline-type environments
17 like Death Valley, Searles Lake area? Is that a problem in
18 general with those type of environments?

19 MR. SCHADE: From a PM standpoint?

20 CHAIRMAN BAGGETT: Yes. With or without humans being
21 involved.

22 MR. SCHADE: Those naturally dried lakes like Searles
23 -- Searles is not dried. Searles' got a lot of water in it
24 still. Death Valley, Panamint, and throughout the Great
25 Basin, those lakes have been dried for so long that they

1 have salt stabilized in most cases.

2 CHAIRMAN BAGGETT: Maybe I will let Tom ask a question.
3 I have, like, another ten questions written on this thing.

4 ---oOo---

5 CROSS-EXAMINATION OF DEFENDERS OF WILDLIFE

6 BY STAFF

7 MR. PELTIER: I'll fill in here. I have a few
8 questions about -- we are discussing the Owens Lake
9 situation and sediments there. I thought I heard you say
10 there were extensive studies on the sediments there?

11 MR. SCHADE: Yes.

12 MR. PELTIER: We've been talking a lot about salt and
13 efflorescence. In the PM-10 do you analyze that stuff to
14 determine what it is made of?

15 MR. SCHADE: We have, yes. What is in the PM dust, you
16 mean?

17 MR. PELTIER: Yes.

18 MR. SCHADE: We have.

19 MR. PELTIER: Can you tell me what it is?

20 MR. SCHADE: About, and these are just gross
21 generalizations. It depends where it comes off of. About
22 70 percent of the material is soil, about 30 percent of
23 material is salt. In those soil particles you have some of
24 the contaminants. Like I said, we have elevated levels of
25 arsenic, cadmium and nickel that are naturally occurring in

1 Owens Lake.

2 MR. PELTIER: Those soil particles, are they -- are
3 they just tiny little pieces of material or are they
4 mineralogically clays or -- I make a distinction, or
5 geologists generally make a distinction between clay size
6 material and clay minerals, which is -- they are different.

7 MR. SCHADE: Yes, they are. We have a real mixture.
8 The thing about Owens Lake is we have every kind of soil
9 under the sun. The west side of Owens Lake is granitic soil
10 from the Sierra Nevada. The east side are sedimentary soils
11 from the Inyo range. And at the south end of the Lake
12 you've got the coastal ranges of volcanic soil. We get a
13 real mixture of soil types with regard to soil chemical
14 composition.

15 MR. PELTIER: At Owens Lake were there any other --
16 during the history of it and the stuff is found in there, is
17 there any mining waste or mine tailings in there?

18 MR. SCHADE: Very little because there has been such a
19 low level of development in the Owens Valley.

20 MR. PELTIER: Back up to the previous question. You
21 mentioned you have all these various sources, but I didn't
22 get from you whether they're mineralogically, of that 70
23 percent is much of it clay minerals, is it just rock
24 fragments?

25 MR. SCHADE: The small particles tend to be more clay

1 minerals because of the fact that the clay is smaller to
2 begin with. So you see predominance of the clay-type
3 minerals. The PM-10 material that isn't clay mineral comes
4 from sandy-type soils, gravely soils that actually get
5 chipped off. You get minute pieces of those nonclay soil,
6 airborne as well.

7 MR. PELTIER: Are there different types of clays that
8 behave differently or have different aspects to them?

9 MR. SCHADE: Chemical composition? It doesn't relate.
10 It is so dependent on the size of it. There are very few
11 chemical interactions that are going on here.

12 MR. PELTIER: That is for respiratory --

13 MR. SCHADE: From a respiratory standpoint, yeah, I
14 don't think anybody looks at what the material's actually
15 made of.

16 MR. PELTIER: Are you familiar that some clays are
17 more disbursive? Have you ever heard that term?

18 MR. SCHADE: Yes.

19 MR. PELTIER: Have you done any studies on the clay
20 mineral out there at Owens Lake to determine whether they
21 are disbursive or not disbursive?

22 MR. SCHADE: No, we haven't.

23 MR. PELTIER: I have driven past Owens Lake before and
24 when you look out there it looks all white?

25 MR. SCHADE: Certain times of the year it does. It

1 looks like snow.

2 MR. PELTIER: Does that have anything to do with the
3 mineralogy of the soil there?

4 MR. SCHADE: You probably go by -- you probably drove
5 by and saw the white during the winter when you were going
6 up skiing, I would guess?

7 MR. PELTIER: I don't ski.

8 MR. SCHADE: Typically the lake looks very, very white,
9 looks as white as snow during the winter. That is when you
10 get these efflorescent salt crusts going on. During the
11 summer that same lake bed will be a lot grayer, will be more
12 soil colored because the salt crust that forms are what we
13 call the summer crusts which are essentially clear. You see
14 the soil more than you see the salt.

15 MR. PELTIER: What I was trying to get at, we don't
16 have any kind of real chemical data on the types of clays or
17 the character of them. I want kind of a gross idea when you
18 look at the sediments and flats around the Salton Sea they
19 look real dark brown, and I was trying to get an idea are
20 they more like then or more different?

21 MR. SCHADE: I think they look dark primarily because
22 you don't see this salt efflorescence at times. Two months
23 ago when I was down at the Whitewater Delta, we went out
24 onto an area that was very white with the crust puffed up.
25 It was like you're kind of walking to talcum powder out

1 there; it was a lot whiter than it is in other areas that I
2 saw on the same trip.

3 MR. PELTIER: Moving on a little bit, this is probably
4 my last question.

5 If you have wave action on a beach and there is
6 different kinds of materials, there is clays and sands, do
7 the clays significantly -- do they winnow out and move into
8 lower energy environments? Is that something that is going
9 to have an affect on how this stuff behaves down there?

10 MR. SCHADE: I'm not sure I understand the question.
11 The worst conditions that we typically see at Owens Lake are
12 where we have kind of a mixture of soil sizes, soil sediment
13 sizes. It's almost the sand size particles that start the
14 trouble. So often in the Great Basin when you see a dry
15 lake, the sand has been winnowed out of it. The sand has
16 blown away over the hundreds of thousands of years.

17 So often when you see a dry lake there is an associated
18 set of sand dunes somewhere in that area. Because the
19 natural processes are that the sand bounces across the
20 surface and blows away and leaves that clay behind. When
21 you've got that mixture of sand and silt and clay together
22 that really you have the sand acting as the catalyst for
23 going into these silting clay areas. Even if they're
24 crusted, that loose sand will abrade those.

25 MR. PELTIER: I'm more interested in that question in

1 trying to understand whether if you have a mixture of stuff
2 there and it is being watched on a fairly -- you mentioned
3 Owens is very flat, but much of the Salton Sea area has a
4 steeper gradient, and I am wondering whether that might have
5 an affect on --

6 MR. SCHADE: It's source of soils coming in. In those
7 steeper areas when you see, especially along the eastern
8 shore, along the state park there, you've got what looks
9 like typical beach sands because the fine material has the
10 plya material has been winnowed out probably in waves and
11 deposited deeper into the Sea.

12 MR. PELTIER: I think that covers my questions.

13 CHAIRMAN BAGGETT: I have recovered my floppy disk.

14 MR. FECKO: Good morning. I guess I would like to
15 start out with some questions on the background of Owens and
16 how it compares to the Salton Sea.

17 Do you have any idea of the age of Owens Lake and how
18 long it has been there?

19 MR. SCHADE: It was a lake for a very long period of
20 time for -- well, let me back up.

21 During the course of geologic history sometimes it was
22 actually just a river or a wide spot on the river. So it
23 was actually a fresh environment. When you add an outlet,
24 the river, Owens River, came down, filled -- it was probably
25 a big, wide Marshy area. We see some organic remnants in

1 some of the deeper holes. In fact, we found, like, a piece
2 of bark and reeds and things like that. And over other
3 periods of time it was a closed basin and became a salt
4 lake.

5 If you look at the -- and we've gone down about a
6 thousand feet in some of our test holes, and it looks like a
7 layer cake. We've got layers of sand that were deposited
8 during the -- when it was a river, and areas of -- more than
9 sand, you've got areas of clay that was deposited when it
10 was a lake.

11 MR. FECKO: Do you have some of this sort of
12 periodicity --

13 MR. SCHADE: Absolutely.

14 MR. FECKO: -- that the Salton Sea was experienced?

15 MR. SCHADE: Yes.

16 MR. FECKO: In that vane, you could say it's been a
17 lake more often than it has been dry?

18 MR. SCHADE: There is really no evidence as far we have
19 done that it was ever dry. There was always something.
20 Parts of it were dry. When it was a river the areas that
21 were the lake were probably high and dry. But there is that
22 periodicity.

23 MR. FECKO: What was the salinity of Owens Lake when it
24 began to recede in the '40s?

25 MR. SCHADE: It was about three times seawater.

1 Did you say Owens Lake?

2 MR. FECKO: Yes.

3 MR. SCHADE: It receded in the '20s. It was about
4 three times seawater.

5 MR. FECKO: Do you find that the soils now that are
6 left after it has receded, are they -- is there a salt
7 gradient in the soils? As you go towards the center of the
8 lake, is the soil there much saltier than at the edges?

9 MR. SCHADE: Yes. In fact, at the center of the lake
10 -- visualize a lake, a salty lake, with water three times
11 seawater, and as that lake decreases in size, the saltiness
12 of the water gets saltier and saltier. There comes a point
13 that it can't hold the salt anymore; it becomes
14 supersaturated. Literally, overnight then what happens is
15 it dumps its salts. So as you get all the way to the
16 center of the lake, there really isn't any soil anymore, it
17 is just a salt deposit. Salt deposits are up to about nine
18 feet thick, pure salt deposits.

19 You had this lake one day that was big enough to hold
20 salt in solution, and the next day it got small enough to
21 dump that salt out. Those salts are dropped out by portions
22 of their solubility. The most soluble salt, which is sodium
23 chloride, is the last thing to be dropped out. So you get
24 this kind of a bathtub ring of salt deposits as you get
25 saltier and saltier, and the salt composition or the mix of

1 salts changes as you go toward the center of the lake.

2 MR. FECKO: I would imagine the job of mitigation gets
3 harder and harder, and you're talking about vegetation --

4 MR. SCHADE: Yes.

5 MR. FECKO: -- as you get towards the center of the
6 lake, right?

7 MR. SCHADE: To a point. I wish I had a map. We've
8 got a remnant brine pool of 40 square miles in the center of
9 the lake. There is a zone about less than a mile, say half
10 a mile wide, outside of that. It doesn't have a lake on it,
11 but it is that pure salt deposit. That's actually not
12 emissive. I don't know if you've ever been to Death Valley,
13 the Devils Golf Course. That is a solid salt deposit. That
14 is not emissive. We have that out at Owens Lake. It is a
15 lot damper than at Devils Golf Course. Then it is above
16 that that you get not enough salt. It's too much salt to
17 allow vegetation to establish naturally, but it is not
18 enough salt to be self-stable, to be a salt-salt deposit.
19 It is that kind of nightmare in between that you got a mix
20 of salt and soil.

21 MR. FECKO: Speaking of vegetation, how have you gone
22 about doing this mitigation with the vegetation? I believe
23 you said it was a salt grass, right?

24 MR. SCHADE: Yes.

25 MR. FECKO: A species of salt grass growing out there?

1 MR. SCHADE: Yes.

2 MR. FECKO: Especially salt tolerant, I would imagine?

3 MR. SCHADE: Yes.

4 MR. FECKO: Do you have to reclaim an area in some
5 fashion?

6 MR. SCHADE: There is a significant effort to reclaim
7 the soil before you can even plant most soil tolerant of
8 plants, with it salt grass. The State of California has
9 required that the plants that we use out there be locally
10 adapted plants. We don't want to let some kind of exotic --
11 there are actually a lot of salt tolerant plants that, say,
12 grow in the Middle East that may grow fairly well out there.
13 We are precluded from using those. We have to use locally
14 adapted native species. And the best by far is salt grass.

15 What you do is -- but the Owens Lake bed is presently
16 far too salty even to support the salt tolerant salt grass.
17 It is three times too salty to support the salt grass. What
18 you do first is you build an infrastructure, an
19 irrigation-type infrastructure, which includes a lot of
20 drains. The drains generally are five to eight feet deep.
21 Then you put water either through a surface flooding, which
22 is pretty inefficient, or through drip irrigation. If you
23 put enough water in those soils to mobilize those salts and
24 drive those salts down into the drains. You put enough
25 water through it, and you haven't planted anything yet, all

1 you are doing is watering salty, salty soil. You drive
2 those salts down and out of the system. And then you
3 reclaim this rooting zone that's deep enough to come in and
4 establish the salt grass.

5 MR. FECKO: I assume you said you have been around the
6 Salton Sea?

7 MR. SCHADE: Yes.

8 MR. FECKO: Have you seen some of the ancient lake bed
9 or what we refer to as bathtub rings, I believe, that were
10 much higher up the mountain than, let's say, on the west
11 side of the lake than the level that is current?

12 MR. SCHADE: I have seen them from afar. Haven't
13 climbed up there to see them. When you are driving by on
14 the highway, they have been pointed out to me.

15 MR. FECKO: At some point that soil was under water?

16 MR. SCHADE: Yes.

17 MR. FECKO: It was presumably saltwater because it was
18 the delta of the Colorado River and it was mixing freely
19 with the Sea of Cortez. I am not sure if you are aware of
20 that?

21 MR. SCHADE: Yes.

22 MR. FECKO: There is desert vegetation on there
23 currently?

24 MR. SCHADE: Yes.

25 MR. FECKO: Yes.

1 MR. SCHADE: Yes.

2 MR. FECKO: How does that become established and how
3 long does it take for those kinds of natural vegetation to
4 become reestablished?

5 MR. SCHADE: It is very dependent on soil slope,
6 basically. If the soil has got salt in it and there is too
7 much salt to allow vegetation to naturally establish, you
8 won't get any vegetation established. But as you get
9 precipitation or you, say, overland flow or through a creek
10 or wash or something like that, those salts are washed
11 naturally out of the soil. The steeper the soil, the
12 steeper the slope, and, of course, of the soil the more
13 readily those salts are flushed from the soil.

14 If I'm up on an, say, an alluvial fan which typically
15 contains very coarse soils, easy to leach and fairly steep,
16 at least as compared to the lake bottom. Those sales are
17 typically reclaimed, either naturally or through human
18 intervention, a lot easier and a lot more readily than a
19 soil that has the same amount of salt, but now it's in a
20 clay soil which leaches a lot slower and it's flat. There
21 is nowhere for the salt to go. The salt's got to be taken
22 out of the system. The salts got to go somewhere. On those
23 steep sides the salt pushes down toward the center of the
24 basin.

25 MR. FECKO: In your driving around the Salton Sea,

1 let's say over by the State Park on the eastern edge there,
2 you've noticed the vegetation that is growing up on the
3 sides there?

4 MR. SCHADE: Yes.

5 MR. FECKO: Would you characterize that as fairly
6 sparse vegetation?

7 MR. SCHADE: Yes, I would.

8 MR. FECKO: Is it -- does it have any affect on sort of
9 this PM-10, this fugitive dust emission? Does that sparse
10 vegetation make a difference?

11 MR. SCHADE: A little bit of difference. It depends on
12 whether there is any PM-10 in it. In those sandy areas that
13 I'm thinking of along the State Park there probably are not
14 a lot of PM-10 in that material. But the work that we have
15 done at Owens Lake and work that other vegetation scientists
16 have done regarding how much vegetation do you need to
17 stabilize an unstable soil, the numbers are typically from
18 30 to 50 percent of looking at from above needs to be
19 vegetated. So if you have 30 percent vegetation, all the
20 way up to 50 percent vegetation, you're going to get pretty
21 much total control of emissions. There is enough roughness,
22 there is enough stuff sticking up to protect that surface.

23 MR. FECKO: Thanks.

24 CHAIRMAN BAGGETT: When I went down -- trying to
25 understand what the natural background PM-10 would be in an

1 arid Salton Sea environment. Are there any studies to your
2 knowledge that show what background would be absent human
3 contact or altering the ecosystem?

4 MR. SCHADE: I will speak to Owens Valley which I know
5 better than anywhere else. We measure the background. It's
6 a relatively undeveloped Valley because there is no private
7 land for people to develop, so it's very sparsely developed.
8 And we do get background levels of PM-10. Especially when
9 the wind is blowing hard enough to cause a dust storm on
10 Owens Lake, there is always an upwind side. So we've got
11 upwind monitors that give us those typical how does the
12 valley -- how much dust in the valley under natural
13 conditions. And they are fairly low. Because most deserts
14 are -- they do stabilize themselves over a period of many
15 years.

16 CHAIRMAN BAGGETT: Death Valley would be a stable --

17 MR. SCHADE: Death Valley is very stable. You've a lot
18 of sand blowing around there, but you get very little PM-10,
19 very little natural dust.

20 CHAIRMAN BAGGETT: The small PM-10 emissions is not a
21 problem; it is the much larger.

22 MR. SCHADE: Because what happens in, like, Death
23 Valley, an excellent example.

24 CHAIRMAN BAGGETT: In your county?

25 MR. SCHADE: Yes.

1 CHAIRMAN BAGGETT: Some familiarity.

2 MR. SCHADE: You've got all these alluvial fans.
3 You've got a lot of material moving out of the mountains,
4 out of the rocks, down into the valley. If you go on to the
5 alluvial fan, I don't know if you've heard the term "desert
6 pavement." What happens is the fine stuff blows away and
7 leaves little large rocks behind. Over many years, tens to
8 hundreds of years, all the fine stuff's blown away and
9 leaves this layer of natural gravel, looks almost like
10 somebody has spread the gravel. That will happen if there
11 are large particles in the mix. At Owens Lake there is no
12 gravel. It is all sand and smaller.

13 CHAIRMAN BAGGETT: Given the fact that the majority of
14 inflow in the Salton Sea is a result of human activity and
15 this proposed transfer would actually, potentially decrease
16 the water imported into Imperial Valley for agricultural
17 uses, which would -- the result, at least the testimony was,
18 that that would increase the PM-10 emissions.

19 Would you still consider those an anthropogenic
20 source?

21 MR. SCHADE: I don't know that I am qualified to answer
22 that. That would be something for attorneys to argue
23 about.

24 CHAIRMAN BAGGETT: That is fair. Something I've been
25 thinking about. I'm very familiar with prescribed air in

1 the Clean Air Act. Those are other issues. Let me
2 continue. I have a couple more.

3 Are you aware of any studies examining impact of
4 increased PM-10 emissions on avian populations?

5 MR. SCHADE: I'm aware of the real lack of studies.
6 There really hasn't been a lot of study of PM-10 on birds.
7 There has been some on desert tortoises. But all of EPA's
8 work is really geared toward setting the standard for human
9 health; and that is one of the things that we really don't
10 know what kind of impacts. We have got one species of
11 special concern on Owen Lake called snowy plover. It is a
12 little shorebird that nests out there. As you imagine, they
13 probably have very small lungs. We don't know what kind of
14 mortality we get from dust storms.

15 CHAIRMAN BAGGETT: Owens Lake, I think in your
16 testimony, you said had been dried for almost 80 years. How
17 long will it take for it to stabilize?

18 MR. SCHADE: EPA's given us a deadline of 2006.

19 CHAIRMAN BAGGETT: Naturally, what will -- if you let
20 it go, when will it stabilize?

21 MR. SCHADE: We have seen natural stabilization taking
22 place along the edges where you have water sources over,
23 say, the 80 years you got maybe a quarter mile of these wet
24 areas being naturally revegetated, where you don't have
25 active springs, you have virtually nothing being

1 revegetated.

2 CHAIRMAN BAGGETT: You talked about the desert
3 pavement. At what point would that --

4 MR. SCHADE: We don't have enough gravel for a desert
5 pavement to really occur on Owens Lake. What typically
6 happens when you don't have a desert pavement forming, which
7 is at these lake basins, is you get a natural sorting of the
8 sand and clay. Sands blow away and become sand dunes
9 somewhere. Once all the sand is out of the system, then the
10 clays are -- they lock onto each other pretty well and tend
11 to be not emissive.

12 CHAIRMAN BAGGETT: In your testimony, it's typical when
13 you get this efflorescent formation. When winds are
14 stronger and more frequent, in your testimony you said in
15 the summer it becomes much more of a problem with these
16 unstable crusts.

17 Did you do any comparison to the timing of velocity to
18 wind patterns in Owens Valley and Salton Sea?

19 MR. SCHADE: Only with the information presented in the
20 EIR and the section on meteorology they give us some wind
21 roses which is direction and velocity for the north end and
22 the south end.

23 CHAIRMAN BAGGETT: How do they compare to Owens Valley?

24 MR. SCHADE: They're comparable. I don't know that you
25 -- in fact, it seems like I came up with something on the

1 order of 40 to 50 days or 40 to 50 days' worth of hours
2 where the wind speed exceeds the threshold. It was
3 difficult to say exactly.

4 At Owens Lake, at one of the more active dust areas, we
5 get -- last year we got 41 days of violations. So the wind
6 was blowing strong enough on 41 days to violate. So they're
7 comparable.

8 CHAIRMAN BAGGETT: Last question I have regarding the
9 PM-10 agricultural areas. I realize that in Inyo County
10 that is not a challenge these days.

11 MR. SCHADE: No.

12 CHAIRMAN BAGGETT: Assume your background is air
13 pollution control you have some knowledge of what causes,
14 what is the greatest cause of PM-10 in agricultural areas.
15 Do you have any --

16 MR. SCHADE: We do have actually north of the Owens
17 Valley and adjacent to the valley is the Chalfant, Hammil
18 Valley, and quite a bit of farming that goes on up there.
19 We have dust problems there. I work with the farmers up
20 there to try to control.

21 CHAIRMAN BAGGETT: Was it in the roads?

22 MR. SCHADE: No, from the fields themselves.

23 CHAIRMAN BAGGETT: From tilling practices?

24 MR. SCHADE: Yes, poor tilling practices.

25 CHAIRMAN BAGGETT: If those land -- I am familiar with

1 that area. In Hammil Valley, for example, if those lands
2 are fallowed, if they rotate a crop out, don't plant for a
3 year, does that increase the PM-10 emissions or does it
4 impact it at all as opposed to --

5 MR. SCHADE: We worked with the farmers up there. When
6 they fallow, if the fallow those fields, and some of them
7 are fallowed to take measures to minimize those impacts,
8 mainly leaving a cover crop.

9 CHAIRMAN BAGGETT: I guess my question goes to, is
10 active farming, how does the practice of actually farming
11 and tilling the soil and disking and harrowing and all that
12 goes along with planting crops, the PM-10 emissions from
13 that practice versus the PM-10 emissions from doing nothing?

14 MR. SCHADE: You're out of my area. Farming on a salt
15 lake I can talk about.

16 CHAIRMAN BAGGETT: Okay.

17 MS. DIFFERDING: Good morning, Mr. Schade.

18 MR. SCHADE: Good morning.

19 MS. DIFFERDING: I think you said that at about six to
20 ten square miles of exposed lake bed you would have a
21 significant air quality problem?

22 MR. SCHADE: Yes. That 20,000 micrograms kind of the
23 number one on the hit parade there of PM-10. Comes from an
24 area that we call dirty socks. And that is about -- it
25 varies in size depending on the crops. It varies from four

1 to eight square miles.

2 MS. DIFFERDING: Were you talking about Owens Lake?

3 MR. SCHADE: Yes, Owen Lake.

4 MS. DIFFERDING: Would you say the same would be true
5 of the Salton Sea? Do you know?

6 MR. SCHADE: If the soils are similar, and a lot of
7 soils that I have seen in Salton Sea are similar, you would
8 expect there to be similar emission rates from those similar
9 type soils. You wouldn't necessarily have to have 50 or 75
10 square miles exposed to have a significant dust problem. It
11 could be -- it depends on where you are downwind. If you
12 have one square mile right near the shore where people are
13 just off the shore, then they can be exposed to very high
14 levels of dust.

15 MS. DIFFERDING: It depends on variables about which we
16 don't know enough at this point to say at what threshold,
17 how many squares miles, you might have a significant air
18 quality problem at the Salton Sea?

19 MR. SCHADE: Yes. I don't know enough of that.

20 MS. DIFFERDING: That's it.

21 Thank you.

22 CHAIRMAN BAGGETT: Have any redirect?

23 MR. FLETCHER: Yes, I have to.

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REDIRECT EXAMINATION OF DEFENDERS OF WILDLIFE

BY MR. FLETCHER

MR. FLETCHER: I believe on cross-examination Mr. Osias walked you through some of the differences between Owens Lake and potential differences between Owens Lake and the Salton Sea?

MR. SCHADE: A few of them, yes.

MR. FLETCHER: One of the things he spent some time on was the rate of recession of the shoreline. And if I recall, that would potentially be somewhat slower at the Salton Sea than it would be Owens Lake?

MR. SCHADE: Yes.

MR. FLETCHER: He then asked you a series of questions related to whether vegetation might follow that shoreline recession given it is slower. I think you testified a few times that at least that that is not a likely occurrence under natural conditions?

MR. SCHADE: No. In most places it wouldn't be a significant amount or significant rate of natural revegetation.

MR. FLETCHER: At Owens Lake vegetation is, and you testified on this several times, part of your process to mitigate --

MR. SCHADE: Yes.

MR. FLETCHER: -- the air quality impacts?

1 When you put together that program, what kind of
2 research did you do, what kind of factors?

3 MR. SCHADE: Well, with any of the control measures
4 that are proposed either by district staff or we actually
5 had a lot of scientists from the outside, scientists and
6 other people from the outside, gave us ideas. There is kind
7 of a process that you go through. You do a kind of in your
8 head paper study, does this make sense on the large scale at
9 Owens Lake. If that passes that test, then you go out and
10 do it on a very small scale on the order of an acre or less.
11 If that passes the test, then you go to something on the
12 order of 20 to maybe a few hundred acres, along the way
13 trying to determine whether or not it is -- whether if it
14 works on the lake, whether it will control dust, and
15 continually evaluating what the cost would be.

16 An example is chemicals. Any time that there would be
17 an article about Owens Lake and the huge dust problem, all
18 these guys that sell chemicals, all kinds of chemicals,
19 dust-be-gone, show up at my door and say, "Man, have I got
20 something for you." Because he sat down and he calculated
21 how many billions of dollars this stuff he was going to sell
22 to the City of Los Angeles to keep the dust down. If it
23 doesn't pass -- the cheapest chemical that we found to keep
24 dust down at Owens Lake was water. We kind -- we compare
25 everything back to that.

1 So along the way you continue to do the cost. With
2 vegetation we did just that. We researched literature and
3 found that especially in Israel that is where a lot of this
4 technology has been developed because they do it, they farm
5 some very saline soils. We did a number one-acre tests,
6 expanded to 20 acres and then we have something on the order
7 of, I would say, 150 to 200 acres in what we call vegetation
8 test sites. The City of Los Angeles has used our
9 information to design these multi thousand acre mitigation
10 measures.

11 MR. FLETCHER: Did you see any indication in the EIR of
12 that sort of research that you just described having been
13 conducted here in the Salton Sea?

14 MR. SCHADE: No.

15 MR. FLETCHER: Now on the research that you just
16 described, is that inexpensive research?

17 MR. SCHADE: No. On a large scale, large scale project
18 it's going to be quite expensive. As an example, our yearly
19 budget for research at Owens Lake is somewhere on the order
20 of -- averages \$5,000,000 a year.

21 MR. FLETCHER: Did you see anything in the EIR to
22 indicate there is a program that has been developed to mimic
23 on a shorter time frame revegetation of exposed seabed?

24 MR. SCHADE: No.

25 MR. FLETCHER: Are you aware of any funds that have

1 been committed to develop or implement?

2 MR. SCHADE: Not aware of any.

3 MR. FLETCHER: Let me move on to another difference
4 that Mr. Osias covered and that Chairman Baggett covered as
5 well, which is temperatures.

6 It is warmer in Imperial Valley?

7 MR. SCHADE: Yes, it is.

8 MR. FLETCHER: I believe you testified -- I guess is
9 cross when Chairman Baggett asked you questions -- that salt
10 can form in the range between 40 and 65 degrees; is that
11 correct?

12 MR. SCHADE: Yes. You start -- salts form under all
13 temperatures, but the emissive salts start to form, these
14 emissive salt crystals that I talked about that is a matrix
15 of fluffy crystals, you see them start to form at 65 degrees
16 for some of the salts. For nearly all of the emissive-type
17 salts form that kind of crystal below 50 or 40 degrees.

18 MR. FLETCHER: To me 50 degrees doesn't sound real
19 cold. Let's just call it a cold snap for the purpose of
20 this question. Do you need a long cold snap? How long a
21 cold snap do you need of 50 degrees to form salts?

22 MR. SCHADE: A very short period of time. You can
23 actually get significant salt blooms, what we call in this
24 efflorescent salt crystals forming overnight if you have
25 enough moisture and the temperature dips and it's dry

1 enough, the weather is dry enough that the moisture is
2 driven off. The lake bed -- at Owens Lake you can literally
3 turn white overnight.

4 MR. FLETCHER: Another difference that Mr. Osias
5 covered with you, potential difference related to humidity.
6 Can areas that have high ground water and high soil
7 moisture, can they ever form emissive surfaces?

8 MR. SCHADE: Yes. It is very common for dust to be
9 coming off of areas that are nearly saturated. You only
10 need a fraction of an inch, a millimeter, of dry material at
11 the surface. So literally we can have large rainstorms
12 where the soil is saturated. And as long as that top
13 fraction of an inch starts to dry, you get dust coming off.
14 The dust is literally blowing off the surface of the mud.
15 As that material blows away, it exposes more surface that
16 dries and then more material blows off.

17 If moisture is going to be used, either naturally or
18 artificially, to control dust, the moisture has to be
19 continually applied. That is one of our control measures
20 called shallow flooding. We require the City to keep that
21 soil saturated. Not close to saturation, but actually
22 saturated in order to control dust emissions.

23 MR. FLETCHER: I believe in Mr. Peltier's question the
24 issue of a mix of clays, silts and sands and their potential
25 to emissivity came up. Is that mixture -- can you describe

1 for me what relation that mixture has to emissivity and
2 whether it is present in salts?

3 MR. SCHADE: It is the mixture of soil size-types that
4 can cause the problems. Owens Lake is fairly nonhomogeneous
5 in the soil types. You take someone out there and they look
6 at this dry lake. And they say, "Oh, my God, it is all
7 flat, it is dry, it is all the same." But it is anything
8 but. It is a very nonhomogeneous mixture of soils and
9 sizes. When I talk about soil types, I'm talking about
10 sands, silts and clays.

11 I see or actual we have all seen based on some of the
12 charts that were shown yesterday, we have that same
13 condition as the Salton Sea, especially on the south end
14 where you have two rivers flowing in that tend to carry
15 larger soil particles. Once those sands hit the Sea, they
16 tend to drop out. So you have sand deposits around the
17 river mouths. As you go further out, you hit the clays. It
18 is the proximity of the noncrusted sands to these clay areas
19 that cause some of the largest dust storms, at least at
20 Owens Lake, to occur.

21 MR. FLETCHER: Actually, I was just going to move on to
22 sand. A series of questions that have to do with sand
23 abrasion. What are your sources for sand near Owens Lake?

24 MR. SCHADE: Owens River, when it flowed, brought a
25 lot of sand in. There is large sand deposits, actually very

1 coarse sand deposits at the north end of the lake.
2 Currently it is flat flooding. There are few desert washes
3 that bring material down. Those coarser materials, the
4 larger particles are brought down at the mouth of these
5 washes and deposited then out on the lake bed. That sandy
6 material, as I mentioned before, acts as a catalyst to blow
7 out and move into the areas that may have other crusted
8 anonymously.

9 MR. FLETCHER: Are there differences? Would it be
10 accurate to say that the sand sources at Salton Sea are
11 different than they are at Owens Lake?

12 MR. SCHADE: I don't know that they are. It seems to
13 me that you've got a lot of the similar conditions, where
14 you've got sand deposits at the mouths of these rivers and
15 you actually have rivers that are still flowing, probably
16 continuing to bring sand down, especially at desert washes
17 you get the same sand deposits?

18 MR. FLETCHER: There are also upland sand sources?

19 MR. SCHADE: Yes. Everything tends to move down. So
20 the sand is an upland source over time through an aeolian,
21 which is wind forces and fluvial forces, or water forces,
22 tend to move down into the bottom of the basin.

23 MR. FLETCHER: One final thing that came up on cross,
24 the difference may be not such a big difference, but wind.
25 Wind speed is a factor in determining emissivity.

1 Are you familiar with the term "wind fetch"?

2 MR. SCHADE: Yes.

3 MR. FLETCHER: Can you describe that for me?

4 MR. SCHADE: Wind fetch is the distance over which a
5 wind blows across the surface. It is most commonly
6 associated with ocean or with wind over water. The longer
7 the fetch at a given wind speed, the higher the waves
8 generated. It is something we are concerned about on dry
9 emissive lake beds. If you have the wind blowing over very
10 short space that will generate different emissions than the
11 wind blowing over very long direct because it is kind of
12 cascading effect.

13 Visualize the wind hitting this plya, hitting the
14 surface, and there is a first sand grain to move somewhere.
15 There is always a very first sand grain to move, first soil
16 particle. That soil particle will then start to move, and
17 what it tends to do, as it saltates, rolls around, across
18 the surface it releases other particles. So the longer this
19 fetch or the longer the wind blows across the surface, the
20 more opportunity there is for these materials to basically
21 bump into each other and dislodge. A long fetch at a given
22 wind speed typically produces more dust than a short fetch
23 at the same speed.

24 MR. FLETCHER: How would you describe the wind fetch at
25 the south end of the Salton Sea, assuming that 50,000 acres

1 are exposed?

2 MR. SCHADE: Kind of roughly scaling it, you've got
3 some pretty significant, potentially significant fetches.
4 Especially because if you look at the wind rose, it looks
5 like you've got a western wind component that we don't have
6 in the Owens Valley. Owens Valley is all north and south.
7 It is the deepest valley in the country, kind of like a wind
8 tunnel. The Salton Sea there is kind of a low saddle to the
9 west of the Sea that goes out to Anzo Borrego. If you look
10 at the wind rose, there is significant winds that come from
11 the west, which really then blows right across that exposed
12 southern end of the lake. I would expect some significant
13 fetch, wind fetch across the exposed plyas.

14 MR. FLETCHER: Let me ask a question about the kind of
15 modeling that is going to be done at Owens Lake. Mr. Osias
16 questioned about the kind of modeling that has been done at
17 Owens Lake and that CH2MHill has participated at least in
18 critiquing. He pointed out that there is an existing
19 problem at Owens Lake, and efforts have been directed
20 towards solving that existing problem; is that right?

21 MR. SCHADE: Yes.

22 MR. FLETCHER: And he also pointed out that models at
23 Salton Sea at least, unless there's a problem created, would
24 be addressed to predict the nature of the problem?

25 MR. SCHADE: Yes.

1 MR. FLETCHER: And he suggested that existing problems
2 aren't the same as problems -- solving existing problems not
3 necessarily the same as predicting future problems?

4 MR. SCHADE: Right.

5 MR. FLETCHER: Does the experience at Owens Lake
6 provide -- in solving existing problems does that provide
7 useful material for developing models to predict future
8 problems?

9 MR. SCHADE: I believe that does.

10 MR. FLETCHER: Can you elaborate on that?

11 MR. SCHADE: Well, at the Salton Sea you don't have an
12 existing problem, but you've got enough -- you have enough
13 existing exposed sediments to -- you know, the sediments
14 that I have seen at the Salton Sea that cause me to be
15 concerned about the potential for dust emissions are exposed
16 sediments. I haven't been scuba diving, and you wouldn't
17 learn much from seeing wet sediments, anyways. It is these
18 exposed sediments that you learn from. At the Salton Sea
19 you've got a very limited amount of those exposed sediments
20 at this time. It doesn't take a large area of exposed
21 sediment to learn something from. At Owens Lake what we do
22 and what we've done for many years is we've got essentially
23 a portable wind tunnel. We've got a couple different sizes.
24 One can be loaded on the back of an all-terrain
25 vehicle. It is only about six feet long. It's got a ten

1 centimeter cross-section. Take that out to an area that we
2 want to know how much dust can waffle this thing. Put this
3 wind tunnel down on the ground, and we suck wind through it.
4 We make our local wind and we measure how many PM-10 comes
5 off of it.

6 On the other end of the spectrum, we've contracted a
7 number of times with some scientists at the University of
8 Guelph in Ontario who bring down on the back of a semitruck
9 a very large barely portable wind tunnel that we take out on
10 the lake bed. It has a one meter cross-section. It allows
11 us to get a more represented idea as to how emissive those
12 sediments are. We've done a lot of that on Owens Lake over
13 all different types of soils and all different types of
14 seasons to really measure an emission rate. We use measured
15 emission rate, among other things, to put into our model.
16 There is really no reason why you couldn't do that work at
17 the Salton Sea on sediments that are exposed to get some
18 potential readings.

19 MR. FLETCHER: I have no more questions.

20 Thank you.

21 CHAIRMAN BAGGETT: Thank you.

22 Recross and I just want to emphasize it is limited to
23 the few topics that were just brought up.

24 Mr. Gilbert.

25 MR. GILBERT: Yes, I do have a couple.

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CROSS-EXAMINATION OF DEFENDERS OF WILDLIFE

BY MR. GILBERT

MR. GILBERT: I think on redirect you testified that these salt crystals, the efflorescent could form overnight if the humidity was low?

MR. SCHADE: Yes.

MR. GILBERT: So is it actually the drying that causes the crystals to form?

MR. SCHADE: Yes. Visualize the water hitting the ground, say that it is from rain. It dissolves the salt and the salt then is in a brine; it is a mixture of water and salt. As that water leaves the system, it leaves the salts behind. It is the temperature at which the water leaves the system that dictates the shape or type of salt crystals that is formed.

MR. GILBERT: It has to be drying conditions, the water has to be leaving?

MR. SCHADE: The water has to be leaving the system. Otherwise you maintain a brine that isn't emissive.

MR. GILBERT: Are you very aware of the overnight humidities, levels at ground level in the Imperial Valley area?

MR. SCHADE: No.

MR. GILBERT: Are you aware that within the IID we do have considerable what we call dirt roads?

1 MR. SCHADE: Yes.

2 MR. GILBERT: Would it surprise you if I told you that
3 where the salt level is high in those dirt roads that often
4 in the early morning we actually have puddles of water
5 formed on the surface of those dirt roads?

6 MR. SCHADE: No. Because we see that in cool mornings,
7 especially. A cool morning that changes into a warm
8 morning, what happens is those salt crystals, they give up
9 their water. I mentioned that some of the salt crystals can
10 hold up to ten water molecules in one salt crystal. So what
11 actually happens, is you get -- there is no precipitation at
12 all. It hasn't rained. It is dry in the morning when it is
13 cool. As the day progresses, those crystals drop their
14 water, but faster than the water can actually evaporate.
15 Like you said, the humidity is very high. So you actually
16 get mud forming on roads that were just a few hours before
17 there was no mud.

18 MR. GILBERT: When that drying takes place during the
19 morning, it usually does it with sunshine and that would
20 warm the ground quite a little bit, would that be true?

21 MR. SCHADE: Yes.

22 MR. GILBERT: That is all.

23 CHAIRMAN BAGGETT: Mr. Du Bois.

24 MR. DU BOIS: No questions.

25 CHAIRMAN BAGGETT: Mr. Rodegerdts.

1 MR. RODEGERDTS: No.

2 CHAIRMAN BAGGETT: Mr. Rossmann.

3 MR. ROSSMANN: Just two questions, your Honor.

4 ---oOo---

5 CROSS-EXAMINATION OF DEFENDERS OF WILDLIFE

6 BY COUNTY OF IMPERIAL

7 BY MR. ROSSMANN

8 MR. ROSSMANN: I believe you testified on redirect that
9 you looked at wind roses in the EIR; is that correct?

10 MR. SCHADE: Yes.

11 MR. ROSSMANN: You didn't evaluate whether those wind
12 rose representations were accurate?

13 MR. SCHADE: Actually I did kind of indirectly.
14 Imperial County's consultant, Ralph Morris, called me and he
15 apparently heard I was working on the project. I mentioned
16 something about the wind rose, and he said, "Oh, those wind
17 roses are not correct."

18 MR. ROSSMANN: Did you review any written material from
19 Mr. Morris or his firm?

20 MR. SCHADE: No.

21 MR. ROSSMANN: Forgot what the other question was.
22 Maybe it wasn't that important.

23 CHAIRMAN BAGGETT: Thank you.

24 National Wildlife.

25 Audubon.

1 Sierra club.

2 PCL.

3 MS. DOUGLAS: No questions.

4 MR. ROSSMANN: Your Honor, I do remember the other
5 question. It is a very factual one.

6 CHAIRMAN BAGGETT: Okay.

7 MR. ROSSMANN: Did you visit the Calexico monitoring
8 site when you were in the Imperial Valley?

9 MR. SCHADE: No, I didn't.

10 MR. ROSSMANN: Thank you, sir.

11 CHAIRMAN BAGGETT: Salton Sea is not here.

12 Colorado Tribes.

13 Mr. Slater.

14 ----oOo----

15 CROSS-EXAMINATION OF DEFENDERS OF WILDLIFE

16 BY SAN DIEGO COUNTY WATER AUTHORITY

17 BY MR. SLATER

18 MR. SLATER: Just one or two questions.

19 I believe you testified, sir, on redirect that the
20 cheapest chemical to keep dust down on the Owens Lake is
21 water; is that correct?

22 MR. SCHADE: That's correct.

23 MR. SLATER: By that, for clarification, you meant that
24 the City of Los Angeles is leaving water behind that they
25 previously exported, correct?

1 stays out there.

2 MR. OSIAS: So that would be significantly different
3 volume than, say, the rivers in Imperial which even after
4 diverting 300,000 of inflow might have 800,000 or 900,000 or
5 a million flowing through it, correct?

6 MR. SCHADE: It would continue to be a significant
7 amount of water compared to Owens Lake.

8 MR. OSIAS: So there would be further delta action?

9 MR. SCHADE: Yes.

10 MR. OSIAS: If the sea were receding, the old delta
11 would be farther away from the sea than the new delta being
12 formed by the continuing flow to the river?

13 MR. SCHADE: The old delta would be farther from the
14 sea. However, at Owens Lake we see the delta continues to
15 grow. So the delta would just move out on the lake bed.

16 MR. OSIAS: With the volumes of river water continuing
17 in Imperial Valley the rivers would presumably reach the
18 sea, correct?

19 MR. SCHADE: Yeah.

20 MR. OSIAS: They would flow over the old delta?

21 MR. SCHADE: Yes.

22 MR. OSIAS: The old delta would therefore remain wet?

23 MR. SCHADE: Where the river was flowing over the
24 delta it would remain wet.

25 MR. OSIAS: So at least in that portion the sand would

1 be relatively safe from blowing onto the salt, correct?

2 MR. SCHADE: In that portion it would.

3 MR. OSIAS: Did you review anything in the EIR with
4 respect to wetlands creations in the delta areas?

5 MR. SCHADE: No.

6 MR. OSIAS: So if they did that to expand the geography
7 of the wet area on the old delta, that would have the same
8 beneficial air impact of sort of keeping the sand there?

9 MR. SCHADE: Yes. Whether it was wet or vegetated,
10 those are control measures that we found that work.

11 MR. OSIAS: Is the primary source of sand abrasion from
12 the deltas of the three rivers?

13 MR. SCHADE: At the Salton Sea?

14 MR. OSIAS: Yes.

15 MR. SCHADE: I don't know if there is any abrasion at
16 this point.

17 MR. OSIAS: Predicted abrasion, I'm sorry. You want me
18 to rephrase that?

19 MR. SCHADE: Yeah, go ahead and ask me again.

20 MR. OSIAS: We know there -- if the Sea recedes we know
21 there will be deltas left behind with sand in them from the
22 three river sources, correct?

23 MR. SCHADE: Yes.

24 MR. OSIAS: At least we can predict if they were
25 exposed and dried that that sand could create this abrasion

1 of the salt flats that you talked about?

2 MR. SCHADE: Yes.

3 MR. OSIAS: If they are instead covered, does that
4 eliminate a significant portion of the sand, predicted sand
5 abrasion?

6 MR. SCHADE: I can only draw parallel to Owens Lake.
7 Owens Lake has a delta, actually two deltas, one small creek
8 delta and the Owens River Delta that have created the type
9 of deltas you are talking about. But in a desert
10 environment you get a lot of sand-sized material coming off
11 of the desert washes. It doesn't happen very often, but
12 when it happens it brings a lot of material. And so flash
13 flooding would be a significant source of coarse material as
14 well.

15 MR. OSIAS: So, that is an additional factor to take
16 into account, but at least -- remember I am actually being
17 careful saying significant contributions, not like total
18 elimination?

19 MR. SCHADE: Right.

20 MR. OSIAS: If you control the delta areas of the three
21 rivers, you make a substantial contribution to sand source,
22 correct?

23 MR. SCHADE: Yes.

24 MR. OSIAS: Something maybe you'd recommend?

25 MR. SCHADE: Absolutely. The more sand you can tie up

1 the better.

2 MR. OSIAS: I think you talked about on redirect the
3 salinity sitting over this mixture of sand and soils and
4 all. Does it make a difference when the lake bed is left
5 behind how long it had been submerged?

6 MR. SCHADE: Make a difference for what?

7 MR. OSIAS: For emissivity. In other words, if the Sea
8 covered it for a year and then left, would that have a
9 different emissivity problem than it had been sitting there
10 for 50 years?

11 MR. SCHADE: Yes, I think that it would.

12 MR. OSIAS: Have you done any studies of the areas
13 around the Sea to know how long any particular areas have
14 been submerged?

15 MR. SCHADE: No, I haven't.

16 MR. OSIAS: But at least using significant different
17 numbers the shorter the better for an emissivity problem?

18 MR. SCHADE: Yes.

19 MR. OSIAS: I think lastly, do you know what CH2MHill
20 testified to at this hearing when asked if they were doing
21 further studies on air?

22 MR. SCHADE: No.

23 MR. OSIAS: Would you be pleased to hear that they said
24 they're studying it more?

25 MR. SCHADE: That would please me, yes.

1 CHAIRMAN BAGGETT: Thank you.

2 I have no questions.

3 MR. FECKO: I have a few, just a few.

4 ---oOo---

5 CROSS-EXAMINATION OF DEFENDERS OF WILDLIFE

6 BY STAFF

7 MR. FECKO: Your counsel asked some questions about
8 soil and salt at the edges of Owens. I'm trying to
9 understand.

10 When you said it drains in your original testimony, you
11 had installed some drains?

12 MR. SCHADE: Yes.

13 MR. FECKO: Are those like tile drains?

14 MR. SCHADE: Like tile drains. In some cases they've
15 been actually open drains, just steep sided ditches. But in
16 most cases they are perforated tile drains.

17 MR. FECKO: Would you consider -- I should first ask
18 how long has that land been drained in that fashion?

19 MR. SCHADE: Just a few years. In the mid '90s that we
20 really started our large scale vegetation project.

21 MR. FECKO: What have the results been? Has a
22 significant amount of salt been leached from the soil?

23 MR. SCHADE: Yes. Certainly enough to allow for
24 vegetation to be reestablished. As I said, the soils are
25 about three times too salty to allow any plants to grow. We

1 brought them down at least three times.

2 It is also not just the salt you have to worry about.
3 At Owens Lake and with salt grass there are other
4 constituents, namely, boron that are plant toxic, that
5 actually leach slower than the salts do. So we have to be
6 careful that you are not just talking about salt when you're
7 talking about whether you can grow plants or not.

8 MR. FECKO: If you continue to leach those soils they
9 would eventually become even productive soils?

10 MR. SCHADE: Yes, they would. That is not something
11 that we want to do at Owens Lake, however. The problem with
12 putting too much freshwater on these unconsolidated clay
13 soils is it causes them to, what is called, seal up. If you
14 dump a lot of fresh water really fast what happens is the
15 soils, the clay seals, and then the water won't go through
16 it.

17 So we actually -- the City is using aqueduct water,
18 which is very clean water. They are actually blending
19 saltwater from the drains back into the water for two
20 reasons.
21 Number one, that keeps the soils from sealing. And, number
22 two, the salt grass that we are growing prefers a little bit
23 of salt. It doesn't do well in freshwater because it likes
24 to -- it doesn't -- there are no weeds at all because it
25 doesn't have to compete with anything. So it sounds kind of

1 ludicrous, but we actually add salt back to the irrigation
2 water for both of those reasons.

3 MR. FECKO: But eventually you would like those soils
4 that you are trying to reclaim to be sort of
5 self-reproducing; you want a crop, not a crop cover, but
6 some sort of natural vegetation that didn't require constant
7 maintenance?

8 MR. SCHADE: We feel that -- that's the aim. We start
9 with salt grass, and it requires -- it's not -- it will
10 never sustain itself on precipitation only. We get four
11 inches of rain. Salt grass takes about two and a half feet
12 of water. So we are way off on natural precipitation.

13 Our goal and any goal I'm talking is decades, many
14 decades in the future, is once you get dust control with the
15 salt grass and it uses quite a bit of water, you start to
16 transition then towards a more desert-type environment. You
17 start to put a few shrubs in, a few desert-type shrubs.
18 Maybe as those shrubs got large enough and a large enough
19 cover, cover the 30 to 50 percent we require, then you can
20 start decreasing the water that maintains that salt grass
21 such that maybe the salt grass would die naturally. You
22 would drought it out and then you would have plants that
23 would be more -- would be closer to natural precipitation.

24 We don't think, based on the soils we have down there,
25 that we will ever be down to zero, that the City of Los

1 Angeles is ever going to vegetate this thing and walk away,
2 at least not for many, many decades.

3 MR. FECKO: Thanks.

4 CHAIRMAN BAGGETT: No other questions.

5 Would you like your exhibits into evidence?

6 MR. FLETCHER: I would move Defenders' Exhibits 1
7 through 31 into evidence.

8 CHAIRMAN BAGGETT: If there is no objections --

9 Do you have 32?

10 MR. FLETCHER: Yes, I introduced a 32. That's Pacific
11 Institute's comments on the DEIR. I didn't introduce those,
12 I handed out copies.

13 CHAIRMAN BAGGETT: That would be?

14 MR. FLETCHER: Exhibit 32.

15 CHAIRMAN BAGGETT: We have it.

16 If there is no objection --

17 MR. OSIAS: Just one minute, your Honor. Just trying
18 to check the list here.

19 No objection.

20 CHAIRMAN BAGGETT: So entered.

21 The witness is excused.

22 Thank you.

23 Want to try to get your Audubon? Mr. Yates, do you
24 want to go before we take a lunch break, you have two
25 witnesses.

1 MR. YATES: Mr. Chairman, I was wondering you want me
2 to provide the opening statement at this point in time and
3 start with the witnesses.

4 CHAIRMAN BAGGETT: You have 30 minutes or so, 25. Do
5 you want to do your opening and one witness and break for
6 lunch?

7 I don't want to disrupt your flow. If that would work,
8 that would probably be --

9 MR. YATES: That is fine.

10 CHAIRMAN BAGGETT: If they aren't integral to each
11 other, the subject matters.

12 MR. YATES: Mr. Chairman, my name is Bill Yates. I am
13 here on behalf of National Audubon Society California. I
14 appreciate the opportunity to provide this introduction,
15 kind of summarize our purpose of Audubon's testimony.

16 We will present two witnesses, Dr. Nils Warnock of the
17 Point Reyes Bird Observatory, who has done extensive field
18 research on birds at the Salton Sea. Dr. Warnock and his
19 colleagues have written extensively about their research at
20 the Sea, and some of his documentaries are attached as
21 exhibits in support of the testimony he will to the Board
22 today.

23 Also, Daniel Taylor, until May 1 of 2000 was the State
24 Director of Audubon and is now serving as vice president for
25 State Programs as the acting state director of Audubon

1 California. And it was essentially Audubon California and
2 its local California chapters that launched a campaign to
3 focus attention on the flight of the Salton Sea, amidst the
4 reports of die-offs at the Salton Sea, and the need to take
5 efforts necessary to restore this phenomenal resource for
6 the birds that depend on the Sea and its environment.

7 In 1998 Audubon formed the Audubon California Task
8 Force to closely monitor the Salton Sea Restoration Project
9 being presented by the Bureau of Reclamation and the Salton
10 Sea Authority.

11 Audubon's testimony will focus on the plight of the
12 birds and the Salton Sea that will be significantly,
13 irreversibly and adversely affected by the Imperial
14 Irrigation District San Diego County water transfer as
15 proposed. Audubon's testimony complements testimony that
16 has been presented by other environmental organizations
17 which, like Audubon, recognize the importance and
18 significance of the IID water transfer, but resist a
19 transfer proposal that will simply frustrate ongoing efforts
20 to restore the Salton Sea.

21 Unfortunately, the narrowly circumscribed Draft EIR/EIS
22 that has been prepared by Bureau of Reclamation and the
23 Imperial Irrigation District has failed to adequately
24 evaluate the consequences of the proposed water transfer on
25 the Salton Sea. In particular, the authors of the Draft

1 EIR/EIS treat the Sea as if it is now a nuisance or a prior
2 mistake that now stands in the way of reducing California's
3 use of the over subscribed Colorado River and carrying out a
4 precedent setting agriculture to urban water transfer
5 program.

6 With a loss of over 95 percent of the historic wetlands
7 within California, the Salton Sea is increasingly important
8 for migratory water birds. As Dr. Warnock will discuss, the
9 Salton Sea has become an important link in habitat and food
10 chain that sustains the perpetual migratory cycles for the
11 many species of birds within Western North America. The
12 Salton Sea indeed has become known as one of the crown
13 jewels of avian biodiversity.

14 The seasonal movement for migratory species of birds
15 follow a general but complex pathways that take birds from
16 the breeding grounds to wintering grounds and subsequently
17 back to those breeding grounds. That journey must be
18 supported by the availability of appropriate habitat and an
19 adequate food base. Those essential factors must be
20 satisfied within the limits of a bird's flight and energy
21 level in order to provide for the return of sufficient
22 numbers of birds in a physical condition that facilitates
23 long-term population maintenance.

24 The Salton Sea provides such a central habitat for vast
25 numbers of birds during the migratory process.

1 So rare, yet so essential is this oasis for hundreds of
2 thousands of migratory birds. The Sea's protection deserves
3 equal dignity with the proposed transfer project. Consider
4 the current evolution of the Salton Sea has occurred almost
5 within the lifetime of participant Bill Du Bois.

6 His life, rich with experience and character, raised
7 from a pioneering farming family, but in a geologic time a
8 mere blip on the monitor.

9 There can be no more inundations of the Salton Trough.
10 Through our great feats of engineering, we have eliminated
11 the source for future inundations, the untamed Colorado
12 River. The Salton Sea now receives its inflow after it has
13 been used on the agricultural fields in the Imperial
14 Valley.

15 Audubon believes this Board has an obligation to
16 protect the Salton Sea as far as feasible, even if this
17 means a reconsideration of past water allocations. In 1946
18 the legendary storyteller of Southwestern Indian culture,
19 Frank Waters, the author of *Masked Gods: Navaho and Pueblo*
20 *Ceremonies*, *The Man Who Killed the Deer* and *The Book of the*
21 *Hopi*, authored a book entitled *The Colorado*. The book is
22 one in a series of books of famous rivers of America. In
23 his book *Waters* describes the Colorado as an outlaw among
24 American rivers. To quote Waters, he says: As no other, it
25 is the savage and unpredictable of mood, peculiarly American

1 in character. It has for its background the haunting sweep
2 of unlimited horizons, the immensities of unbroke
3 wilderness. From perpetually snow-capped peaks to stifling
4 deserts below sea level. It cuts the deepest and truest
5 cross-section through the continent. Despite a score of
6 other names, it has become known at least simply by its one
7 unchanging color. In Spanish the Rio Colorado, the great
8 Red River of the West.

9 After reviewing the history of man's influence on the
10 Colorado, including the agricultural development of Imperial
11 Valley, the Salton Sea and the construction of Boulder and
12 Parker Dams with more forecast to come, Waters in 1946
13 opined: So today we stand at the threshold of a new era
14 whose extent no man can foresee. The last great wilderness
15 of American's being transformed from modern man. Its vast
16 arid desert green and blossom. Its dark primeval forests
17 gleam with lights. The roar of machines replaces that of
18 the cougar in his lonely canyon, the whir and flap of fan
19 belts, those of wild hawks' wings. Man has at last
20 conquered the land. But to what ultimate end none can say.
21 There is only a vague and quiet feeling that in all his
22 scheme of domination there is something he might have
23 forgotten. They may well be that the river itself will have
24 the last word.

25 Which one of us dares assume that one transient race of

1 men in a short span of a few hundred years can do more than
2 retard for a geologic moment the river's immemorial and
3 immeasurable task of transporting bodily the whole vast
4 Colorado pyramid into the sea. We measure minutes. The
5 river ignores millenniums.

6 Today, merely 56 years after Waters' book was released
7 we are being driven to act precipitously on this application
8 in order to begin to reduce California's use of the
9 oversubscribed and harnessed Red River of the west.
10 Clearly, California's water agencies must look for ways to
11 provide water for growing urban populations and make up what
12 Colorado can no longer provide. By necessity the agencies
13 must act with the relevant moment. We are all captured
14 within this moment as we grapple with the unique and
15 perplexing water management challenges. We cannot retreat
16 to 1905, or even 1946. Surely we will use what we have
17 learned from those experiences in evaluating our future
18 needs.

19 Audubon hopes the protection of the Salton Sea, that
20 last remnant of the former outlaw Red River of the west,
21 will cause this Board to pause and evaluate the false claim
22 that the proposed transfer project will only have a temporal
23 impact. If this claim is true, than the proposed transfer
24 should not inhibit Audubon's, the Salton Sea's or Congress'
25 ability to find a solution that also protects the Salton Sea

1 and all those species that have come to depend upon this
2 isolated appendage of the Colorado River.

3 A conditional approval that does not frustrate the
4 ongoing effort to protect the unique biodiversity within the
5 Salton Sea and the surrounding agricultural community is the
6 only acceptable solution at this time. Authorizing in the
7 change of diversion to benefit San Diego County cannot come
8 at the expense of the public trust interests within the
9 Salton Sea and the local economies of Imperial County.

10 Like it or not, since 1905 the development of Boulder
11 Dam which began the process of harnessing the outlaw river
12 of the west, the Salton Sea, the Imperial Valley, the
13 Imperial Irrigation District are all hitched together, to
14 steal a phrase from John Muir. The use of IID's water comes
15 with a significant price tag, the environmental needs of the
16 Sea and the economic needs of the local community.

17 Thank you.

18 (Reporter changes paper.)

19 CHAIRMAN BAGGETT: Back on the record.

20 We will try to do one witness before lunch.

21 ---oOo---

22 DIRECT EXAMINATION OF NATIONAL AUDUBON SOCIETY - CALIFORNIA

23 BY MR. YATES

24 MR. YATES: Thank you, Mr. Chairman.

25 Good morning, Dr. Warnock.

1 DR. WARNOCK: Good morning.

2 MR. YATES: You have before you your written testimony
3 that was submitted to the State Water Board I believe on
4 April 10, which I believe is Audubon Exhibit 10?

5 DR. WARNOCK: Yes, sir.

6 MR. YATES: Also, you have before you Audubon Exhibit
7 11 which is your Curriculum Vitae; is that correct?

8 MR. WARNOCK: That's correct.

9 MR. YATES: Do you wish to make any changes,
10 adjustments to your testimony based on what you heard in the
11 last couple of days?

12 DR. WARNOCK: No, sir.

13 MR. YATES: We are, in fact, making one slight change
14 in the text around the slide; is that correct?

15 DR. WARNOCK: Correct, yes. Under a slide, it is the
16 second page of my testimony, there is a slide called the
17 important species. I just shifted the statement on the Yuma
18 clapper rail, 40 percent of North American population of
19 endangered Yuma clapper rails, I shifted a statement on that
20 to the next slide. So important breeding species because
21 that is a breeding species in the state.

22 MR. YATES: Mr. Chairman, I have been reminded by my
23 colleague that we need to swear in my witnesses.

24 (Oath administered by Chairman Baggett.)

25 MR. YATES: Please summarize your expertise in research

1 regarding the birds within the surrounding area of the
2 Salton Sea if you would, Doctor.

3 DR. WARNOCK: Yes, I have a Ph.D. in ecology awarded
4 jointly by San Diego State University and U.C. Davis, and I
5 work for the Point Reyes Bird Observatory or now known as
6 PRBO Conservation Science.

7 PRBO was the first bird observatory established in the
8 United States. We have been around for about 35 years. We
9 currently have over 50 full-time staff and an additional 50
10 to a hundred seasonal biologists working for us. We do
11 research all over the west, and we have done a significant
12 amount of research at and around the Salton Sea.

13 My own experiences at the Salton Sea began in the mid
14 1980s, I think 1986, doing surveys for snow plovers around
15 the Sea, where we really walked around the Sea looked for
16 snowy plover nests. I also helped organize comprehensive
17 shorebird surveys of the Sea.

18 The first ones that were ever done in the late 1980s,
19 and then I was the principal investigator of the
20 reconnaissance study done in 1999, the first reconnaissance
21 study of birth distribution and abundance of the Sea that
22 went through that year. It was a study funded by the EPA
23 and funds were administered by the Salton Sea Authority.

24 MR. YATES: Unmask your presentation.

25 What is the history of the bird life that predated the

1 current Salton Sea?

2 DR. WARNOCK: Well, I think one of the important
3 considerations about the history is knowing a little bit
4 about the proximity to other sources of colonization. The
5 Gulf of California is only about 175 kilometers away. There
6 is a lot of turnover of birds between the gulf and the
7 Salton Sea, and additionally you have the Colorado River,
8 the riparian zone of the Colorado River running down into
9 the Salton Trough which funnels birds down.

10 Now, if we look at the history of the Sea prior to the
11 reflooding in 1905, when we look for actual data, those data
12 are very scant, and we have to look at different types of
13 information, some of which we have heard already in the past
14 few days.

15 In the 1850s, there is accounts from geologists from
16 William Blake's journey in which in his talking with the
17 Native Americans of the region they describe ancient lakes
18 with abundant waterfowl and other wildlife. And then
19 additionally contents of middens that have been analyzed
20 looking as fossil records suggest that the avifauna of the
21 ancient lakes are similar to the present-day Sea.

22 Now, our first real data on birds and bird numbers
23 really don't begin until the Sea, now known as the Salton
24 Sea, was established in '05 and '06. In 1908, eminent
25 ornithologist Joseph Grinnel went to the Sea and counted

1 large numbers of water birds using the Sea, over a thousand
2 white pelicans nesting and large numbers of other water
3 birds using the Sea.

4 MR. YATES: That would be shortly after the creation of
5 the current Salton Sea, correct?

6 DR. WARNOCK: Yes, two, three years after.

7 MR. YATES: You also mentioned in your written
8 testimony reference to Bill deBuys book, Salt Dreams, and
9 Blake's journey and those discoveries. I would like to read
10 this one passage from his book. It says: Over the
11 millennia the repeated manifestations of Lake Cahuilla offer
12 a similar place of rest, the nourishment for the hundreds of
13 species and millions of individual birds that migrated along
14 the Pacific Flyway. When the Colorado River flowed into the
15 sink and the delta was starved for water, the lake promised
16 alternative habitat. As the lake grew salty and shrank, the
17 delta bloomed. The mutual history of the lake and delta,
18 the habitats they made available covered an enormous range
19 of possibilities. The lake wholly fresh or hypersaline, the
20 delta in its lagoons running the gamut of brackishness.

21 Do you think that is an accurate reflection of what the
22 prehistory of the use of the delta and the Salton Sea or
23 Lake Cahuilla would have been?

24 DR. WARNOCK: Yes, sir.

25 MR. YATES: What is the importance of the Sea to the

1 birds today?

2 DR. WARNOCK: Well, I would say that currently the
3 Salton Sea and its surrounding valleys are of international
4 importance to bird populations, especially to water birds.
5 If we look at the lists, I will just quickly go through this
6 since most of you have seen it.

7 Over 400 species of birds have been recorded at the
8 Sea. So extremely high diversity. A hundred breeding
9 species of birds. On any given day there is low hundreds of
10 thousands of birds that use the Sea. And we have high day
11 single counts of greater than 3,000,000 birds. And the
12 majority of these birds tend to be water birds. Although I
13 emphasize there that we know more about water birds than we
14 do about land birds.

15 The Salton Sea area is of international importance to
16 migrating birds. We have in some years 90 percent of North
17 American's population of eared grebes using the Sea; 30 to
18 50 percent of the world's population of mountain plovers
19 might use the adjacent agricultural areas; 20 to 30 percent
20 of the North America's breeding population of American white
21 pelicans, and a much higher percentage of the western
22 population may stop at the Sea.

23 As I said earlier, it is also of national importance to
24 various breeding bird species. Studies have found 40
25 percent, roughly 40 percent, of the U.S. population of the

1 endangered Yuma clapper rail breeding at wetlands at and
2 around the Sea. And then some of the West's largest
3 breeding populations of the double-crested cormorants,
4 gull-billed terns, Caspian terns, black skimmers and a
5 variety of other species.

6 MR. YATES: What is the distribution of birds within
7 and around the Salton Sea?

8 DR. WARNOCK: Well, based on our studies in 1999, the
9 distribution -- you find birds all around the Sea and on
10 the Sea. But the distribution is not uniform. There are
11 areas of particular importance. The north end of the Sea
12 around the mouth of the Whitewater River and you will notice
13 the pattern at the mouths of the rivers tend to be important
14 for water birds. The north end attracts large
15 concentrations of foraging and roosting water birds. And it
16 is also a nesting area for colonial water birds that nest in
17 the snags out in the water.

18 The western side, sort of the southwestern side, you
19 can see the dark blue, the numbers, six, seven and eight,
20 very important area for snowy plover, and the Salton Sea
21 supports a very large breeding population of snowy plovers
22 in the largest interior wintering population in the West.

23 The southern part of the Sea, we had our highest
24 numbers of birds, particularly in the areas abutting the
25 National Wildlife Refuge and state wildlife areas, the

1 Wister area.

2 And then on the eastern side we had lower numbers, but
3 still significant numbers of gulls and pelicans using the
4 shoreline. And then finally, these adjacent areas to the
5 Sea, the fields adjacent to the Sea and some of the
6 surrounding wetlands are extremely important to certain
7 species of birds. Some of the waders, like the cattle
8 egrets, white-faced ibis, cranes, will roost there in large
9 numbers, many tens of thousands. And then, as I already
10 indicated, some internationally significant numbers of
11 mountain plover. Additionally very significant numbers of
12 things like the long-billed curlew.

13 MR. YATES: The diversity of birds that utilize the
14 Sea, could you explain some of the different feeding
15 behavioral patterns of the birds and why they might be
16 distributed differently at various locations on the Sea?

17 DR. WARNOCK: Well, a lot of the distribution
18 especially for birds in the wintertime is driven by their
19 ability to access suitable food resources and that, of
20 course, is driven by the morphology.

21 The gulls and pelicans, fish eaters, and they tend to
22 concentrate where they're finding fish of suitable size to
23 feed on, as do the waders, the big waders with stilts. The
24 egrets and herons can get to deeper waters and fish.

25 A lot of the shorebirds, they're fairly small birds and

1 they require shallow water habitat to feed in,
2 generally. There are some exceptions. And the water
3 typically may show preference for water less than about four
4 inches deep. And because their legs just aren't long enough
5 to touch the ground and they don't typically swim except for
6 a few species like the phalaropes. Some of the open water
7 of the Sea is dominated by birds like the eared grebe,
8 different waterfowl species and some of the gulls and
9 pelicans.

10 MR. YATES: What is the likely impact of increasing
11 salinity of the Salton Sea for fish eating bird species?

12 DR. WARNOCK: Well, irregardless of whose models that
13 you use, it does seem that salinity levels are increasing at
14 the Sea, and the eventual impacts are still unknown,
15 although we do have some good benchmarks where we know
16 things will happen.

17 When the fish disappear, and again those what the
18 tolerance range of the fish are varies, as Dr. Hurlbert
19 pointed out yesterday. When the fish disappear, we will
20 lose most of our fish eating birds. They won't have the
21 prey there to eat or it will be a greatly reduced fish
22 supply, maybe at the mouths of rivers et cetera. So that
23 probably will be a dramatic change in diversity since you
24 lose a large number of fish eating birds. And with that
25 you'll lose a lot of the large breeding populations of the

1 fish eating birds since they won't have food resources to
2 feed their young.

3 So, I think that is one of the more dramatic changes.
4 Then as the salinity levels change, it changes the
5 invertebrate community of the Sea which, again, these birds
6 are feeding on different invertebrates, and that undoubtedly
7 will have an impact.

8 MR. YATES: Can you anticipate a decline in the
9 diversity of the bird species at the Sea?

10 DR. WARNOCK: If the fish disappear, I would anticipate
11 a decrease in avian diversity at the Sea.

12 MR. YATES: What is the impact of the decreasing sea
13 elevation of the birds on the Sea?

14 DR. WARNOCK: I just wanted to back up for a second on
15 the salinity issues. In that we have been doing a lot of
16 work with San Francisco Bay on salt ponds and salinity
17 issues. And I am frequently asked, "Will all the birds
18 disappear?" And I think, no. We do get a number of birds,
19 of waterbirds, in the salt ponds. You can see in 1999-2000
20 when we counted ten salt ponds, we recorded 51 species of
21 waterbirds. And 2000, 74 species of waterbirds at the same
22 time we found there is a relationship with salinity. The
23 higher the salinity goes, the diversity of waterbird species
24 does decrease significantly.

25 Along with increasing salinity levels, the water levels

1 are projected to decrease, and that has a number of
2 potential effects. If the water levels decrease at a faster
3 level than vegetation can respond, especially breeding
4 vegetation, this could potentially have negative
5 consequences for many of the breeding waders. These are
6 boreal waders like herons and egrets. They are nesting up
7 in trees in the tamarisk groves. And as these groves get
8 further and further from the lake bed, it increases the
9 distance that the adults have to go to get food for
10 themselves and for their young. So energetic cost increase,
11 and it also isolates the vegetation groves where it makes
12 them more accessible to predators.

13 This is another problem, as we'll lose places like
14 Mullet Island. We had perhaps in 1999, perhaps, the West's
15 largest breeding colony of double-breasted cormorants. As
16 those islands get connected to the mainland, we'll start to
17 see excursions of mammalian predators that come in. And we
18 have seen from many other sites around the West, they will
19 come in and destroy breeding colonies in a matter of a few
20 days.

21 There is a concern that as water levels decrease, if
22 the slope of the Sea increases, that will decrease the
23 amount of shallow water for shorebirds to feed in,
24 particularly in the -- if you remember the graph, the
25 southeastern side of the Sea around the refuge and Wister

1 Unit there is a lot of shallow water there of less than
2 probably ten centimeters, ten or 15 centimeters, that birds
3 feed in that we'll lose foraging habitat there.

4 And, finally, if the slope of the shoreline actually
5 increases, this could have consequences for some of the
6 breeding species, like plovers, avocets which, if slopes are
7 too steep, the chicks have a hard time navigating the
8 slopes.

9 MR. YATES: With a decrease in freshwater flows and
10 increase potential nutrients, do you think there is a
11 potential for outbreaks of disease or other impacts on
12 birds?

13 DR. WARNOCK: Well, there certainly are some
14 indications, and there are other experts more qualified to
15 speak on this, but if we do increase -- if we increase in
16 the amount of certain stagnant waters in the hot weather
17 this can lead in increases in avian disease. And as more
18 substrata exposed, there is concern that there is more
19 exposure to contaminants such as selenium, which has been
20 suggested already.

21 MR. YATES: Is there a comparable habitat today, as
22 deBuys talked about, how the delta and the earlier
23 inundations of the Salton Sea interact with one another and
24 the birds would go from one place to the next? Do we have
25 anything comparable today if, in fact, the Salton Sea, the

1 demise of the Sea was being accelerated to the point that it
2 was no longer available for these fish eating birds?

3 DR. WARNOCK: I am frequently asked that question about
4 what will happen to birds if Salton Sea, and oftentimes
5 people put it in dramatic terms of, "If lost the Salton Sea
6 where would birds go?" And we don't really know. We have
7 other examples of this and we spent the morning talking
8 about Owens Lake. That is a great example.

9 The lake, if you read historical accounts of the lake,
10 there is accounts of millions of waterfowl using that body
11 of water. And we certainly don't see those numbers of birds
12 at that site anymore. Where they went, we don't know.

13 We have data on the conductivity of the Salton Sea to
14 other wetlands within the west and in the north and really
15 the Western Hemisphere. And Dr. Krantz and University of
16 Redlands put a lot of these data together. We know that
17 birds like the American white pelican, they will move from
18 the Salton Sea, between the Salton Sea, the Western Great
19 Basin, the Great Salt Lake. They will do really amazing
20 movements within their breeding season and postbreeding as
21 they disperse to Mexico.

22 California gull banded birds have been seen that come
23 from breeding areas in Wyoming going through the Salt Lake
24 and ending up at the Salton Sea. Black crown and white
25 herons move between the Western Great Basin. Shorebirds, I

1 have just been finishing up a study where we put radios on
2 shorebirds in Mexico, like this western sandpiper. We have
3 birds moving through the Salton Sea as they migrate up
4 towards their breeding grounds in the north. So, we know
5 from the waterfowl data, from the hunting recoveries of
6 banded birds like the snow geese and northern pintail, we
7 know that the connectivity of the Salton Sea is tremendous
8 to other sites around North American, Central American, even
9 South America.

10 So, there is a lot of connections. Birds will move all
11 over the place. Now if we -- for these birds it is really
12 -- it is about habitat, having suitable habitat to go to.
13 The immediate suitable habitat would be Colorado River
14 Delta. But I would suggest that the delta wetlands have --
15 they face the same problems of the Salton Sea. They've
16 declined by 95 percent. And I wouldn't be confident that
17 the delta could compensate for the loss of the Sea.

18 If we look at the rest of the West, if we look in terms
19 of habitat loss, percentage of wetlands acres that have been
20 lost in the last 200 years, at least up through the 1980s,
21 and it is a staggering amount of wetlands habitats have been
22 lost; 91 percent in California, 52 percent in Nevada; 33
23 percent in Arizona.

24 That is not an encouraging picture to see when you're
25 trying to find other suitable habitat. This wetland lost

1 continues. Between '85 and '95, the annual rate has
2 certainly decreased but we are still losing a tremendous
3 amount of habitat per year.

4 CHAIRMAN BAGGETT: Mr. Yates, I wanted -- you're
5 cutting into the time of your next witness.

6 MR. YATES: With the accelerated change in Salton Sea
7 to a hypersaline pose and irreversible threat to some
8 existing bird populations of the Sea?

9 DR. WARNOCK: I would say, certainly, for the fish
10 eating birds it would pose a long-term threat to those water
11 bird populations, yes. And there are other species I think
12 you can make a case for that.

13 MR. YATES: I have no further questions.

14 CHAIRMAN BAGGETT: Let's take a lunch break and do you
15 want to take a short lunch so we can get done or take a full
16 hour?

17 We'll come back at 1:15, then.

18 (Luncheon break taken.)

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AFTERNOON SESSION

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CHAIRMAN BAGGETT: Back on the record.
Finish with the direct of Audubon witnesses.

MR. YATES: Thank you, Mr. Chairman.
Change my heading here.

Good afternoon, Mr. Taylor.

MR. TAYLOR: Good afternoon, counselor.

MR. YATES: Your written testimony and biographical information is set forth in Audubon Exhibit 17. Do you have that testimony?

MR. TAYLOR: Yes, I do, and it's correct.

MR. YATES: You were present yesterday and listened to the direct and cross-examination of many of the witnesses presented. In fact, you confided in me that this is kind of deja vu as far as this discussion about hypersalinity and elevation of Salton Sea?

MR. TAYLOR: Yes.

MR. YATES: Do you wish to amplify or modify any portion of your written testimony that has been submitted to the State Water Board?

MR. TAYLOR: No.

MR. YATES: Would you explain your experience and background with the National Audubon Society and National Audubon California?

1 MR. TAYLOR: Sure. For almost 25 years I've been on
2 the staff of Audubon here in the state of California. For
3 most of that time serving as western regional
4 representative. For the last six as state director of the
5 organization and as of May 1st moving in a national capacity
6 where I will be serving Audubon programs in several states.

7 During that time my responsibilities included efforts
8 for water reform, most notably the Mono Lake case, an issue
9 which was filed one year after I joined the staff in 1979.
10 So one of my responsibilities was to provide staff support
11 as liaison with public officials and with the community on
12 the Mono Lake issue as it went through state court, federal
13 court and then finally to this body, where it was resolved
14 in 1994.

15 MR. YATES: Thank you.

16 Do you concur with Dr. Warnock's assessment of the
17 importance of the Salton Sea to birds?

18 MR. TAYLOR: Yes, I do.

19 MR. YATES: In fact, your written testimony is filled
20 with notations about the importance of the Sea to bird life
21 and especially migratory birds citing Dr. Shuford and Dr.
22 Warnock's work, correct?

23 MR. TAYLOR: Yes.

24 MR. YATES: I think rather than go through that since
25 we've already got it in Dr. Warnock's presentation, what

1 peaked Audubon's interest in getting involved in Salton
2 Sea?

3 MR. TAYLOR: Audubon has been involved with the Salton
4 Sea for almost 40 years, beginning in the mid '60s with the
5 Christmas bird counts, which took place at Salton Sea among
6 many other places throughout the country. We've known about
7 the Salton Sea. We appreciated it and valued it as a
8 birding resource for much of that time.

9 Into the 1990s we began to notice that there were
10 things, the processes underway at the Salton Sea which were
11 cause of growing concern, including large bird die-offs in
12 the early 1990s. During almost all of that time, we were
13 almost totally occupied by the debate over Mono Lake. Our
14 resources and talents were being applied to the Mono Lake
15 issue. As that began to resolve itself in 1994, 1995, that
16 roughly coincided with the change in what was occurring at
17 the Salton Sea, where the interest of the place from a
18 recreational perspective and ecological perspective really
19 began to take shape as an important habitat which was facing
20 significant risk. That interest further was precipitated by
21 the bird die-offs in 1996, 1997.

22 In 1997 the 51 Audubon local chapters from Arcadia to
23 San Diego lobbied me to become active and engaged in the
24 Salton Sea issue, which we did. Among other things we did
25 early on was to form a volunteer task force of specialists

1 who would be available to help us in assessing the issues
2 and what the opportunities were at the Salton Sea. That
3 gave way to all sorts of action. It really, to summarize,
4 our interest was precipitated by mortalities of 1996, 1997,
5 the realization that something very important and a very big
6 deal for birds at risk.

7 MR. YATES: So it shouldn't surprise any that birders
8 in particular would be alarmed to read about deaths of
9 thousands of white and brown pelicans?

10 MR. TAYLOR: That's correct. In fact, when the
11 die-offs of pelicans was noted, especially brown pelican
12 which is a federally protected, threatened, endangered
13 species. It was the largest individual die-off of a listed
14 species in the history of the country, and that made news
15 and certainly the New York Times and media throughout the
16 country, and it certainly made us stand up and take notice
17 that something very, very unusual and potentially dangerous
18 was underway at the Salton Sea.

19 MR. YATES: You mentioned that local chapters in
20 National Audubon came together to form the Audubon Salton
21 Sea Task Force.

22 Would it be fair to characterize your early involvement
23 in this issue as somewhat of a lonely vigilance?

24 MR. TAYLOR: Yes, it certainly was. The Salton Sea, as
25 of us, I think, in this room will attest, is a very

1 complicated paradoxical place. Its values for nature and
2 its importance to the local economy and local society and to
3 California has become much more defined and understood. But
4 early on it was a bit of a lonely vigil.

5 I am very pleased to see how various institutions of
6 government from the federal government to state government
7 to local government have appropriately begun thoughtful
8 response to the Salton Sea. And being joined by our
9 colleagues in the environmental community, in that regard
10 it's been very gratifying.

11 MR. YATES: Is the restoration of the Salton Sea for
12 the benefit of the bird species that depend upon it as a
13 high priority for Audubon?

14 MR. TAYLOR: Yes, it is.

15 MR. YATES: Have you been working with the Salton Sea
16 Authority and other entities on that?

17 MR. TAYLOR: Yes, we have. We have -- since its
18 inception, we have worked closely with the Salton Sea
19 Authority and with other institutions to further our
20 understanding of the Sea. In addition, to forming our own
21 task force we have funded portions of rehabilitation and
22 injured birds that have taken place, have been harmed or
23 injured at the Salton Sea. We have lobbied Congress to pass
24 various measures pertaining to the Salton Sea as we have the
25 State Legislature.

1 Each year we stage dozens of field trips to the Salton
2 Sea where people from throughout the Western United States
3 and throughout the country, for that matter, go to
4 appreciate and explore the bird resources there. We
5 participated in the Salton Sea Bird Festival and the Salton
6 Sea Symposium that have been held since they began three or
7 four years ago.

8 MR. YATES: Has Audubon California, through its Salton
9 Sea task force, adopted some guidance principles with you to
10 advocate for restoration of the Sea?

11 MR. TAYLOR: Yes, we have. Early on we -- while
12 appreciating the complexity that the Salton Sea presented,
13 we decided to delineate what it is that we stood for to help
14 guide our advocacy work. If I may, I would like to just
15 report on, summarize a few of those.

16 One is we definitely understand the important linkage
17 between agriculture and Imperial and Riverside Counties and
18 the future of the Salton Sea. So we have been guided by the
19 principle of embracing environmentally friendly, wildlife
20 friendly, farming because farming is essential to the
21 continuation of the Salton Sea as an important ecosystem.

22 We have also advocated and not been shy in promoting
23 the idea of perhaps a big project that will be required to
24 begin the restoration process at the Salton Sea. After all
25 it took massive projects to replumb the Colorado River, and

1 we believe that it is the right question to ask, to engage
2 government to look at large projects to do environmental
3 good. We are seeing that happen in various parts of our
4 state and our country.

5 We also have been guided by the notion of the
6 importance of addressing inputs, because the Salton Sea
7 depends largely on agricultural runoff. The materials
8 carried in that runoff have an affect on the place. We do
9 know that the Salton Sea is a highly eutrophic environment
10 and that controlling inputs is an essential challenge that
11 we must face to make sure that the Salton Sea persists.
12 Certainly last but not least, is calling for the maintenance
13 and security of appropriate water supply for the Salton
14 Sea.

15 MR. YATES: I was taken back earlier today when we were
16 talking about your experience with that Mono Lake. And you
17 said to me that it really wasn't until the City of L.A. --
18 you had essentially provided a solution for the City of L.A.
19 that you were able to come to terms with Mono Lake.

20 Do you find similar situations here today?

21 MR. TAYLOR: That was a very compelling lesson that
22 shaped my philosophy as a professional conservationist; that
23 is, the large complex and somewhat untractable conservation
24 disputes we face are not solved through a warfare like
25 mentality, that instead we have to really begin to

1 understand what various perspectives of issues.

2 At Mono Lake, while we first filed a lawsuit as some in
3 this room will remember, in a small Superior Court in Alpine
4 County in 1979, it really was not until the parties, the
5 State of California, the nonprofit groups, including Audubon
6 and Mono Lake Committee, the Department of Water and Power
7 in Los Angeles, the federal government, identified an answer
8 that would accommodate the fair needs of the City of L.A.
9 while at the same time protecting the Mono Lake
10 environment. At that point the gates opened up, and
11 solution was near at hand. It took us close to 16 years to
12 get to that point.

13 MR. YATES: Has Audubon taken a position on the issue
14 of agriculture to urban water transfers, generally?

15 MR. TAYLOR: Generally, we have. We have advocated
16 water conservation as an appropriate measure for the arid
17 west, and we have said publicly that the issue -- the
18 principle of a water transfer involving transfer of water
19 from Imperial Valley to even San Diego County is by
20 definition not a bad thing. We understand its role in a
21 growing, rapidly evolving Southern California economy. It's
22 how it is done. But we have made it very clear on more than
23 one occasion that the water transfer in principle is not a
24 bad thing, it is something that if done properly with proper
25 accommodations for the environmental needs in the Salton Sea

1 Basin is something that could and should be considered.

2 MR. YATES: What is Audubon's concern with regard to
3 proposed Imperial Irrigation District transfer to San Diego
4 County Water Authority?

5 MR. TAYLOR: It really gets to our fourth point, and
6 that is securing a reliable water supply. We began
7 involvement in the Salton Sea in contemporary times as a
8 response to an environmental challenge. And when it began
9 or when it became noticeable to us, there is a great deal of
10 fear and concern that literally a great environment may
11 either disappear as an important place for wildlife or be
12 significantly harmed very quickly. We did not know that
13 clearly at the time. So we began our involvement in trying
14 to grapple with these large issues. We did begin our
15 involvement aimed specifically at the water transfer. But
16 we believed as we saw the water transfer take shape that the
17 difficult challenge, yet important and critical challenge of
18 protecting the Salton Sea would be our -- the limits to our
19 options would grow ever larger if a water transfer took
20 place that would not be sensitive and mindful to the Salton
21 Sea watershed environment. That was a cause of great
22 concern. We did not want to limit our options in tackling a
23 very difficult task by remaining silent on the issue. That
24 is what brings us to this forum today.

25 MR. YATES: Thank you.

1 Mr. Chairman, I have no other questions.

2 CHAIRMAN BAGGETT: Thank you.

3 Time for cross.

4 Mr. Gilbert.

5 MR. GILBERT: Thank you, Mr. Chairman.

6 ---oOo---

7 CROSS-EXAMINATION OF NATIONAL AUDUBON SOCIETY - CALIFORNIA

8 BY MR. GILBERT

9 MR. GILBERT: I have a few questions for Dr. Warnock I
10 believe.

11 I don't mean to misrepresent you, but there has been a
12 lot of focus on the Salton Sea in these proceedings, and I
13 want to be sure that what you are saying is what I
14 understood.

15 You did mention quite a few species, including great
16 blue herons and stilts and I think at least one species of
17 gulls, cattle egrets and cranes.

18 Do those often frequent and feed in agricultural areas
19 that may be near or a considerable distance away from the
20 Sea?

21 DR. WARNOCK: Specifically the species you listed?

22 MR. GILBERT: Yes.

23 DR. WARNOCK: I would say yes.

24 MR. GILBERT: Maybe in the fields and maybe in the
25 agricultural drains or canals, also?

1 DR. WARNOCK: Typically if there is water in the fields
2 and drains, yes.

3 MR. GILBERT: And many of the hawks and harriers and
4 maybe some falcons, even the ospreys might do the same,
5 where they would feed out of canals or fields?

6 DR. WARNOCK: Yes, sir.

7 MR. GILBERT: The wading birds, I think you mentioned,
8 liked the water that was less than four inches deep. They
9 would do the same, often feeding in agricultural fields
10 while they were being irrigated, looking for insects and
11 other things.

12 DR. WARNOCK: The shorebirds?

13 MR. GILBERT: Yes.

14 DR. WARNOCK: We typically call wadings, larger herons
15 and egrets. The shorebirds, certain species use the
16 agricultural fields and others do not. Mountain plovers
17 do. Mountain long-billed curlews. There was a few other
18 species.

19 MR. GILBERT: Ibis?

20 DR. WARNOCK: Ibis which are not shorebirds. They
21 certainly do use agricultural fields.

22 MR. GILBERT: When you mentioned in and around the Sea,
23 you are not intending to infer that these would be just at
24 the Sea, but in and around would include the agricultural
25 areas as well?

1 DR. WARNOCK: Yes, sir.

2 MR. GILBERT: Would you say that the number of species
3 that are common in the IID area, including the Salton Sea,
4 has been on the increase in recent decades?

5 DR. WARNOCK: I don't know.

6 MR. GILBERT: Of the 400 species found in the area,
7 they're not all dependent on the Salton Sea, are they?

8 DR. WARNOCK: No.

9 MR. GILBERT: The same would be true of the 100 that
10 nest there?

11 DR. WARNOCK: No.

12 MR. GILBERT: And there would be many species such as
13 doves and hummingbirds and pigeons and things like that,
14 that if they were at the Sea it would only be incidental,
15 that their prime air of location would be away from the Sea;
16 is that correct?

17 DR. WARNOCK: Not necessarily. We did in 1999 a
18 significant amount of land bird work there, banding birds,
19 places like the Wister Unit and the refuge. For example,
20 the Wilsons warbler, we have the highest capture rate of
21 Wilsons warbler in the state at the Wister Unit in the
22 spring. And they're probably attracted to the riparian
23 zones that lead into the Sea.

24 MR. GILBERT: Many species such as doves and pigeons
25 would rarely use the Sea; is that correct?

1 DR. WARNOCK: Correct.

2 MR. GILBERT: That is all I have.

3 Thank you, Mr. Chairman.

4 CHAIRMAN BAGGETT: Mr. Du Bois.

5 ---oOo---

6 CROSS-EXAMINATION OF NATIONAL AUDUBON SOCIETY - CALIFORNIA

7 BY MR. DU BOIS

8 MR. DU BOIS: I have one question I would like to ask,
9 probably mainly for my own benefit. I farmed in Imperial
10 for a long time, as Bill Yates mentioned. But as I remember
11 our chief population of birds on the ranch where I was
12 raised was black birds, and we didn't look at them as any
13 great benefit to the farm. They'd eat the grain before we
14 can get it thrashed. We don't see many black birds any
15 more. But there for a while we had starlings all over. And
16 they weren't any more welcome than the black birds were.

17 Then the seagulls came in, and we had nothing but
18 seagulls for a while. The seagulls, I thought, were quite
19 beneficial because they largely follow the water in front or
20 just behind the water, and I think they ate the bugs because
21 I don't know what else there was for them to eat. But the
22 last few years I have seen nothing but egrets, not nothing,
23 but I've seen a great majority of, I think you call them,
24 cattle egrets. They are the small, not the great egrets. I
25 think they're beneficial, too.

1 This has been an evolution of various different types
2 of birds, and you are experts. Can you tell me what is
3 coming next?

4 DR. WARNOCK: No, sir.

5 MR. DU BOIS: That is my question.

6 CHAIRMAN BAGGETT: Thank you.

7 Mr. Rodegerdts.

8 MR. RODEGERDTS: No.

9 CHAIRMAN BAGGETT: Now I'll see if Mr. Rossmann can
10 follow.

11 MR. ROSSMANN: Your Honor, a tough act to follow.

12 CHAIRMAN BAGGETT: Maybe another 20 or 30 or 40
13 years.

14 MR. ROSSMANN: Yes, sir.

15 ---oOo---

16 CROSS-EXAMINATION OF NATIONAL AUDUBON SOCIETY - CALIFORNIA
17 BY COUNTY OF IMPERIAL
18 BY MR. ROSSMANN

19 DR. WARNOCK: I like that one question part.

20 MR. ROSSMANN: Well, I'll follow up on one of Mr. Du
21 Bois' questions.

22 How about burrowing owls, don't they also -- burrowing
23 owls, doesn't they also rely on the fields?

24 DR. WARNOCK: Burrowing owls do. They rely on certain
25 features of the landscape down there. I think they like to

1 nest within the dikes of a lot of the canals, within the
2 sides of the canals. So presumably the soil is loose enough
3 for them to actually get in, build burrows. And there is
4 abundant prey for them in the fields.

5 MR. ROSSMANN: I want to begin by asking, I guess, Mr.
6 Taylor. This is indeed an extraordinary situation for us to
7 find each other in. But I want to ask you to look thorough
8 some of your historical exhibits that you made reference to
9 in your testimony. And I guess I am going to begin, I see
10 you have the Salt dreams book in front of you there. So let
11 me ask you to turn to Page 54 of that book. That is Exhibit
12 Number 7.

13 I will get to the bottom line if that will shorten your
14 response. My question is: Doesn't this account by Blake
15 during his 1853 expedition show only a vanished lake or Sea
16 in the sink of the Salton Trough? And I am looking at Pages
17 53 to, well, the bottom of Page 54. The phrase, "the
18 submerged - previously submerged floor of a now vanished
19 sea."

20 MR. TAYLOR: I would trust your reading of that,
21 Mr. Rossmann.

22 MR. ROSSMANN: You haven't made an independent
23 assessment of these historical materials?

24 MR. TAYLOR: Our assessment as is in my testimony
25 really reflects primarily on the situation that we face

1 today. We did introduce several historic documents into the
2 record for the purpose of having them in the record,
3 understanding that the Salton Sea has gone through several
4 different phases in its existence. Its specific condition
5 on that specific year is, I would trust the writer of the
6 book to accurately having portrayed that.

7 MR. ROSSMANN: I see.

8 Please understand that we are just -- the County of
9 Imperial's position is one of learning as much from these
10 proceedings as anyone else.

11 Let me ask you to look at Exhibit 6, I believe it is,
12 which is actually a publication of the Imperial Irrigation
13 District entitled Historic Salton Sea and Imperial
14 Irrigation District.

15 MR. YATES: We have it.

16 MR. ROSSMANN: Would you take a moment to turn to the
17 second page of the exhibit, which appears to be the frontal
18 piece of that publication. There are some italicized
19 excerpts from the story of the first decade.

20 Do you have that in front of you, sir?

21 MR. TAYLOR: Yes, yes, I do.

22 MR. ROSSMANN: Would you take a moment to review that.

23 I ask you to focus on the following two sentences: We
24 found its basin filled with turbid water. Crossing in an
25 impoverished boat made of ox hides, we encountered the

1 desert.

2 Now I will ask you this and I will also ask Dr.
3 Warnock, because he may also have an opinion on this.

4 Is it your view that that description of a turbid basin
5 is the part of what we now know as the Salton Sea or the
6 Salton --

7 MR. OSIAS: Objection. Calls for speculation. Lack of
8 foundation. I don't think either of these gentlemen are old
9 enough to know what this author meant. We can all read it
10 as we just heard the witness say.

11 CHAIRMAN BAGGETT: Mr. Rossmann, do you have a response?

12 MR. ROSSMANN: I would like to find out if it is their
13 position that this is the Salton Sea. If they don't have a
14 position, that is a fair answer, your Honor.

15 MR. OSIAS: Independent of this text?

16 MR. ROSSMANN: I'm asking if they read this text, if he
17 reads this text to understand that that basin described here
18 is the Salton Sea?

19 MR. OSIAS: Same objection.

20 CHAIRMAN BAGGETT: Overruled. You can answer the
21 question to the best of your ability. If you can't answer,
22 so state.

23 MR. TAYLOR: Honestly, Chair, we read it as it stands.
24 We have no -- we are not prepared to offer an opinion on
25 whether or not it represents the Salton Sea at these

1 proceedings.

2 MR. ROSSMANN: Well, it is of interest to the rest of
3 us in the proceedings if, in fact, there is a claim that the
4 Sea or part of it was navigable at the time of California
5 statehood. These two sentences that I just read at least
6 create an inference that a body of turbid water in that
7 basin was navigable in 1849; is that correct?

8 MR. TAYLOR: I certainly understand you can form that
9 assessment, yes.

10 MR. ROSSMANN: Dr. Warnock, have you a separate
11 opinion, professional opinion on this based on your work?

12 DR. WARNOCK: No, sir.

13 MR. ROSSMANN: Have you, sir, Dr. Warnock, an opinion
14 as to the amount of freshwater as opposed to agricultural
15 drain water that would need to be placed annually in the
16 Salton Sea to stabilize it to the satisfaction of Audubon?

17 DR. WARNOCK: The amount -- you mean a specific
18 measurable amount?

19 MR. ROSSMANN: Yes, sir.

20 DR. WARNOCK: No, sir, I don't.

21 MR. ROSSMANN: Do you have any idea of range?

22 DR. WARNOCK: I think the current situation right now
23 is a good place to start with, but I really don't.

24 MR. ROSSMANN: If we had freshwater going into the Sea
25 as opposed to agricultural drain water, it might require

1 less water to reduce salinity than if we had the water that
2 had passed through the fields?

3 DR. WARNOCK: I assume so, yes.

4 MR. ROSSMANN: I won't pursue it if it is not something
5 you feel that you really explored.

6 Mr. Taylor, let me come back to you. The position of
7 Audubon is that the Salton Sea is a body of water of
8 national significance?

9 MR. TAYLOR: Yes.

10 MR. ROSSMANN: The resources that are dependent upon
11 the Sea likewise of national significance?

12 MR. TAYLOR: Yes.

13 MR. ROSSMANN: In your testimony you mentioned several
14 strategies for dealing with this issue. Has Audubon ever
15 considered or advocated a strategy that would place more
16 freshwater directly into the Salton Sea?

17 MR. TAYLOR: I don't believe so. No, I don't believe
18 we have expressed that opinion. The two solutions that we
19 have suggested involving water largely had to do with
20 bringing external sources of water that are seawater into
21 the Salton Sea. That has been discussed and we have
22 proffered that as an option.

23 MR. ROSSMANN: Well, in the Mono Lake case is it not
24 fair to say that the ultimate solution was something that
25 nobody imagined at the outset?

1 MR. TAYLOR: The fact that we were successful was
2 something that few of us imagined at the outset, yes.

3 MR. ROSSMANN: And the techniques in that success
4 equally unimaginable?

5 MR. TAYLOR: Remembering back to those times, and it
6 seemed like a very big challenge that we faced.

7 MR. ROSSMANN: Would it seem insurmountable to suggest
8 that if this is national problem that there might be a
9 national level solution in the allocation of Colorado River
10 water apart from that allocated to the states, that is to
11 say from the Secretary of the Interior, to be delivered
12 expressly to the Salton Sea?

13 MR. TAYLOR: We have certainly explored those ideas
14 ourselves. We have not presented them as the official
15 position of the organization in a way that would precipitate
16 action or response by appropriate parties.

17 MR. ROSSMANN: So it is an idea that is still out there
18 perhaps waiting to be acted upon?

19 MR. TAYLOR: I would say, does it exist, yes. Is it --
20 does it exist at a very high probability, the answer is
21 probably no.

22 MR. ROSSMANN: On what basis would you make that
23 assessment?

24 MR. TAYLOR: Having spent 25 years in the business of
25 water in California and believing that success may not rest

1 in that idea.

2 MR. ROSSMANN: Just a gut feeling, then?

3 MR. TAYLOR: Just a gut feeling.

4 MR. ROSSMANN: Thank you very much.

5 I have no further questions.

6 CHAIRMAN BAGGETT: Defenders of Wildlife.

7 MR. FLETCHER: No questions.

8 CHAIRMAN BAGGETT: National Wildlife.

9 Sierra Club is still not here.

10 Ms. Douglas.

11 MS. DOUGLAS: Yes, I have some questions.

12 ---oOo---

13 CROSS-EXAMINATION OF NATIONAL AUDUBON SOCIETY - CALIFORNIA

14 BY PLANNING AND CONSERVATION LEAGUE

15 BY MS. DOUGLAS

16 MS. DOUGLAS: Dr. Warnock, have you reviewed the Draft
17 EIR/EIS?

18 DR. WARNOCK: I reviewed parts of it, yes.

19 MS. DOUGLAS: Have you prepared comments for that
20 EIR/EIS?

21 DR. WARNOCK: Yes.

22 MR. OSIAS: Let me just interrupt to make sure we are
23 on the transfer EIR?

24 MS. DOUGLAS: We are talking about the EIR for the
25 project which is before the Board.

1 MR. OSIAS: The transfer.

2 CHAIRMAN BAGGETT: Water transfer.

3 MR. OSIAS: We have two EIR/EISs that are going to be
4 before the Board.

5 MS. DOUGLAS: The one project that is before the Board,
6 and that is the water transfer. I will be talking about the
7 EIR/EIS for the transfer.

8 CHAIRMAN BAGGETT: Maybe we should start by referring
9 to it as IID Exhibit --

10 MS. DOUGLAS: Five or six.

11 MR. OSIAS: We are going to look.

12 CHAIRMAN BAGGETT: I think we should have done it a
13 while ago. It would have saved some confusion.

14 MR. FECKO: 55.

15 MS. DOUGLAS: 55?

16 MR. FECKO: Yes.

17 MS. DOUGLAS: Have you -- did you prepare comments on
18 IID Exhibit 55 which is the EIR/EIS for the water transfer
19 project?

20 DR. WARNOCK: Would you say that again?

21 MS. DOUGLAS: Did you prepare comments for IID Exhibit
22 55?

23 DR. WARNOCK: Yes, ma'am.

24 MS. DOUGLAS: Are your comments included in -- let me
25 ask you, if you could, to turn to Audubon Exhibit 18.

1 DR. WARNOCK: I have it.

2 Thank you.

3 MS. DOUGLAS: If you could please go to Page 19. Just
4 quickly glance through 19 through 24.

5 Are your comments included in these pages?

6 DR. WARNOCK: Yes, ma'am.

7 MS. DOUGLAS: Just for clarification, Audubon Exhibit
8 18, what is this, just the document?

9 DR. WARNOCK: These are comments on Exhibit 55, Draft
10 transfer EIR/EIS.

11 MS. DOUGLAS: If you could, please, could you put up
12 the Power Point slide you had for the presentation depicting
13 key bird areas on the Salton Sea?

14 Now, in your opinion, does the draft EIR/EIS that is
15 now IID Exhibit 55, adequately address how the birds would
16 respond to an accelerated decline in existing conditions of
17 the Sea?

18 DR. WARNOCK: No, ma'am.

19 MS. DOUGLAS: Are you aware of the proposed fish
20 hatchery and fish pond mitigation strategy proposed as part
21 of the conservation plan attached to the Draft EIR/EIS?

22 DR. WARNOCK: Only vaguely. None of the specifics.

23 MS. DOUGLAS: Are you aware that the proposed HCP
24 called for the creation of some 5,000 acres of fish ponds
25 for feeding some birds species?

1 DR. WARNOCK: I am aware that they called for
2 restoration and creation of certain habitats, although I
3 don't specifically remember just fish ponds.

4 MS. DOUGLAS: If I could ask you, then, to imagine
5 there that is a proposal and may or may not seem far fetched
6 to you to create 5,000 acres of fish ponds for feeding
7 birds.

8 Do you think that this proposal can feasibly mitigate
9 for the loss of fish at the Salton Sea?

10 DR. WARNOCK: I would really have to see the proposal
11 and evaluate the plan. I think there are problems with
12 ponds in that not all species would necessarily use the
13 ponds, and configuration of the ponds is undoubtedly very
14 important as to which species you would attract.

15 MS. DOUGLAS: If I could ask you maybe to imagine even
16 further, suspending disbelief if you must, that the details
17 might be anywhere, about all the details that are
18 available.

19 Do you think it feasible or would it be feasible to
20 target with some sort of fish ponds artificial feeding
21 programs for specific bird species and which ones might be
22 targeted?

23 DR. WARNOCK: I think that would be hard to do for the
24 whole Sea. I think you probably could get use of those
25 ponds by American white pelicans if appropriate prey were

1 present. I doubt very much that brown pelicans would use
2 the ponds.

3 MS. DOUGLAS: Let's talk a little more about that. In
4 your experience why do you doubt that brown pelicans would
5 feed in fish ponds?

6 DR. WARNOCK: In my observations of ponded areas around
7 the west I don't specifically ever remember seeing a brown
8 pelican using one of the ponds. One of their issues, they
9 are plunge divers. In a number of years of doing work in
10 salt ponds in San Francisco Bay, some of which do hold fish,
11 I've never seen brown pelicans diving or using the ponds.

12 MS. DOUGLAS: Have you seen white pelicans using ponds?

13 DR. WARNOCK: Yes, ma'am.

14 MS. DOUGLAS: But not brown pelicans?

15 DR. WARNOCK: No.

16 MS. DOUGLAS: Are certain fish eating birds more --
17 certain species more aggressive than others?

18 DR. WARNOCK: Undoubtedly.

19 MS. DOUGLAS: Could you please elaborate on that,
20 confining the answer to the species of the Sea?

21 DR. WARNOCK: At the Sea. Well, all birds when they
22 are breeding are aggressive. Birds, like the large waders,
23 the herons and egrets, which possess formidable bills, can
24 be quite aggressive. I think great blue herons could be
25 quite aggressive. That's about as far as I would go with my

1 knowledge.

2 MS. DOUGLAS: You are off the cuff.

3 DR. WARNOCK: To specific aggression.

4 MS. DOUGLAS: Back to our fish pond scenario, then.

5 How -- would these ponds lead to competition among the
6 species for the fish available in the ponds? Would we see
7 bird wars, fighting over fish?

8 DR. WARNOCK: I would assume so because of the
9 restricting spaces.

10 MS. DOUGLAS: If there aren't as many fish in the ponds
11 as there are -- as the birds are used to finding in the Sea,
12 which is likelier than, would we see fighting over the
13 relatively few numbers of fish in the ponds?

14 DR. WARNOCK: More than likely, yes.

15 MS. DOUGLAS: There would be a large number of birds
16 that might not manage to get any fish at all, wouldn't there?

17 DR. WARNOCK: Potentially.

18 MS. DOUGLAS: Would we see fights to death over fish in
19 the fish ponds?

20 DR. WARNOCK: I wouldn't go that far.

21 MS. DOUGLAS: Has this kind of fish pond mitigation
22 scenario ever been attended at a large scale, like a 5,000
23 acre scale, anywhere else in North America?

24 DR. WARNOCK: I would restrict my comments to the West
25 because I am not as familiar with the literature outside.

1 But I can't think of any projects on that scale of
2 attempting that type of end result.

3 MS. DOUGLAS: By West, west of the Rockies?

4 DR. WARNOCK: West of the Rockies, Pacific Flyway.

5 MS. DOUGLAS: Are you aware of any other projects at
6 all and if so what scale? Sort of fishing pond mitigation
7 project, what scale are they on?

8 DR. WARNOCK: I am aware of no other projects like
9 that.

10 MS. DOUGLAS: Don't some of the bird species along the
11 Lower Colorado River and adjacent to the Salton Sea depend
12 on shallow freshwater marsh habitat?

13 DR. WARNOCK: Yes, ma'am.

14 MS. DOUGLAS: Can you name any of these or particular
15 species of concern?

16 DR. WARNOCK: The rails, clapper rails, black rails,
17 some of the small herons, the green heron, Leas bittern,
18 American bittern, some of the purple gallinule, the coots.
19 There is a --

20 MS. DOUGLAS: To mitigate impacts --

21 DR. WARNOCK: I am restricting my comments to
22 waterbirds right now. There are a number of other songbirds
23 land bird that would use those types of habitat.

24 MS. DOUGLAS: Others as well. All right.

25 To mitigate impacts, then, on the species like the

1 black rail, that depends on shallow freshwater marsh
2 habitat, the Draft EIR/EIS for water transfer proposal,
3 which is IID Exhibit 55, proposes to create new marsh
4 habitat.

5 Do you feel there are adequate performance standards,
6 documentation that you have seen on how these marshes will
7 work, how they will attract fish target species?

8 DR. WARNOCK: No, ma'am. When I commented -- one of my
9 comments on Exhibit 55, the draft transfer, was for black
10 rail specifically. Black rails seem to prefer very shallow
11 water habitat. Very shallow water habitat, and we're
12 talking the difference between, say, an inch of water versus
13 four to six inches of water, that type of habitat is very
14 hard to manage for, and managers tend to have to manage
15 water levels at a deeper level. And what we have seen
16 around the Great Basin, this is suggested in the literature,
17 is that the rail habitat management that is going on right
18 now is not appropriate for black rails. The water is
19 probably too deep for them.

20 MS. DOUGLAS: Is it also another concern of yours that
21 there might be a time lag between when the habitat at the
22 Sea is destroyed and when suitable replacement habitat can
23 be created?

24 DR. WARNOCK: Yes, ma'am. In Exhibit 55 it was
25 suggested that the creation of new habitat may take up to 15

1 years, and I would say for the majority of these species,
2 if you picked a rough average life span, it would be
3 approximately five years, and that's a long time to go
4 without habitat.

5 MS. DOUGLAS: There would be a lot of birds of dying of
6 old age or hunger?

7 DR. WARNOCK: Or leaving the area, right.

8 MS. DOUGLAS: You mentioned that 30 to 50 percent of
9 the world's population of mountain plovers winter in
10 Imperial Valley in some years. In your opinion, would
11 fallowing of agricultural land have a potentially
12 significant impact on mountain plovers?

13 DR. WARNOCK: Yes, ma'am.

14 MS. DOUGLAS: Can you describe a procedure, an
15 agricultural packet, that could mitigate the impacts of
16 fallowing on these birds?

17 DR. WARNOCK: I think the first step would be to learn
18 more about the specific habitat requirements of these birds,
19 mountain plovers, long-billed curlews, and then target
20 certain agricultural fields for crops that are favorable to
21 those species. Mountain plovers tend to prefer a very
22 specific kind of crop and specific types of soil, the way
23 the soil is. I don't know all the correct farming terms,
24 but they don't like really deeply furrowed soil. They seem
25 to prefer some of the areas that get flattened and then once

1 the vegetation gets too high, they move to different
2 fields. So, it is a very dynamic system.

3 MS. DOUGLAS: What kind of crops do mountain plovers
4 like? Do you know?

5 DR. WARNOCK: I'm not so sure it's specific to crops
6 versus the stage of the vegetation. They do prefer things
7 like grass fields where sod is grown. They prefer fields
8 where crops have just been burned. Some of the newly
9 planted, I think, alfalfa fields that are flooded. Although
10 the mountain plover's not so much on flooded fields. There
11 is a variety of different crops.

12 MS. DOUGLAS: Now, what is the significance of the
13 breeding colony of double-crested cormorants in the Salton
14 Sea?

15 DR. WARNOCK: In 1999 we documented over -- I don't
16 remember exactly how many thousands of double-crested
17 cormorants, but if you looked through the literature that
18 was -- if not the largest breeding colony of double-crested
19 cormorants in the West, one of the largest breeding
20 colonies.

21 MS. DOUGLAS: Does the Draft EIR/EIS in IID Exhibit 55
22 adequately evaluate the adverse environmental consequences
23 of the proposed project on this existing breeding colony?

24 DR. WARNOCK: In my opinion, no.

25 MS. DOUGLAS: What would be the impact of the proposed

1 project on existing roosting sites within and around the
2 Salton Sea?

3 DR. WARNOCK: For which species, please?

4 MS. DOUGLAS: Maybe we can go back to the map. Could
5 you identify some of the important roosting sites that might
6 be impacted?

7 DR. WARNOCK: For some -- I am not sure I could.

8 MS. DOUGLAS: But you have on the map some blue --

9 DR. WARNOCK: We actually -- we have -- on the west
10 side we have the areas, we tend to treat them as both
11 foraging and roosting sites because you see species doing
12 both to aviaries. And some of the areas where we get large
13 concentrations are the north end for, say, shorebirds. Then
14 we get large numbers of foraging and roosting shorebirds on
15 the western side of the Sea, sort of the low sloping
16 barnacle beaches with shallow water. And then at the south
17 end, in the south eastern end also and -- our highest
18 numbers are on the southeast end, and they are -- it appears
19 it is a combination of very shallow, low sloping water
20 abutted next to areas of freshwater management areas. So
21 birds will move back and forth in those areas.

22 MS. DOUGLAS: Would you say that the Draft EIR/EIS,
23 which is IID Exhibit 55, adequately evaluates the importance
24 of impact of loss of shallow water habitat at the Sea?

25 DR. WARNOCK: The impacts, I didn't feel it adequately

1 described the impacts.

2 MS. DOUGLAS: If you could describe the impacts, are
3 they quite serious on some of the bird species at the Salton
4 Sea?

5 DR. WARNOCK: Well, it all comes down to what is
6 available for certain species in foraging and forest,
7 especially the shorebirds, which are some of the numerically
8 abundant species at the Sea. Most of the shorebirds require
9 very shallow water to actually be able to access the food in
10 the water column and in the substrate below. And I am not
11 sure, but it wasn't clear in the descriptions that the
12 models were accurate enough to be able to distinguish
13 changes in levels of the Sea of a few inches, which could
14 make a great difference for certain species of birds.

15 MS. DOUGLAS: Thank you.

16 I have no further questions.

17 CHAIRMAN BAGGETT: Thank you.

18 Mr. Slater.

19 MS. HASTINGS: I will.

20 ----oOo----

21 CROSS-EXAMINATION OF NATIONAL AUDUBON SOCIETY - CALIFORNIA

22 BY SAN DIEGO COUNTY WATER AUTHORITY

23 BY MS. HASTINGS

24 MS. HASTINGS: Hi, my name is Stephanie Hastings. I
25 represent the San Diego County Water Authority. Not as

1 brief as Mr. Du Bois, I am sorry, just a few questions.

2 Dr. Warnock, and I believe I'm actually using your
3 words here, you in your written testimony testified that
4 birds face an uncertain future at the Sea today until a
5 program for the restoration is developed.

6 Is that correct?

7 DR. WARNOCK: Yes, ma'am.

8 MS. HASTINGS: Mr. Taylor, I believe these are also
9 your words. In your written testimony you stated that there
10 were problems with the Sea that may -- that have been many
11 years in the making; is that correct?

12 MR. TAYLOR: That's correct.

13 MS. HASTINGS: In fact, I think in response to a prior
14 question you indicated that your concern peaked in the early
15 1990s; is that correct?

16 MR. TAYLOR: Mid to late 1990s; '96, '97 specifically.

17 MS. HASTINGS: Dr. Warnock, your written testimony
18 identifies historical increase in salinity concentrations at
19 the Salton Sea as one of several factors that cause the Sea
20 to become less than suitable for fish eating birds; is that
21 correct?

22 DR. WARNOCK: Yes, it is. Yes, ma'am.

23 MS. HASTINGS: Mr. Taylor, your written testimony also
24 indicates that you agree that historically increasing
25 salinity concentrations are having an adverse impact on bird

1 species at Salton Sea. Is that correct?

2 MR. TAYLOR: We're very concerned about that, yes.

3 MS. HASTINGS: Dr. Warnock, are you aware of the
4 evidence of decreasing water levels at the Sea, for example,
5 in the past few years?

6 DR. WARNOCK: On that time scale, no, I am not.

7 MS. HASTINGS: Are you aware of decreasing water levels
8 in the recent past at the Sea?

9 DR. WARNOCK: I know that it has been suggested. There
10 has been various modeling scenarios that have been put out
11 and suggested that that is the case.

12 MS. HASTINGS: Dr. Warnock, if I could just generally
13 summarize your concerns about the proposed transfer. Is it
14 that reduced flows to the Sea as a result of the transfer
15 project would accelerate increasing salinity concentrations
16 that you're concerned about and, thus, have adverse impacts
17 on fish species and in turn then fish eating birds?

18 DR. WARNOCK: That would be one concern.

19 MS. HASTINGS: Mr. Taylor, do you have the same
20 concern?

21 MR. TAYLOR: Would you recite that please?

22 MS. HASTINGS: Is your testimony, generally speaking,
23 that the proposed transfer project would have -- would cause
24 a reduction in flows to the Sea which in turn would cause
25 acceleration of salinity concentrations of the Sea, and

1 thereby have adverse impacts on fish eating birds?

2 MR. TAYLOR: I would agree with that.

3 MS. HASTINGS: Dr. Warnock, would you also agree that
4 reduced inflows from the proposed transfer would adversely
5 impact or -- I'm sorry, reduced water levels such that there
6 would be resulting adverse impacts on bird habitat?

7 DR. WARNOCK: One more time, please.

8 MS. HASTINGS: As a result of the transfer project and
9 potentially reduced flows stemming from that project, is it
10 your testimony that water levels will be decreased such that
11 that will have an adverse impact on bird habitat?

12 DR. WARNOCK: As a result of reduced flows? Yes.

13 MS. HASTINGS: Just to follow up. I believe you just
14 responded to questions from Ms. Douglas about exposure of
15 shallow areas as a result of reduced flows?

16 DR. WARNOCK: That is a concern, yes.

17 MS. HASTINGS: Mr. Taylor, do you have the same concern?

18 MR. TAYLOR: Yes.

19 MS. HASTINGS: Dr. Warnock, isn't it fair to say that
20 your concerns with the proposed transfer are limited thus to
21 reductions in the inflow to the Sea?

22 DR. WARNOCK: I did have other concerns with the
23 transfer that weren't just related to flows into the Sea.
24 So I guess I would have to say, no.

25 MS. HASTINGS: Are concerns identified in your written

1 testimony or oral testimony that you have provided for us
2 today?

3 DR. WARNOCK: Yes, ma'am.

4 MS. HASTINGS: Can you tell me what those concerns are?

5 DR. WARNOCK: Sure. There were concerns about the
6 mountain plovers and the fallowing of land and what
7 potential impact of that is. There were concerns about
8 lining up canals and doing away with what seeps that black
9 rails frequent.

10 MS. HASTINGS: I understand.

11 Mr. Taylor, in summary you were also concerned about
12 primarily a reduction in inflows from the proposed transfer
13 and their impact on the Salton Sea; is that correct?

14 MR. TAYLOR: That is our primary concern, yes, that we
15 are facing a difficult situation. This only limits our
16 options.

17 MS. HASTINGS: Dr. Warnock, setting aside the reduction
18 and flow issues to start with, you don't have any concerns
19 about IID's agreement to sell water to San Diego County
20 Water Authority?

21 DR. WARNOCK: No, I didn't go into this with any strong
22 opinions either way, no.

23 MS. HASTINGS: Mr. Taylor, you wouldn't have -- in
24 fact, I believe you testified to the fact that you don't
25 have any strong objections to the transfer, per se?

1 MR. TAYLOR: In principle we stated publicly we are not
2 opposed to it in principle.

3 MS. HASTINGS: Dr. Warnock, you wouldn't have any
4 concerns with the use of existing facilities and pipelines
5 for transfer water to San Diego County, would you?

6 DR. WARNOCK: Of existing facilities and pipelines?
7 No, although I haven't reviewed any of those impact types of
8 study that presumably were done to show that.

9 MS. HASTINGS: Mr. Taylor, the same question to you.
10 You wouldn't have any concerns about use of the existing
11 treatment facility?

12 MR. TAYLOR: That's correct.

13 MS. HASTINGS: Dr. Warnock, would you have any
14 concerns about IID's agreement to limit its agricultural use
15 against setting aside its use related to inflows to the
16 Sea?

17 DR. WARNOCK: That is a little vague for me. I am not
18 quite sure when you say limit. Limit how?

19 MS. HASTINGS: If I were to tell you that the Imperial
20 Irrigation District had agreed to reduce its annual
21 agricultural use. Setting aside again any inflow issues to
22 the Sea, you wouldn't have any concerns about that?

23 DR. WARNOCK: Is that assuming that the inflows stay
24 the same into the Sea?

25 MS. HASTINGS: Exactly.

1 DR. WARNOCK: No.

2 MS. HASTINGS: Mr. Taylor, same question.

3 MR. TAYLOR: It is a difficult question. I'm sorry,
4 I'm having difficulty processing it. Try me one more time.

5 MS. HASTINGS: Setting aside or assuming no reduction
6 in inflows to the Sea, would you have any concerns about
7 Imperial Irrigation District's agreement to limit its
8 agricultural water use?

9 MR. TAYLOR: It does bring up the issue that we
10 understand, and that is our primary concern is maintaining
11 options to protect and restore the Salton Sea. It gets to
12 the inflow question, stabilizing that.

13 We are mindful of these issues involving agriculture
14 practices and, as Dr. Warnock mentioned, with the mountain
15 plover. We are mindful of that. This is one of those
16 situations where we are willing to grapple with the
17 complexity of the situation. We really believe that we must
18 maintain a stable water supply for the Salton Sea while
19 we're figuring out what's the best solution to maintain long
20 term.

21 MS. HASTINGS: I believe in response to a question from
22 Mr. Gilbert you had identified the fact that some bird
23 species use agricultural areas in and around the Sea?

24 DR. WARNOCK: Yes, ma'am.

25 MS. HASTINGS: I assume, then, that you would be

1 referring to the Imperial Irrigation District and the
2 Coachella Valley Irrigation District as irrigation near to
3 the Sea?

4 DR. WARNOCK: Yes.

5 MS. HASTINGS: Would that also include irrigation
6 districts that are in proximity to the Lower Colorado River?

7 DR. WARNOCK: I would assume so, although I haven't
8 done any surveys there.

9 MS. HASTINGS: Thank you very much.

10 No further questions.

11 CHAIRMAN BAGGETT: Thank you.

12 MR. OSIAS: Could I have just a quick five minutes?

13 CHAIRMAN BAGGETT: I was going to suggest take a short
14 break. Recessed for five.

15 (Break taken.)

16 CHAIRMAN BAGGETT: Let's resume with the
17 cross-examination of Audubon witnesses.

18 Mr. Osias.

19 ---oOo---

20 CROSS-EXAMINATION OF NATIONAL AUDUBON SOCIETY - CALIFORNIA

21 BY IMPERIAL IRRIGATION DISTRICT

22 BY MR. OSIAS

23 MR. OSIAS: Thank you, gentlemen. Nice to meet you.

24 David Osias, Imperial Irrigation District.

25 I understand you were here yesterday so you have a good

1 idea how this works.

2 DR. WARNOCK: Yes, sir.

3 MR. OSIAS: Let me ask you, Mr. Taylor, I think you
4 started out in your direct identifying sort of these
5 principles that Audubon seeks, and although you had it in
6 five parts, perhaps I could distill them into one, which
7 would be you would like to see the Sea preserved for
8 wildlife, but you would not like to do so at the expense of
9 agriculture.

10 Is that --

11 MR. TAYLOR: We would like to see the Sea preserved for
12 wildlife, and we are mindful of the needs of agriculture
13 because the Sea depends on agriculture. So in essence I am
14 in agreement with your statement.

15 MR. OSIAS: A win-lose solution is not really possible?

16 MR. TAYLOR: Not a good solution.

17 MR. OSIAS: Because if you lose ag, you end up losing
18 the Sea anyway?

19 MR. TAYLOR: Right.

20 MR. OSIAS: And I think, maybe not necessarily in those
21 principles, you also acknowledge that there is a water
22 supply issue in California, and Audubon at least is not
23 trying to stand in front of that train?

24 MR. TAYLOR: That is correct. We understand the larger
25 context in which we are operating.

1 MR. OSIAS: You have been paying attention to the
2 Salton Sea for a good number of years. The point about not
3 being afraid of a big project, is that a recognition that,
4 in fact, to accommodate water supply needs, continuing
5 agriculture and yet protecting wildlife there is not an easy
6 solution to that?

7 MR. TAYLOR: That is correct.

8 MR. OSIAS: In fact, even if the solution is big, it is
9 also going to be complicated and probably expensive; is that
10 fair?

11 MR. TAYLOR: That is a fair statement, yes.

12 MR. OSIAS: At least to date is it fair to say that no
13 one has stepped up with the expensive part, the money?

14 MR. TAYLOR: It is fair to say that that solution --
15 that conclusion has not been reached. I would also say that
16 it is fair that we are still in the process of understanding
17 what the best idea is. We do not know that yet.

18 MR. OSIAS: Actually that is an important point I
19 skipped over by mistake. Dr. Hurlbert, for example,
20 yesterday used maybe the fish -- Dr. Warnock, he focused on
21 fish; you focus on birds.

22 He said we don't know enough about fish really even to
23 know what to do. I suppose to some degree we don't know
24 enough about birds to know what to do. Is that true?

25 MR. TAYLOR: I would hesitate to say that's true. I

1 would say that we certainly know more than we did four years
2 ago. And we will know more a year or two from now. And
3 we're looking and urging all the institutions involved in
4 this exercise to put their full energies toward
5 accomplishing the best idea possible.

6 MR. OSIAS: There have been at least discussions among,
7 what I think people call, stakeholders, these kind of
8 processes, from all stakeholders, government, environmental
9 groups, agricultural groups, urban groups, right?

10 MR. TAYLOR: That's correct.

11 MR. OSIAS: Those discussions have been going on for
12 some number of years?

13 MR. TAYLOR: That is correct.

14 MR. OSIAS: And haven't found the solution yet?

15 MR. TAYLOR: That's correct.

16 MR. OSIAS: And Audubon is committed to trying to
17 continue to do that?

18 MR. TAYLOR: Yes.

19 MR. OSIAS: As perhaps others are since the discussions
20 haven't broken down?

21 MR. TAYLOR: We're still talking, yes.

22 MR. OSIAS: One of the difficulties is that not only do
23 we not know specifically what to do from an engineering
24 perspective or science perspective, but if we did we don't
25 know how to pay for it; is that fair?

1 MR. TAYLOR: That is fair in terms of the total
2 understanding of how we would pay.

3 MR. OSIAS: Fearful of your answer, I'm goine to ask
4 you anyway.

5 If it took whatever, 16, 17 years to solve Mono Lake,
6 what time frame do you have an expectation for this
7 process?

8 MR. TAYLOR: I am very hopeful that it is less time
9 than that. But I am also aware that it will take more than
10 a year, perhaps more than two years, perhaps as many as five
11 or six years to identify what the right idea is.

12 MR. OSIAS: In your position for Audubon, at least --
13 you can tell me if you know exactly or you just keep an eye
14 on it. The budget constraints at both the state and federal
15 level are something you need to be aware of?

16 MR. TAYLOR: We are aware of budget realities.

17 MR. OSIAS: At least certainly the present economic
18 climate in California is not positive for finding large sums
19 of money for this problem?

20 MR. TAYLOR: We just passed a large proposition, \$2.6
21 billion before the voters. Passed 57 percent to 43 percent
22 in the face of a very difficult economy. We were buoyed by
23 that positive response to a big environmental question, so I
24 am not sure that is correct.

25 MR. OSIAS: Was there a -- was there any hundreds of

1 millions of that for the Salton Sea?

2 MR. TAYLOR: I believe there is funding in that that
3 could be competed for Salton Sea related projects. We are
4 also looking at additional follow-up bond measures that
5 would be more specific to the Salton Sea.

6 MR. OSIAS: Maybe implicit in your answer is this
7 statement: The economic solution for the Salton Sea should
8 be borne by the entire State of California? That is what a
9 bond does?

10 MR. TAYLOR: Right, right. I am not prepared today to
11 assess who should -- what the precise cost allocation should
12 be. I believe that there are many parties that would bring
13 resources to the table when that time comes.

14 MR. OSIAS: Setting aside the sort of easy statement,
15 everyone should contribute appropriately, put that one
16 aside. We all agree to do that. Probably not possible for
17 the 160,000 people who live in Imperial Valley to fund a
18 major portion of a big project. Would you agree with that?

19 MR. TAYLOR: I would believe that the number of
20 participants would include that group and be larger than
21 that group and certainly they would bear a share, but not
22 perhaps a significant share. I'm not sure. I would not be
23 prepared at this point to exercise an opinion on that.

24 MR. OSIAS: You are aware that is a relatively poor
25 county within the state of California?

1 MR. TAYLOR: I'm aware of Imperial County, yes.

2 MR. OSIAS: You say you're aware?

3 MR. TAYLOR: I am aware of the demographics and the
4 relative economics of Imperial Valley.

5 MR. OSIAS: That certainly is some influence on what
6 share they can bear; is that right?

7 MR. TAYLOR: We would need to discover more about what
8 particular institution within Imperial County we are talking
9 about as we talk about relative wealth or lack of wealth.

10 MR. OSIAS: Given the, I guess, the answers you gave to
11 Mr. Rossmann for a national resource perspective and I think
12 the testimony of Dr. Warnock that there is national and
13 international bird benefits to the Sea, some component
14 should be borne by the national government?

15 MR. TAYLOR: I would agree with that.

16 MR. OSIAS: Have you approached the national government
17 for funding?

18 MR. TAYLOR: We have had numerous conversations over
19 the political years, both in the previous presidential
20 administration and this administration, as well as our
21 Congressional leadership to that fact.

22 MR. OSIAS: To date neither your efforts nor maybe
23 other stakeholders' efforts have generated a commitment of
24 funds from national government that you could measure in the
25 hundreds or millions; is that correct?

1 MR. TAYLOR: I think that is correct, but I think we
2 are still waiting for the right idea.

3 MR. OSIAS: It is probably also correct that at both
4 the state and federal level what the total will cost is
5 relevant to their making a commitment of any funds; is that
6 fair?

7 MR. TAYLOR: That is usually the case, yes.

8 MR. OSIAS: Because if it cost a whole lot, a part of
9 the commitment doesn't get you there is generally not viewed
10 as a wise investment till you round up the rest?

11 MR. TAYLOR: That is often the way it works, yes.

12 MR. OSIAS: You've been through the drill on lots of
13 things?

14 MR. TAYLOR: Yes.

15 MR. OSIAS: Now, I read in your material that Audubon
16 also is very interested in San Francisco Bay?

17 MR. TAYLOR: That is correct.

18 MR. OSIAS: That is one of your highest priorities,
19 correct?

20 MR. TAYLOR: That is always correct.

21 MR. OSIAS: There is a Bay Restoration Project that I
22 read about that is going --

23 MR. TAYLOR: I congratulate you. Yes.

24 MR. OSIAS: Why?

25 MR. TAYLOR: You found and read our website.

1 MR. OSIAS: Indeed.

2 And I'm not -- I couldn't tell, now you will have to
3 take your congratulations away, whether the Bay Restoration
4 Project and the Bay-Delta interests of Audubon are one in
5 the same or are those actually two projects?

6 MR. TAYLOR: They're quite closely related, yes.

7 MR. OSIAS: Audubon has been successful in rounding up
8 money from stakeholders, including the government for the
9 Bay project?

10 MR. TAYLOR: We have identified and there was funding
11 in the Prop 40 Bond Act for the Bay related expenditures,
12 yes.

13 MR. OSIAS: How much?

14 MR. TAYLOR: I believe that the appropriation for the
15 Bay conservancy, I caution this is an estimate, but I
16 believe the appropriation within the Bond Act for the Bay
17 conservancy was \$40,000,000 for land acquisitions
18 specifically.

19 MR. OSIAS: That is actually the number I had in my
20 mind. My memory is consistent with yours.

21 How long did it take to get a commitment for that
22 40,000,000?

23 MR. TAYLOR: It took us approximately three months to
24 craft and pass the Bond Act.

25 MR. OSIAS: Did that receive statewide support?

1 MR. TAYLOR: Actually our strongest support was from
2 places like Riverside and Imperial County.

3 MR. OSIAS: So, you hope to use that as an example of
4 how we can get money maybe for the Salton Sea?

5 MR. TAYLOR: That is true, yes.

6 MR. OSIAS: Does Audubon have any suggestion on how
7 California should live with a reduced Colorado River supply
8 while we study the Salton Sea solution?

9 MR. TAYLOR: Can you be a little more specific about
10 the study provision?

11 MR. OSIAS: Yes. Study may be the wrong word. It is
12 going to take some time to craft a solution that an optimist
13 will say gets by all the stakeholders?

14 MR. TAYLOR: Yes.

15 MR. OSIAS: Can it be measured in years and not months?

16 MR. TAYLOR: That is probably true.

17 MR. OSIAS: In the meantime California has a looming
18 Colorado River cutback. You are aware of that?

19 MR. TAYLOR: Yes, I am.

20 MR. ROSSMANN: Do you know the current Colorado River
21 runoff index?

22 MR. TAYLOR: No, I do not.

23 MR. OSIAS: Would it surprise you if I told you it was
24 25 percent of normal for this year?

25 MR. TAYLOR: I find that figure disappointing, yes.

1 MR. OSIAS: But not surprising given the --

2 MR. TAYLOR: The weather does not surprise me.

3 MR. OSIAS: So, if we didn't have the proposed transfer
4 and if, in fact, it causes the QSA to not take affect short
5 term and, therefore, California loses the interim surplus,
6 we have some water supply disruption to deal with while the
7 stakeholders are using the next couple years, being
8 optimistic, to try to solve the Salton Sea issue, correct?

9 MR. TAYLOR: Yes.

10 MR. OSIAS: My question was: Has Audubon suggested a
11 supply solution to get us through this year, I don't want to
12 speculate, whatever, one to X years, to reach some Salton
13 Sea solution?

14 MR. TAYLOR: No, we have not put forward that
15 solution. What we have done is engaged in the exercise of
16 going to the capitol to help bring the parties together,
17 using the urgency of the hour, in order to reach some
18 durable solutions on several of the issues that we are
19 facing with water in California. But having said that, I
20 think that what we will see work itself out is a situation
21 pretty similar to what we faced with Mono Lake and the City
22 of Los Angeles. And the solution there was significant
23 reinvestment in water reclamation which ultimately help
24 solve that problem.

25 MR. OSIAS: Just to avoid confusion, that water

1 reclamation would be in the urban areas rather in Imperial
2 because water rights in Imperial cuts off flow to the Sea?

3 MR. TAYLOR: I'm thinking of San Diego.

4 MR. OSIAS: We could have discussions in here about
5 capturing tailwater and reusing it to reduce IID demand.
6 That is actually one of the problems out at the Sea, with
7 the transfer, right?

8 MR. TAYLOR: I would need to think about that more.
9 I'm sorry those details are a little vague with me at the
10 moment.

11 MR. OSIAS: Would you agree that to the extent those
12 who have a Colorado River supply reduced and have a right to
13 State Water Project water will at least attempt to put more
14 demands on the State Water Project?

15 MR. TAYLOR: That is certainly within -- that is
16 believable, yes.

17 MR. OSIAS: I assume that Audubon would be against
18 increasing exports from Northern California and from the
19 Delta, the California Delta, not to get confused, to
20 satisfy losses from the Colorado River?

21 MR. TAYLOR: That is really implicit in my item number
22 four, which we want to see sustainable water supplies to the
23 Salton Sea, but we have not disagreed in principle with the
24 water transfer from Imperial County.

25 MR. OSIAS: It would actually be preferable to solve

1 the problem in Southern California than to export more water
2 from Northern California and from the Delta?

3 MR. TAYLOR: We believe that local solutions are the
4 best solutions, yes.

5 MR. OSIAS: Audubon has a budget, does it not?

6 MR. TAYLOR: Yes, we do.

7 MR. OSIAS: It probably has approximately 170,000,000
8 in assets?

9 MR. TAYLOR: That is fairly close in terms of deferred
10 assets and capital assets, yes.

11 MR. OSIAS: Maybe it would be more accurate, would it
12 be about 174,000,000 in cash and investments, and total
13 assets about 217,000,000?

14 MR. TAYLOR: That is pretty close, yes.

15 MR. OSIAS: It has total liability of 44,000,000?

16 MR. TAYLOR: I would agree with that, yes.

17 MR. OSIAS: So its positive net worth is about
18 173,000,000?

19 MR. TAYLOR: Doing your math, that is pretty close.
20 That is tied up in land values, by the way.

21 MR. OSIAS: Pardon me?

22 MR. TAYLOR: Much of that is tied up in land values.

23 MR. OSIAS: About 37,000,000?

24 MR. TAYLOR: I'm not sure. I am only responsible for
25 California.

1 MR. OSIAS: I wasn't asking for your responsibility.

2 If you knew.

3 Has Audubon offered \$50,000,000 to help solve the
4 Salton Sea problem?

5 MR. TAYLOR: No, we haven't.

6 MR. OSIAS: Could it?

7 MR. TAYLOR: Probably not.

8 MR. OSIAS: Therefore, I think it probably would not
9 either, right?

10 MR. TAYLOR: Our assets are encumbered by a number of
11 liabilities and responsibilities.

12 MR. OSIAS: Did Audubon have 51,000,000 in expenses
13 related to conservation programs last year?

14 MR. TAYLOR: That sounds very accurate, yes.
15 Nationwide.

16 MR. OSIAS: And how much of that was dedicated to the
17 Salton Sea?

18 MR. TAYLOR: I'm not sure.

19 MR. OSIAS: Less than a million?

20 MR. TAYLOR: Yes.

21 MR. OSIAS: Audubon has about 550,000 members
22 nationally?

23 MR. TAYLOR: Yes.

24 MR. OSIAS: If they each contributed a hundred dollars
25 to save the Salton Sea, how much could we raise?

1 MR. TAYLOR: We need to do the math. That is a very
2 large hypothetical.

3 MR. OSIAS: Is that outside the realm of practicality?

4 MR. TAYLOR: I think in a nation with multiple demands
5 that is probably beyond the realm of practicality.

6 MR. OSIAS: Among the membership 550,000, probably not
7 all of them have the Salton Sea as their highest priority?

8 MR. TAYLOR: That is true, yes.

9 MR. OSIAS: That would influence their giving?

10 MR. TAYLOR: That is true.

11 MR. OSIAS: Might that also be true for the California
12 Legislature?

13 MR. TAYLOR: I'm not sure.

14 MR. OSIAS: Or the national Legislature, Congress?

15 MR. TAYLOR: I think the national Legislature responds
16 to need and to opportunities to make important investments.

17 MR. OSIAS: How much did Audubon spend, and I know it
18 wasn't all solution oriented, some of it was disputes, but
19 in the whole Mono Lake scenario?

20 MR. TAYLOR: We probably raised and spent over the
21 course of 20 years approximately 3- to \$5,000,000 to advance
22 that argument.

23 MR. OSIAS: Dr. Warnock, the articles you have
24 submitted I think sort of confirm, do they not, some of the
25 more popular publications I was using yesterday with respect

1 to bird die-offs?

2 DR. WARNOCK: They mention them.

3 MR. OSIAS: I'm looking specifically at Exhibit 15 on
4 Page 11. You talk about -- if you want to flip there, I'll
5 wait a minute.

6 DR. WARNOCK: Exhibit?

7 MR. OSIAS: Audubon 15.

8 You see the paragraph called Conservation Concerns?

9 DR. WARNOCK: Yes, sir.

10 MR. OSIAS: It talks about, in the second sentence --
11 we can start from the beginning if you want -- Salton Sea
12 hosts about 19 species of waterbirds of high conservation
13 concern (Table 7), but many other species that concentrate
14 there potentially are at great risk from disease
15 contaminants from human encroachment?

16 DR. WARNOCK: Yes.

17 MR. OSIAS: This paragraph talks about the die-offs
18 with some numbers that we heard about today and that were
19 alluded to in some of the articles I used yesterday?

20 DR. WARNOCK: Yes.

21 MR. OSIAS: Were you here when Dr. Krantz was asked by
22 Chairman Baggett about some population deaths?

23 DR. WARNOCK: Yes, sir.

24 MR. OSIAS: Do you recall he was sort of searching for
25 what is the normal sort on the background mortality, just

1 try to put some of these die-offs in perspective? Do you
2 remember that?

3 DR. WARNOCK: Yes.

4 MR. OSIAS: Do you remember Dr. Krantz saying, oh,
5 these die-offs are 1 percent or .1 percent? Do you remember
6 that?

7 DR. WARNOCK: I don't remember his exact figures, but I
8 remember the conversation, yes.

9 MR. OSIAS: With respect to the significant American
10 white pelican die-off, isn't that, like, approximately 10
11 percent of the western population?

12 DR. WARNOCK: Of which population?

13 MR. OSIAS: American white pelican.

14 DR. WARNOCK: Of the western population? I don't
15 remember what the western population, 180,000 or something.
16 We suggested it was low based on what we've seen at the Sea.
17 But I still don't --

18 MR. OSIAS: Maybe I'll ask the question, then, if you
19 know. You report here 9,000 American White pelicans died in
20 1996 of botulism. Do you know what percentage that is of
21 the population?

22 DR. WARNOCK: No, sir.

23 MR. OSIAS: Do you think it's significantly more than
24 .1 percent?

25 DR. WARNOCK: Yes, sir.

1 MR. OSIAS: Do you think it is significantly more than
2 1 percent?

3 DR. WARNOCK: Yes.

4 MR. OSIAS: Is it probably more than 5 percent?

5 DR. WARNOCK: I don't know.

6 MR. OSIAS: It's fair to describe that die-off as more
7 than the typical population mortality; isn't that correct,
8 for a year?

9 DR. WARNOCK: I don't know actually.

10 MR. OSIAS: Maybe I should ask it another way.

11 Are you aware of 9,000 white pelicans dying of botulism
12 year in and year out?

13 DR. WARNOCK: No.

14 MR. OSIAS: An unusual event?

15 DR. WARNOCK: I think so, yes.

16 MR. OSIAS: At least on that basis it's probably not
17 the baseline mortality for white pelicans?

18 DR. WARNOCK: Correct.

19 MR. OSIAS: Which is what I think the question was that
20 the Chairman was asking.

21 I'm going to butcher these names, I'm afraid.

22 Eared grebes.

23 DR. WARNOCK: Eared grebes.

24 MR. OSIAS: Sorry.

25 They had a significant die-off for unknown causes in

1 '92, correct?

2 DR. WARNOCK: That's correct.

3 MR. OSIAS: I think it was approximately 150,000?

4 DR. WARNOCK: It is an estimate, but, yes, those are
5 the figures given.

6 MR. OSIAS: And did they die within a relatively short
7 period of time?

8 DR. WARNOCK: I don't know, actually. I think so, but
9 I don't know.

10 MR. OSIAS: I am not saying in one day. Certainly that
11 wasn't in 12 months?

12 DR. WARNOCK: No. I think it was a die-off which
13 tended to happen within fairly discrete periods of time.

14 MR. OSIAS: Haven't -- I think it was you, but maybe it
15 was others, estimated that eared grebes population of about
16 3,000,000?

17 DR. WARNOCK: I've heard estimates that Dr. Jail
18 [phonetic] puts it at three and a half mill. So I think
19 that is the right ballpark, yes.

20 MR. OSIAS: 150,000 in an episode is a significant
21 percentage of that?

22 DR. WARNOCK: I would say so, yes.

23 MR. OSIAS: Also that would not be, then, your sort of
24 background baseline mortality?

25 DR. WARNOCK: I've never heard one that big.

1 MR. OSIAS: So, at least, in your opinion, as sort of
2 the preeminent bird scholar brought to this proceeding, you
3 would disagree with Dr. Krantz with respect to the bird
4 mortality events being in the small percentage that is
5 consistent with background mortality rates or baseline
6 mortality rates?

7 DR. WARNOCK: Without other comparisons I find it very
8 difficult to agree or disagree with that statement.

9 MR. OSIAS: If I put it in the words, I think, of Mr.
10 Taylor this afternoon or this morning, it is the sort of
11 event that actually prompted Audubon's concern?

12 DR. WARNOCK: Yes, sir.

13 MR. OSIAS: Which wouldn't be triggered by mortality
14 events that are usual?

15 DR. WARNOCK: Yes.

16 MR. OSIAS: Therefore, they are probably not usual
17 mortality rates?

18 DR. WARNOCK: Right. Although the mortality is a
19 relative event and what I don't know is relative to other
20 numbers of birds that stop at the other sites, what
21 percentages of those birds actually die in disease
22 outbreaks. I think that is an important distinction.

23 MR. OSIAS: I think you concluded in Exhibit 15 that we
24 have large gaps in knowledge with respect to these diseases?

25 DR. WARNOCK: Yes, I've heard that. I'm not an

1 disease, avian disease specialist. That is what I've
2 heard.

3 MR. OSIAS: Actually, you're one of the authors of
4 this, though?

5 DR. WARNOCK: That still doesn't make me an expert on
6 avian diseases.

7 MR. OSIAS: I wasn't referring to that part. I was
8 just saying you've heard it; that is part of your collective
9 report?

10 DR. WARNOCK: Yes, sir.

11 MR. OSIAS: It recommends that there be further
12 research?

13 DR. WARNOCK: Correct. We always recommend that.

14 MR. OSIAS: I was going to ask that question.

15 That same report predicted that, depending on inflow
16 regimes, the avian population could be severely affected in
17 13 to 22 years, correct? That is back on that page 11 if
18 you want to check.

19 DR. WARNOCK: Regarding salinity levels, yes.

20 MR. OSIAS: Actually you have two problems of somewhat
21 immediate concern, disease and salinity?

22 DR. WARNOCK: Yes, sir.

23 MR. OSIAS: We don't know scientifically the connection?

24 DR. WARNOCK: Correct.

25 MR. OSIAS: We saw a migration map in your slide show.

1 Did you see the one that also was in Dr. Krantz's slide
2 show?

3 DR. WARNOCK: Yes.

4 MR. OSIAS: Are they relatively consistent?

5 DR. WARNOCK: I assume so. We used data provided by
6 Dr. Krantz's group.

7 MR. OSIAS: So you're relying on the accuracy of that
8 data?

9 DR. WARNOCK: Yes, sir.

10 MR. OSIAS: I take it, then, you don't doubt that data?

11 DR. WARNOCK: Not at all.

12 MR. OSIAS: He showed banded zigzags, not exactly
13 precise, flying north to the planes, south to the Gulf of
14 Mexico, back up to the planes, south to the Salton Sea?

15 DR. WARNOCK: Yes.

16 MR. OSIAS: The salt ponds in the South Bay, by South
17 Bay I mean South Bay Area.

18 DR. WARNOCK: Of San Francisco.

19 MR. OSIAS: Yes.

20 You are familiar with those?

21 DR. WARNOCK: Very.

22 MR. OSIAS: You are very familiar with them because of
23 what?

24 DR. WARNOCK: A number of years of research done in the
25 South Bay.

1 MR. OSIAS: Those ponds, which you had a picture of,
2 have flows between them; is that right?

3 DR. WARNOCK: Yes, sir. They cycle -- they start with
4 water out of the Bay and they cycle it through until it hits
5 the crystalizing ponds.

6 MR. OSIAS: They are phased and get more and more
7 saline as you follow the path of the water?

8 DR. WARNOCK: Yes, sir.

9 MR. OSIAS: And were you here when someone suggested
10 that those kind of ponds may be salinity control measures
11 for the Salton Sea?

12 DR. WARNOCK: I have heard that, yes.

13 MR. OSIAS: You weren't here for that testimony?

14 DR. WARNOCK: Was it Tom's? No, I wasn't here Tom's
15 testimony. I don't know whose testimony it was.

16 MR. OSIAS: There was some in Dr. Krantz's and some in
17 Dr. Brownlie.

18 DR. WARNOCK: I may have. I have heard it before.

19 MR. OSIAS: Those ponds, I think you said, are used by
20 birds?

21 DR. WARNOCK: Very definitely.

22 MR. OSIAS: At some point do they become too saline to
23 be used by birds?

24 DR. WARNOCK: Yes, sir.

25 MR. OSIAS: Have you been studying where that

1 cross-over point is?

2 DR. WARNOCK: Yes.

3 MR. OSIAS: What salinity is that?

4 DR. WARNOCK: In South San Francisco Bay the salinity
5 level is where we find -- it is not a crossover and absolute
6 you find birds and then you don't. It is what we call a
7 curved linear effect where you picture a rainbow. You have
8 a peak and the peak is around -- I don't remember exactly.
9 It is between, depending on you're looking at species
10 numbers and diversities between a hundred and 150 parts per
11 thousand.

12 MR. OSIAS: I apologize, I'm doing this from memory. I
13 think in the study that had 20 ponds or --

14 DR. WARNOCK: I could call that slide up.

15 MR. OSIAS: You can test me. I think it had 71
16 species.

17 DR. WARNOCK: Seventy-five, you're close.

18 MR. OSIAS: Is there overlap between those 75 and some
19 of the species at the Salton Sea?

20 DR. WARNOCK: Most definitely.

21 MR. OSIAS: If those species are using ponds at a
22 hundred to 150 parts per thousand, presumably they could do
23 that at the Salton Sea?

24 DR. WARNOCK: If the conditions are correct, yes.

25 MR. OSIAS: There are other things that affect bird

1 habitats, correct?

2 DR. WARNOCK: There are other things affecting the use
3 of the salt ponds. It all revolves around the prey in the
4 pond.

5 MR. OSIAS: What is the prey in the pond at, say, a
6 hundred parts per thousand?

7 DR. WARNOCK: By then it is very debouched of
8 invertebrates, dominated by brine flies and brine shrimp and
9 some water macros and a few others. It is basically a
10 handful of invertebrate species.

11 MR. OSIAS: If we go to the first pond which has Bay
12 water in it, what is the salinity there?

13 DR. WARNOCK: It's probably around 22 parts per
14 thousand.

15 MR. OSIAS: In different ponds is there different prey
16 in each pond?

17 DR. WARNOCK: It changes. It is a gradual change. It
18 is an absolute thing. Again, we have fish up through -- as
19 Dr. Hurlbert already said, this switches by species. But
20 you have fish up into the 60, 70 parts per thousand they
21 start to die out. And then you have a series of ponds and
22 we don't understand this totally, but you have a series of
23 ponds with a super abundance supply of a few species of
24 invertebrates, and that brings all the birds in that eat
25 those, that can eat those types of prey.

1 MR. OSIAS: The fish eating birds sort of stop at the
2 ponds, that are 60 or 70?

3 DR. WARNOCK: The fish eating stops at the roosting
4 salt ponds, which they also use the ponds for.

5 MR. OSIAS: What species are in the, fish species, are
6 in the ponds, say, between 45 parts per thousand and parts
7 per thousand?

8 DR. WARNOCK: Offhand I don't know.

9 MR. OSIAS: Is it the tilapia?

10 DR. WARNOCK: Fish species? Yeah.

11 MR. OSIAS: Do you know what fish species are in
12 there?

13 DR. WARNOCK: No, I don't know fish species. I know
14 there are no tilapia. That is an introduced fish, they
15 haven't been introduced into the Bay environment that I know
16 of.

17 MR. OSIAS: So there is potentially other species that
18 could live up to 60 parts per thousand besides tilapia?

19 DR. WARNOCK: Other species of fish, yes, that is
20 correct.

21 MR. OSIAS: If those ponds concentrate in salinity, I
22 assume they also concentrate in any other suspended mineral
23 that doesn't evaporate; is that right?

24 DR. WARNOCK: I don't know.

25 MR. OSIAS: Would you assume if there was one part per

1 thousand selenium coming into the first pond, that by the
2 time you got to the last pond it would be more concentrated
3 than that?

4 DR. WARNOCK: I don't know.

5 MR. OSIAS: Have you studied intake of selenium in bird
6 species?

7 DR. WARNOCK: No, I haven't.

8 MR. OSIAS: Are you aware that others have?

9 DR. WARNOCK: Yes, sir.

10 MR. OSIAS: Does it come through the food chain?

11 DR. WARNOCK: Yes, sir.

12 MR. OSIAS: Does it collect, at least in general,
13 through fish intake of other, whatever fish eat, and
14 ultimately they get concentrated selenium?

15 DR. WARNOCK: It does bioaccumulate.

16 MR. OSIAS: That was the word I was looking for.

17 Would you assume there is biocumulation for whatever is
18 in those ponds as it goes through the evaporative transfer?

19 DR. WARNOCK: That would be a good assumption.

20 MR. OSIAS: Do you have any reason to believe that that
21 would be different at the Salton Sea?

22 DR. WARNOCK: Well, the reason I say I don't know is
23 because at the Salton Sea if you look at selenium in the
24 water and it comes out of the Colorado, my meager
25 understanding of it, at two parts per million it goes

1 through the field at 26 and by the time it hits the Sea it
2 is at one part in the water column. Things are going on. I
3 don't understand where it is going.

4 So if you follow your line of logic, I wouldn't expect
5 you would hit one part per million in the Sea.

6 MR. OSIAS: Something is going on between the Sea and
7 the fields?

8 DR. WARNOCK: Yes.

9 MR. OSIAS: But once it's in the Sea at one part per
10 thousand and then you start evaporating it, presumably --

11 DR. WARNOCK: I think bioaccumulation would occur the
12 same way.

13 MR. OSIAS: Is there monitoring at the salt ponds for
14 bioaccumulation for any substances?

15 DR. WARNOCK: Monitoring, there have been studies that
16 have looked at it. Whether there is continuous monitoring,
17 I don't know.

18 MR. OSIAS: Do you know if any data has been published
19 for any of the substances that are in the Bay?

20 DR. WARNOCK: Yes, there have.

21 MR. OSIAS: They're referenced in your extensive
22 bibliography?

23 DR. WARNOCK: Not that I remember.

24 MR. OSIAS: Roosting, that is where, I guess, bird
25 perches?

1 DR. WARNOCK: Resting, sleeping. That is a roosting
2 bird.

3 MR. OSIAS: Mullet Island was mentioned as an important
4 island that is isolated from the shore, correct?

5 DR. WARNOCK: Yes.

6 MR. OSIAS: Is it important for roosting and nesting?

7 DR. WARNOCK: Yes, sir.

8 MR. OSIAS: And the risk is when an island gets
9 connected by a land bridge, then it is no longer an island
10 and predators can get there, correct?

11 DR. WARNOCK: Yes. We saw that in Mono Lake, the
12 California gulls.

13 MR. OSIAS: You were here, I think, for the fishermen,
14 were you not, when they testified?

15 DR. WARNOCK: Yes. Good testimony.

16 MR. OSIAS: Did you hear Mr. Karr testify that there is
17 submerged structures in the Salton Sea?

18 DR. WARNOCK: Yes, sir.

19 MR. OSIAS: Those structures are submerged because the
20 Sea rose past their height?

21 DR. WARNOCK: I assume so.

22 MR. OSIAS: As the Sea went down, they would become
23 less submerged, correct?

24 DR. WARNOCK: Yes.

25 MR. OSIAS: There may be a point in time where they're

1 exposed, but not accessible to the shore, correct?

2 DR. WARNOCK: They may be.

3 MR. OSIAS: Would they then be available for roosting?

4 DR. WARNOCK: If they do indeed become exposed, yes.

5 MR. OSIAS: It's probably easier to roost than to nest;

6 is that right?

7 DR. WARNOCK: Very much so.

8 MR. OSIAS: I'm way beyond my expertise here.

9 Could those structures be adapted so that they also

10 could be used for nesting?

11 DR. WARNOCK: Not to accommodate 50,000 birds, no.

12 MR. OSIAS: There is space limitation?

13 DR. WARNOCK: Most definitely.

14 MR. OSIAS: But the structures themselves could be

15 adapted; it is only a question of how many nests you could

16 fit?

17 DR. WARNOCK: Right, yeah. You could go out and make

18 roosting rising sites I think.

19 MR. OSIAS: You said roosting. I was asking about

20 nesting.

21 DR. WARNOCK: And nesting.

22 MR. OSIAS: How many nests can Mullet Island hold?

23 DR. WARNOCK: An awful lot. It holds, I want to say,

24 roughly 15,000 double-crested cormorants.

25 MR. OSIAS: What square miles or acres or something?

1 DR. WARNOCK: I don't know offhand. It is not a huge
2 island, but it is much bigger than this room.

3 MR. OSIAS: Three times this room?

4 DR. WARNOCK: It's big, easily three times. 15,000,
5 30,000 birds, and these are big birds.

6 MR. OSIAS: They are jammed in there pretty tight?

7 DR. WARNOCK: In certain parts, yes.

8 MR. OSIAS: At least density of bird population on an
9 island doesn't produce bird warfare?

10 DR. WARNOCK: Yes, it does.

11 MR. OSIAS: When might -- that might continue if you
12 had to build nests on areas in the Sea?

13 DR. WARNOCK: Yes, sir.

14 MR. OSIAS: I guess it would be better to have a larger
15 island?

16 DR. WARNOCK: Or more.

17 MR. OSIAS: Or subdivided, have multiple sites?

18 DR. WARNOCK: Condominiums. Yes, sir.

19 MR. OSIAS: I know that sounds funny, but, in fact,
20 given the sort of history that some quibble with, but sort
21 of the accidental planning that went for the Salton Sea as a
22 bird habitat, you're probably able to design a better one;
23 isn't that right?

24 DR. WARNOCK: I think so, yes. If you had the money.

25 MR. OSIAS: That would lend itself to, perhaps, the big

1 global solution that Mr. Taylor was talking about if we are
2 going to do something, let's design it and make it better?

3 DR. WARNOCK: I think that's -- certainly, that would
4 be my hope and I'm sure Dr. Taylor would share that.

5 MR. OSIAS: How long have you been interested in birds?

6 DR. WARNOCK: Forty-two years. The first year I wasn't
7 aware of them.

8 MR. OSIAS: Thank you. I have nothing further.

9 CHAIRMAN BAGGETT: I have a few questions.

10 ---oOo---

11 CROSS-EXAMINATION OF NATIONAL AUDUBON SOCIETY - CALIFORNIA

12 BY THE BOARD

13 CHAIRMAN BAGGETT: Are you aware of any research on the
14 impacts of PM-10 on the avian populations?

15 DR. WARNOCK: Somebody E-mailed me that exact question,
16 and I am not.

17 CHAIRMAN BAGGETT: Wasn't me.

18 DR. WARNOCK: I suggested that poultry science folks is
19 a good place to start looking.

20 CHAIRMAN BAGGETT: This is kind of following Mr. Osias'
21 reading my mind or my computer. I was also interested in
22 the impact of selenium on fish and wildlife. Are you aware
23 of any research that you know of that has been at the
24 Salton Sea?

25 DR. WARNOCK: A fair amount of selenium research in

1 both the agricultural drainage areas and some from birds at
2 the Sea itself.

3 CHAIRMAN BAGGETT: In the work you've done in the salt
4 ponds, and I guess it would be in the Bay Area, have you
5 been -- has toxicity become a problem in any of the species
6 there?

7 DR. WARNOCK: I know certain species have been looked
8 at, but the difficulty is about saying, well, what comes
9 specifically from the salt pond versus other areas since
10 these are such mobile species.

11 And I really don't know the results, I don't know of
12 any that cast a huge alarm. But I do think there are some
13 elevations of certain elements and other things that cause
14 some concern within the Bay itself.

15 CHAIRMAN BAGGETT: Selenium wouldn't be one of them?

16 DR. WARNOCK: Selenium -- actually, I don't know. I
17 know that mercury is an issue because of the mines.

18 CHAIRMAN BAGGETT: Legacy.

19 DR. WARNOCK: Yes.

20 CHAIRMAN BAGGETT: You discussed the impacts of
21 lowering this elevation of the Salton Sea on bird habitat
22 and so on.

23 What impacts, if any, would increase in on-farm
24 conservation practices have on population or diversity of
25 species on the Salton Sea Basin?

1 DR. WARNOCK: Could you be more specific on what
2 practices would be practiced?

3 CHAIRMAN BAGGETT: If you conserved water, say you used
4 less water by using dripping irrigation, you have less water
5 used on that farm, so that water, therefore, is proposed to
6 be transferred from a point north or upstream on the
7 Colorado which is talking about the issue before us.

8 DR. WARNOCK: Yes.

9 CHAIRMAN BAGGETT: You conserve water. So you use less
10 water on individual per acre basis.

11 DR. WARNOCK: I think -- well, let's talk drip
12 irrigation. If you had all those drip irrigation units out
13 there, and I don't know what they would look like, there is
14 potential for keeping birds off areas just because they
15 don't like the structures. I think there is one of these,
16 what do you call it, a paradox of water conservation would
17 probably negatively affect some Imperial Valley bird
18 populations.

19 CHAIRMAN BAGGETT: Canal linings would be another?

20 DR. WARNOCK: Canal linings is certainly one with the
21 black rails and some of the other marsh birds. What happens
22 with the unlined canals, is seeps are formed and a small
23 marsh is formed and these little secretive marsh birds hang
24 out. The flooded alfalfa fields that you see the tens of
25 thousands of cattle egret and white-faced ibis and other

1 birds foraging at. I assume that would have an impact.

2 CHAIRMAN BAGGETT: There were other issues brought up
3 yesterday, mortality rates. How do you go about
4 establishing baseline mortality rates for avian species?

5 DR. WARNOCK: That is a great question. I'm not sure.
6 I think --

7 CHAIRMAN BAGGETT: If you are just going to come up
8 with just an average die-off of a brown pelican is 1 percent
9 a year in the normal population.

10 DR. WARNOCK: That is the kicker, though, what is a
11 normal population, what is a normal area. The way I would
12 go at it is you would pick a number of focal sites that have
13 the species and the environmental conditions that represent
14 your site, but when you think of that you think, well, what
15 is another air that would duplicate the Imperial Valley, and
16 that would be tough to duplicate that.

17 CHAIRMAN BAGGETT: I'm talking the general science, if
18 you will, how you quantify it.

19 DR. WARNOCK: Well, you would have other sites that are
20 of similar conditions and you would monitor baseline
21 mortality going out and looking for dead and dying
22 birds, and knowing what populations of birds used those
23 particular areas.

24 CHAIRMAN BAGGETT: You would average a number of years?

25 DR. WARNOCK: You would average a number of years or

1 average a number of sites, or preferably you would do both.
2 Because presumably there is a great deal of variation.

3 CHAIRMAN BAGGETT: That is what I was going to ask. Is
4 the peak -- do you say fish eating birds tend to have peaks
5 and crashes in populations, or do they remain constant over
6 time?

7 DR. WARNOCK: Most of these bird populations track to
8 some degree. There might be a lag, but they are tracking
9 prey abundance. The prey abundance, depending on what you
10 eat, can be affected by so many different things, el nino
11 events. We heard about the reduced flow of the Colorado
12 River, 25 percent. Well, the Southwest is in the midst of a
13 huge drought, and bird populations suffer during those
14 times. So they're more stressed and you get bigger disease
15 outbreaks, et cetera.

16 It is a difficult question to do because sites are so
17 variable and conditions are so variable. So you need to try
18 to account for that variability. You need huge sample sizes
19 and duplicated efforts. It is a tough one.

20 CHAIRMAN BAGGETT: Over the last, say, hundred years
21 pelican population could have 10, 20 percent swings?

22 DR. WARNOCK: It could. The fact is for most of our
23 bird populations in the West we don't know what population
24 trends are.

25 CHAIRMAN BAGGETT: It is fair.

1 Dr. Taylor, one question. A number of previous
2 witnesses have testified the necessity to have fallowing of
3 lands in IID in order to provide for the transfer without
4 compromising the existing flows into the Salton Sea.

5 Does Audubon Society support this position?

6 MR. TAYLOR: We have spoken with some favor toward a
7 fallowing concept. And we would urge that the applicant and
8 this body would work in more detail to fashion a system that
9 would really bring that idea forward in a way that would
10 produce the kinds of result which we believe are really
11 necessary.

12 That is a long way of saying we think there is a lot of
13 merit to that as a concept, but it needs a lot more detail
14 to properly address the social impacts, the ecological
15 impacts. Dr. Warnock talked about the farm-related bird
16 values. And we clearly understand that the farms in
17 Imperial County are really important to the overall value of
18 avifauna of the system. We think it has a lot of merit.

19 CHAIRMAN BAGGETT: That's all.

20 Tom.

21 ---oOo---

22 CROSS-EXAMINATION OF NATIONAL AUDUBON SOCIETY - CALIFORNIA

23 BY STAFF

24 MR. PELTIER: I have some questions for -- is it Dr. or
25 Mr. Taylor?

1 MR. TAYLOR: I am a Mister.

2 MR. PELTIER: Mr. Taylor, we had some testimony
3 yesterday about the Colorado River Delta and Mexico. I
4 didn't hear -- I was wondering if you can tell me does the
5 Audubon Society have a position on the restoration of the
6 Delta?

7 MR. TAYLOR: We have spoken to that issue. Another one
8 of the principles which did not make it into my testimony,
9 and would be happy to provide it. And that is we have not
10 sought to fix the Salton Sea at the expense of the Colorado
11 River Delta. That is why we have not argued for increased
12 exports from the river to the Salton Sea. We see the Delta
13 and the Sea as being inextricably linked. They are really
14 one part -- they're two parts of the same system that have
15 been somewhat divorced through a lot of plumbing of the 20th
16 century.

17 We are mindful of the environmental values of the
18 Colorado River Delta, and we believe that an appropriate
19 restoration scheme should and ought to take place, and we
20 have attempted to support that.

21 MR. PELTIER: Well, some of the testimony we heard
22 related to the difference in productivity of the Salton Sea
23 versus the delta environment down there. And the way it was
24 characterized, and I may be misstating it, but in general
25 terms the Salton Sea was vastly more productive than the

1 Delta.

2 Would that justify a tradeoff of the sacrifice of
3 water to the delta?

4 MR. TAYLOR: Let's go back. I'm sure you read Leopold
5 Sand Count Almanac. There is a chapter in Sand County
6 Almanac called the Green Lagoons. That is his story of
7 canoeing through the Colorado River Delta. So during
8 Leopold's time, it must have been quite a spot. So we think
9 that today's baseline, while we certainly have spoken to the
10 value of Salton Sea as exceeding that of the delta today,
11 the baseline probably should be drawn in a different form.

12 MR. PELTIER: One of the -- earlier we had some
13 questions about the idea that the Salton Sea is of national
14 significance and that providing water for the Salton Sea
15 perhaps should be viewed as a federal burden and not just a
16 state burden.

17 You heard that?

18 MR. TAYLOR: Yes.

19 MR. PELTIER: If the federal government could provide
20 water to the Salton Sea by operating the Yuma desalter
21 vastly reducing the flows to the Cienega de Santa Clara and
22 Mexico, would that be something you guys would be in favor
23 of?

24 MR. TAYLOR: We have not supported that concept because
25 it might affect the options available for the delta.

1 MR. PELTIER: Thank you.

2 I just have a couple questions for Dr. Warnock.

3 On the issue of productivity, we have heard all day
4 today and yesterday about how productive the Salton Sea
5 environment is. I was wondering from your viewpoint is that
6 the only criteria or main criteria you have looked at in
7 evaluating the quality of the environment?

8 DR. WARNOCK: Short answer, no. But I think it's a
9 very important one. What makes this Salton Sea unique with
10 really a handful of, say, from a water bird's perspective
11 along with a handful of other sites in North America is that
12 it is extremely productive. It is a site where large
13 numbers of birds can come to and find a super abundant
14 supply of food, and you think that most of these are
15 migrating birds. This is the super filling station. They
16 come in and can -- what we call a staging area. They can
17 stay for a period of time and accumulate large reserves of
18 fat which are their gasoline to get them to the next place.
19 So in that, it is just an incredible resource.

20 MR. PELTIER: Do you have any concerns about the, I
21 don't want to use the term "fat," but it seems the Salton
22 Sea cannot be sustained without massive intervention by
23 humans. Does that concern you or do you think that is a --

24 DR. WARNOCK: Certainly that is concern. I get back to
25 the fact that we've already degraded so much wetland

1 habitat in the West, that we can ill afford to continue to
2 ignore that at the expense of all other things, human growth
3 especially.

4 MR. PELTIER: My last question on that is: If you
5 talk about the expense, do you consider the cost of putting
6 the Salton Sea on a life support system compared to the --
7 would those dollars provide better habitat in other places
8 or restore a lot more habitat as far as bangs for the
9 dollars, do you think in other areas?

10 DR. WARNOCK: That's a very good question, but I'm
11 afraid I don't have the answer.

12 MR. PELTIER: Thank you.

13 That is all.

14 MR. FECKO: I think most of my questions are for Dr.
15 Warnock. Jump in if you have anything to offer.

16 You had stated that in response to Mr. Osias' you're
17 more of an avian disease biologist or specialist by any
18 means, but you have some general knowledge of it?

19 DR. WARNOCK: Yes, sir.

20 MR. FECKO: Do you know what kind of avian diseases are
21 present in the Salton Sea in the Lower Colorado River area?

22 DR. WARNOCK: In the Salton Sea I could name a few.
23 There is avian cholera, botulism, New Castle's disease which
24 is a new one for this region. There are various others. I
25 think botulism and cholera are the big ones. The New Castle

1 has affected and wiped out a lot of the cormorants.

2 MR. FECKO: Do you have any general knowledge of how
3 those diseases are sustained or spread through bird
4 populations in the Sea?

5 DR. WARNOCK: Very roughly. And if you ask me
6 specifically for which disease, I couldn't tell you. I know
7 that stagnant, noncirculating water will lead to, I think,
8 botulism and cholera outbreaks. How New Castle's is passed
9 along, I don't have a clue.

10 MR. FECKO: Would you suspect those are density
11 dependent types of diseases?

12 DR. WARNOCK: Most disease outbreaks are, yes.

13 MR. FECKO: Would you expect in the event of this
14 transfer and the lower water levels in the Sea -- this might
15 be beyond your expertise, would you expect those diseases
16 and those potential diseases to be exacerbated?

17 DR. WARNOCK: Don't know.

18 MR. FECKO: What kind of efforts are made by natural
19 resource managers anywhere in the West to prevent these
20 outbreaks or combat the outbreaks?

21 DR. WARNOCK: I think that the key is circulating
22 water. From my understanding it is to try to circulate the
23 water, and keeping the water temperatures down, which
24 circulation, I think, helps do that.

25 MR. FECKO: Do you think that perhaps the massive fish

1 die-offs that are seen on occasion in the Sea have anything
2 to do with spreading the disease?

3 DR. WARNOCK: I don't know.

4 MR. FECKO: One last thing.

5 Have you seen or heard of any reports of evidence of
6 selenium toxicosis around the Sea at this point?

7 DR. WARNOCK: Would you define selenium toxicosis?

8 MR. FECKO: Mutations, genetic effects on the bird
9 species, lost nests?

10 DR. WARNOCK: I know of studies in a few species where
11 selenium levels were elevated to levels that were of concern
12 to -- they were at levels where they cause health effects.
13 I don't know what the effects were. Clapper rails were one
14 of them. Carol Roberts, U.S. Fish and Wildlife Service, I
15 think has published on that. Kim Satmeyer [phonetic] has
16 published on some very high selenium levels in various
17 waterbirds species at the Sea.

18 MR. FECKO: Thank you.

19 That is all.

20 CHAIRMAN BAGGETT: Any redirect?

21 MR. YATES: I don't believe we do.

22 CHAIRMAN BAGGETT: Would you like to enter your
23 exhibits?

24 MR. YATES: Yes. Like to enter exhibits, Audubon
25 Exhibits 1 through 18, and that is, I believe, 1 through 9

1 Audubon-PCL have already been entered in.

2 CHAIRMAN BAGGETT: Any objections?

3 MR. OSIAS: Mr. Chairman, perhaps Mr. Yates, with
4 respect to Exhibit 18, your letter on behalf of others, it's
5 a comment. With the same stipulation as your letter for
6 some other group.

7 MR. YATES: Right.

8 MR. OSIAS: That was comments rather than truth or
9 legal?

10 MR. YATES: Right.

11 CHAIRMAN BAGGETT: With that understanding that it is a
12 comment and not proffered for evidence. With that, so
13 entered.

14 Let's take a ten-minute break and set up for National
15 Wildlife.

16 (Break taken.)

17 CHAIRMAN BAGGETT: Let's resume with the last panel for
18 the day.

19 MR. JOHNSON: Good afternoon, Mr. Chairman, counsel.
20 My name is Kevin Johnson. I'm an attorney, and I have been
21 asked by NWF to help put on this panel this afternoon.

22 I would like to begin by thanking the Chair for his
23 cooperation and flexibility in terms of us scheduling
24 speaker times. Over the last few weeks I know that has been
25 a difficult and challenging issue.

1 I would like to start off first by talking about NWF
2 and what its interests are in connection with these
3 proceedings. Some of you may know NWF is the largest
4 environmental organization in the United States. It has
5 over 4,000,000 members. Has over a hundred thousand members
6 in the state of California. It recently opened a new
7 office, a regional office, a binational office in San Diego,
8 based on the recognition that San Diego is indeed one of the
9 true hot spots in the county, even in the world, in terms of
10 endangered species threats and extensions.

11 The diversity of plant and animal life in San Diego is
12 second only to some of the Hawaiian Islands in terms of what
13 you are looking at in terms of what you are looking at in
14 terms of rare and endangered species. NWF has joined a
15 number of other national and regional environmental
16 organizations in recent years coming to San Diego. The
17 Nature Conservancy, Central Biological Diversity and other
18 groups have all come in and opened offices and said we've
19 really got to be involved with what is going on because
20 there are huge pressures for growth, there are huge
21 pressures for the elimination of existing natural resources,
22 and the destruction, of course, is unfortunately proceeding
23 at a very rapid pace.

24 One of the concerns that NWF has right now with respect
25 to this reported proposed water transfer is that it will

1 indeed accelerate the unnecessary unreasonable destruction
2 of fish and wildlife. So we are here before you today with
3 a couple of experts. On the right is Dr. Suzanne Michael
4 who is an urban geologist or geographer, excuse me.

5 Know anything about rocks?

6 And Mr. Craig Jones who is a long-time planner who has
7 worked with a number of cities. He will be talking to us in
8 a moment about other things about what we will lay out as
9 the causal change between guaranteed water supplies, growth
10 inducement, and then the unreasonable harm to fish and
11 wildlife.

12 We have previously introduced to you in the NWF packet
13 of exhibits, 17 documents. I thought it would be useful to
14 walk briefly through them and highlight a few of the
15 documents that we think you should pay particular attention
16 to, and we will be basing a number of our questions and
17 answers as we go through the panel this afternoon based on
18 these documents.

19 Initially, we have written testimony and statement of
20 qualifications by David Hogan, who is with the Center for
21 Biological Diversity. You will hear that those documents,
22 while Mr. Hogan who was originally going to be one of the
23 speakers, couldn't be available this week, those documents
24 have been reviewed and relied upon by the expert witnesses
25 before you.

1 After that we have a letter from Mr. Jones discussing
2 primarily the issue of growth inducement and also covering
3 within that umbrella the issue of reactions of government
4 and private industry to the issue of guaranteed water
5 supply.

6 After that we have a letter from our law firm which
7 goes through and highlights a number of the historical
8 comments that have been made by representatives of the water
9 authority, by representatives of the business interest in
10 San Diego County and government officials, all basically
11 recognizing and acknowledging the fundamental simple truth
12 that more water supports more growth. And I would note that
13 one of the most telling documents appears as Exhibit 7 which
14 is a verified complaint, verified under penalty of perjury,
15 by the manager of San Diego County Water Authority, wherein
16 the County Water Authority has sued MWD. They want to get
17 more water from MWD, and they go into great detail about the
18 serious impacts upon the economy and the growth that they
19 want to have in San Diego County if they don't get this
20 extra water from MWD. That document is worth reading to the
21 extent there is any remaining questions about the issue of
22 whether guaranteed water will be growth inducing. And we
23 submit inherently and obviously it is.

24 Now, continuing on, I skipped over Exhibits 6 and 7.
25 Exhibit 6 is a SANDAG, which is the regional planning

1 agency, as you know, for San Diego County. It is an
2 economic prosperity report prepared in July 1998, and we
3 actually quote from that our letter that our firm submitted.
4 And it talks about how reliable, increased water supplies
5 are essential to economic growth and economic prosperity in
6 San Diego County.

7 Carrying on, Exhibit 8 is an excerpt of some
8 proceedings regarding the CALFED Delta project which, again,
9 is quoted in our letter. We have nine -- some quotes from
10 former Interior Secretary Babbitt on the issue of growth in
11 San Diego County and water.

12 And then we have a series of reports out of committee
13 regarding the legislative history on SB 221, which
14 selectively have compelling statements regarding the linkage
15 between water supply, guaranteed water supply, new water
16 supply and growth, responsible growth management in the
17 state of California.

18 Then we have Exhibit 13 which I also commend to your
19 attention, a report that was done by the National Wildlife
20 Federation called Paving Paradise. It is very well thought
21 out but succinct analysis, concluding that the single
22 biggest threat to habitat, single biggest threat to fish and
23 wildlife in the state of California, is uncontrolled urban
24 sprawl. And we will in our presentation today make clear
25 the linkage between water, urban sprawl, the degradation and

1 destruction of habitat and unreasonable harm to fish and
2 wildlife.

3 Finally, Exhibits 14 through 17 include the written
4 testimony of Dr. Michel, her statement of qualifications,
5 excerpt from her dissertation and also some articles she
6 relied upon heavily in the letter that she wrote.

7 When all is said and done here, we hope that you will
8 walk away with the fundamental point that the project as it
9 is proposed, a project which is under studied, ill
10 considered, unconditioned, that this project will
11 unquestionably, if it is proved, with nothing further being
12 done about it, will cause reasonable harm to fish and
13 wildlife.

14 Mr. Jones will talk about the linkage between
15 guaranteed water supplies and what local decision makers are
16 going to be doing regarding macro and microing these
17 decisions and project approvals. And Ms. Michel will be
18 emphasizing the actual sort of physical follow-up, if you
19 will, to those decisions as they affect water quality
20 impacts on fish and wildlife.

21 At this point, I would like to have the witnesses sworn
22 in.

23 (Oath administered by Chairman Baggett.)

24 ----oOo----

25 //

1 DIRECT EXAMINATION OF NATIONAL WILDLIFE FEDERATION

2 BY MR. JOHNSON

3 MR. JOHNSON: Mr. Jones, would you state your full
4 name for the record, please?

5 MR. JONES: My name is Craig Bruce Jones. I reside in
6 the City of San Diego at 10055 Wildlife Road.

7 MR. JOHNSON: What is your occupation?

8 MR. JONES: My occupation is as city planner. I have
9 18 years' experience as a city planner working for various
10 municipalities in Southern California, all but one of those
11 in San Diego County. In addition, eight years as a planning
12 consultant for various interests relating to planning
13 issues.

14 MR. JOHNSON: With respect to the work you have done
15 for cities, how many cities have you worked for?

16 MR. JONES: Five or six. I have to do a recount. I
17 believe it is five.

18 MR. JOHNSON: Can you explain to the Board what the
19 scope or sort of work you were doing in connection with
20 planning?

21 MR. JONES: Actually, my responsibilities working for
22 cities have run the gamut, full range of planning,
23 development issues, including responsibility for planning
24 and development review, what is known as current planning,
25 also what is known as long-range planning, that is

1 development of and maintenance of city general plans,
2 housing elements, transportation elements and also
3 responsibility for environmental impact assessment and
4 compliance with California Environmental Quality Act, both
5 for city initiated projects, city adopted documents such as
6 general plans and ordinances and projects reviewed by city
7 for approval.

8 MR. JOHNSON: Now in the process of doing this work
9 have you had occasion to work really with private industry
10 on proposed residential, commercial and industrial
11 development?

12 MR. JONES: Right.

13 MR. JOHNSON: As part of that work have you been asked
14 to look at issues by, for example, project applicants
15 dealing with mitigation, mitigation costs and economic
16 feasibility?

17 MR. JONES: Absolutely.

18 MR. JOHNSON: Have you been asked to look or has it
19 been necessary for you to consider the issue of availability
20 of infrastructure including things like electricity,
21 transition facilities, electricity itself, water, water
22 facilities in connection with approving or disapproving a
23 project?

24 MR. JONES: Availability of that basic supporting
25 infrastructure is always an issue related to development,

1 yes.

2 MR. JOHNSON: Does it become a cost issue with respect
3 to how a project is ultimately put together and approved?

4 MR. JONES: I know that it is a cost issue for
5 developers in terms of their penciling out their projects.
6 Of course, that is there be all and end all.

7 MR. JOHNSON: With respect to projects that have been
8 brought before you by private industry, have you been
9 responsible for actually working with them in terms of
10 mitigating their impacts that they might have on sensitive
11 environmental resources?

12 MR. JONES: It has been my responsibility to look at
13 environmental impacts, addressing the mitigation of those
14 impacts.

15 MR. JOHNSON: How did you come to get involved here at
16 this hearing today?

17 MR. JONES: I was requested to act as a consultant on
18 behalf of the National Wildlife Federation to prepare the
19 thesis on file here in the record, related to both the
20 growth inducement effects of this proposal and the impacts
21 of potential growth inducement within San Diego County, and
22 also the relevancy relationship between availability of
23 water and land development and patterns of land use
24 development.

25 MR. JOHNSON: With respect to the project that is

1 proposed, this water transfer from Imperial Valley to San
2 Diego, do you have an opinion about whether not that
3 particular project is growth inducing?

4 MR. JONES: Yes. It is my opinion that, in fact, it is
5 growth inducement, and notwithstanding lack of analysis in
6 the Draft EIR/EIS.

7 MR. JOHNSON: Why is that?

8 MR. JONES: It is growth inducing -- try to be as brief
9 as possible. Because I believe the amount of water provided
10 by this project is a net increase above amounts of water
11 which otherwise would be available to San Diego County and
12 the various water districts in San Diego County. I also
13 believe, as represented, that this would provide a more
14 reliable flow of water year in and year out, notwithstanding
15 dry years, wet years kinds of arguments. And as a result
16 this would result in a more reliable cost of water
17 resources, less liable to fluctuations.

18 This notion of available water and its relationship to
19 planned or expected regional growth is documented from San
20 Diego Association of Governments on down. It is admitted
21 and on the record that San Diego is expected to grow
22 significantly within the current SANDAG projection period,
23 2020. That substantial new growth in development must be
24 supported by additional available water. It is assumed by
25 SANDAG that every drop of water required for that additional

1 growth and development will be available.

2 MR. JOHNSON: Now there's been arguments put before
3 this panel that there is not new water being provided.

4 How do you respond to that particular contention?

5 MR. JONES: Well, had a chance to review those
6 arguments in the Draft EIR/EIS, and I have in my written
7 piece I responded to those.

8 Should I go through those in detail?

9 MR. JOHNSON: Can you briefly summarize those?

10 MR. JONES: The proponents argue that this would be no
11 additional water supplied within Southern California
12 without addressing the issue of where that water is diverted
13 from and to. The key point here is that this is a proposal
14 to take water which now goes to Imperial County through the
15 Imperial Irrigation District and to transfer that water from
16 -- anywhere from 130- up to 300,000 acre-feet per year to
17 the urbanizing coastal area of San Diego.

18 So while the gross terms there may be no net increase
19 of water coming out of the Colorado River, what is not
20 addressed is the fact that this is a significant transfer of
21 water to an area of Southern California where it will fuel
22 urban growth and development.

23 It's been argued that this proposed project would
24 reallocate an existing water supply to ensure drop
25 reliability. That implies that this water is not to be made

1 available for urban growth and development, but rather set
2 aside for emergency circumstances. However, there is
3 nothing in place, no regulatory requirement, no policy by
4 various agencies in San Diego County that would make that
5 true, although representatives of San Diego County Water
6 Authority have stated to me, in fact, this water, once
7 transferred over and once stored through projects that the
8 Water Authority is undertaking, would be available for
9 continued urban growth and development.

10 The proponents argue, they try to argue that this
11 project, that this water transfer, doesn't entail any
12 expansion of existing water delivery or storage systems in
13 San Diego County. However, what is not addressed is that
14 the San Diego County Water Authority is undertaking a
15 separate project which provides just that additional storage
16 capacity and distribution infrastructure. So those two
17 projects go hand in hand and make this water available for
18 distribution for growth and development in San Diego County.

19 MR. JOHNSON: Let me stop you there.

20 Should both of those projects be studied in an EIR
21 together?

22 MR. JONES: Absolutely should be.

23 MR. JOHNSON: Otherwise what are we doing?

24 MR. JONES: Otherwise you don't environmental analysis
25 as required.

1 MR. JOHNSON: Please continue.

2 MR. JONES: One of the arguments put forward is that
3 the San Diego County Water Authority/Metropolitan Water
4 District exchange agreement would somehow result in there
5 being no additional or no net increase of water made
6 available through MWD infrastructure to San Diego County
7 Water Authority. But that is not documented. It is a murky
8 argument at best. And irrespective of their argument that
9 it is somehow related to the blend of types of water, there
10 is nothing in place that would limit the Water Authority and
11 Metropolitan Water District from taking this transfer of
12 water plus water from other sources to rule in a net
13 increase of water available to the Water Authority.

14 Finally, there is an argument that tries to say that
15 land development and growth in San Diego County are
16 exclusively a purview of cities and counties without regard
17 to the availability and resources, such as water, and that
18 those decisions are unaffected by government actions to
19 bring water to urbanization.

20 I find that to be a false argument,
21 mischaracterization. In fact, SANDAG readily admits that
22 their growth projections, again, assume that every drop of
23 water required to support their projections of growth,
24 whether their projections are right or wrong, that all that
25 water will be available, and that the affect of this project

1 is to help make all of that water available so that every
2 amount of that growth can occur.

3 MR. JOHNSON: Let me ask you this: Let's assume for
4 the moment that these arguments that have been put forward
5 by the project proponent would be seriously entertained by
6 the decision makers. What happens if industry and local
7 government believes that they not only have guaranteed
8 supply of water from the Imperial Valley pursuant to this
9 agreement, but they have the ability to get more water if
10 they need it from MWD, what does that do to their decision
11 making and how they proceed with respect to making major
12 land use decisions in terms of general plan amendments,
13 rezones and individual project approvals?

14 MR. JONES: Let me address that in terms of a
15 comparison, cause and effect comparison, between land use
16 decision making planning and approvals with the project and
17 without this project.

18 With this project, the whole purpose of the project is
19 to ensure that an ample supply, quantity of water, and
20 reliable continuous flow of water is available to enable
21 continued urban growth in San Diego County. And this would,
22 in my opinion, allow continuation of the pattern of growth
23 and development in the county that's historically been true;
24 that is business as usual.

25 What do I mean by that? With this project there would

1 be no incentive in terms of a reduction of water
2 availability to adopt different patterns or forms of urban
3 development from what is the traditional and continuing form
4 for Southern California and San Diego County, which is an
5 expansive urban pattern that is often popularly referred to
6 as sprawl.

7 What is important to keep in mind here is that this is
8 a land expansive pattern of growth and development.

9 Suburban sprawl is an element of that with its preeminent
10 emphasis on detached single family homes, expansive land,
11 graded pads and lots, separated and diffuse industrial
12 parks, commercial centers, employment centers. In other
13 words, a very land -- extensive land expansive pattern,
14 which requires more land and takes up a greater proportion
15 of land away from undeveloped natural habitat area.

16 There would, in this scenario, be no incentives for
17 governmental agencies, which review and approve development,
18 to plan and zone for patterns of development, which would
19 save, rather than continue to use, greater amounts of land
20 and as a result greater amounts of water.

21 Let me be clear that the land extensive spread out
22 pattern of land development necessarily requires a greater
23 amount of water usage per unit of development. That is
24 because there is much more landscaped area which requires
25 artificial landscape irrigation systems primarily.

1 Without this project there would be lesser quantity of
2 water available to San Diego County Water Authority and thus
3 to the various jurisdictions which would view and approve
4 development in San Diego County. And it would be less
5 reliable water flow to support urban growth and
6 development.

7 Now this would create powerful incentives for land use
8 decision making bodies, that is the cities in San Diego
9 County and the county, to plan and zone for patterns of
10 growth which would be less land extensive and more water
11 conservant. Cities and counties are also very responsive to
12 arguments of the private sector to support and promote
13 private sector interest which include growth development and
14 economic well-being, economic expansion.

15 Without this project the private sector is going to
16 realize that if its interests in continued growth, economic
17 growth and expansion, are also going to be jeopardized, so
18 they are going to come over to the argument that we would
19 need to adopt, in order to continue to support levels of
20 growth, that is personal amount of economic activity, we
21 would have to adopt more compact land use patterns which
22 would use less water.

23 There could also very well be state legislative --

24 MR. OSIAS: Mr. Chairman, I hate to interrupt,
25 although it has been a lengthy narration. We have an

1 unusual circumstance here. We have a witness who is reading
2 from something, but it is not the testimony that was
3 submitted. This is supposed to be a summary of what came in
4 in writing, rather than an expansion of what hasn't come in
5 in writing. That's problem one.

6 Problem two, is, of course, they had to switch
7 witnesses. So I am trying to check during the last ten
8 minutes both parties' writings, and this isn't a summary of
9 either. So, I think we should limit it to his letter which
10 I think we should treat as testimony. They had to
11 substitute witnesses. I have asked counsel to ask him to
12 swear to his letter as witnesses would in written
13 testimony.

14 But I ask that he not be allowed to expand in this
15 summary period on his testimony and that we limit the
16 question and answer to summarizing what he did put in
17 writing, which I think he already has done.

18 MR. JOHNSON: Mr. Chairman, may I respond?

19 Part of what we are doing here today is responding to
20 issues and arguments that have been raised during the
21 course of the hearing that are directly related potentially
22 to be used to undermine --

23 CHAIRMAN BAGGETT: That is why we have rebuttal. This
24 is your case in chief. You're limited to what was
25 presubmitted. And if you're reading -- I was looking for

1 the same. I was trying to figure out what you were reading
2 from. It doesn't follow anything. We've all been trying to
3 figure this out up here.

4 I would sustain the motion. You can summarize the
5 letter you have written. You're available for cross. I
6 understand that you said you're familiar with the evidence
7 which you have submitted, so in cross-examination I assume
8 Mr. Jones is fair game, if you will, for evidence you have
9 submitted on cross, but certainly on direct. It is not his
10 direct testimony.

11 MR. JOHNSON: Thank you, Mr. Chair. The other part of
12 what we are doing basically is we are focusing primarily on
13 the contents of Page 2 of his letter, which addresses the
14 issue of industry behavior in relationship to water supplies
15 and the need for water, for example, in the biotech
16 industry. In addition, in the next paragraph after that the
17 discussion regarding Bayer Corporation's Berkeley facility.
18 There is discussion of the City of Chula Vista and one of
19 the things it has done.

20 CHAIRMAN BAGGETT: I understand. He can give a summary
21 of this. This is his letter. He can give a summary of
22 that, but not expand on what is in here. That is the
23 difference. That is new evidence. It is not evidence
24 that's been presubmitted under our rules. You're limited,
25 basically, to what is in here. This is his direct

1 testimony.

2 MR. OSIAS: Counsel may not have been here when you
3 suggested that for rebuttal you could submit that later and
4 go through this drill again.

5 MR. JOHNSON: I was not here.

6 CHAIRMAN BAGGETT: We will probably talk again at the
7 end of the day, how the rebuttal is. That is why
8 presubmittal of the witnesses and their testimony on
9 rebuttal. We will allow some time for that. We start
10 rebuttal next Tuesday. Then you can bring in new
11 information to respond to what's gone on previously.

12 MR. JOHNSON: Thank you, Mr. Chairman.

13 Mr. Jones, let's focus specifically on Page 2 here of
14 your letter that appears as Exhibit 3. This is your April
15 9th letter. And call your attention to the paragraph which
16 is basically in the middle of the page there, and it
17 indicates that San Diego, as the third largest concentration
18 of biotech companies in the United States. And then it goes
19 on to talk about what the city of Chula Vista has done in
20 connection with that industry and the issue of water
21 availability.

22 And could you please explain that for the Board and in
23 terms of the whole issue of the behavior of government
24 decision makers as it relates to proposed development and
25 water supply.

1 MR. JOHNSON: The purpose here is to show there is a
2 direct relationship between the availability of water and
3 reliability of the availability of that water. And
4 decisions of both private industry to develop within a
5 particular region and the governmental agencies to accept
6 and promote that kind of development.

7 San Diego County is noted as a center of high tech
8 industry and specifically in this new age biotechnology
9 industrial interests. San Diego County is also trying to
10 make sure for income purposes biotech industry is promoted
11 and supported, as they have a higher rate of pay per
12 employer. So that is a positive thing for the county to try
13 to promote.

14 With that in mind, cities and counties, including as
15 noted here Chula Vista, are going out of their way to try to
16 promote accommodation of high tech and biotech industries.
17 And with the example here, Chula Vista has created a high
18 tech-biotech zone as part of its new expansive development
19 on its eastern fringe. And as noted, within this zone the
20 city is offering benefits and incentives, including a series
21 of incentives intended to meet specialized needs of these
22 kinds of industry, and that includes making sure that there
23 is an uninterrupted supply of water. Biotech industries are
24 especially dependent upon a reliable quantity of water to
25 conduct their operations. So this is just an example of how

1 there is a direct relationship, again, between availability
2 of water, quantity of water and reliability of water, and
3 the potentiality for continued urban growth and
4 development.

5 MR. JOHNSON: As part of your review and in preparation
6 of this letter, did you review the letter that was prepared
7 by our offices on the subject of growth inducement?

8 MR. SLATER: Sorry. Mr. Chairman, we're going to
9 object to this exhibit. We were quiet while it was being
10 described. The letter is not testimony. It is argument.
11 It calls for legal conclusions on the ultimate issues that
12 are to be decided by this Board. It is proper as part of a
13 closing brief. This is circumventing the rules. It is
14 hearsay, uncorroborated hearsay, not authenticated.

15 CHAIRMAN BAGGETT: Do you have a response?

16 MR. JOHNSON: I do. First of all, as I understand the
17 rules here that we are dealing with, Mr. Jones is an expert
18 and he is reciting what he has observed personally over the
19 course of an 18-year planning career, dealt with in terms --

20 CHAIRMAN BAGGETT: That is not the objection. The
21 objection is to this exhibit because it is basically, as I
22 read it, an opening brief, which we did not ask for. It is
23 dealing with legal issues before this Board. In retrospect
24 it would have been appropriate to have briefs on growth
25 inducing impact and decided what weight that issue is even

1 given as a separate phase of this, but that is retrospect.

2 MR. OSIAS: Just so I can chime in, I join the
3 objection and would just actually remind the Chair that we
4 requested permission to file a legal brief ahead of time.

5 MR. SLATER: And denied.

6 CHAIRMAN BAGGETT: You were denied. We did not want
7 opening legal briefs.

8 MR. JOHNSON: If I may explain. I misunderstood the
9 question. I thought he was objecting to the exhibit as part
10 of Mr. --

11 CHAIRMAN BAGGETT: He's objecting to this exhibit.

12 MR. JOHNSON: I got it.

13 If I may respond to that. There is legal authority in
14 that letter. If the Chair feels that the legal authority
15 needs to go discarded for purposes of the hearing, that is
16 fine. However, what that letter does do is it submits a
17 series of quotes and admissions from the Water Authority and
18 other entities, for example the biotech, I think, lobby
19 entity, whatever that name is, I don't recall right now.
20 But basically that is evidence pulled from public records,
21 including a verified complaint on file with the court
22 systems about what the water --

23 CHAIRMAN BAGGETT: I understand.

24 MR. SLATER: The best evidence. The letter calls for
25 double hearsay. It is not just single hearsay, it is double

1 hearsay. It is woven in argument. It is in the style of a
2 brief, whether it be an opening statement or a closing
3 brief, and it ought to be reserved for a closing argument.

4 MR. ROSSMANN: Your Honor, can I suggest a way out of
5 this dilemma that will perhaps not embarrass anyone? A lot
6 of what is in this letter is also submitted as part of
7 Audubon 18, which I believe does include the almost
8 virtually same material, but directed properly, I might say,
9 as a comment on the EIR to the lead agencies, EIR/EIS. And
10 so if I can suggest to Mr. Johnson that by withdrawing this
11 Exhibit 4, he won't be at a disadvantage because the same
12 information that you want to convey to the Board has been
13 conveyed through Audubon 18.

14 MR. JOHNSON: That is agreeable.

15 CHAIRMAN BAGGETT: Very good. I would also add some of
16 the information in here is also in your other evidence here,
17 some of the same factual information if you will, absent the
18 legal arguments.

19 So we will withdraw that. Save it. You've got a good
20 start on a closing brief. You can make those legal
21 arguments at that point. I am sure that will be one of the
22 issues to be raised before we are done with this.

23 Now, we can --

24 MR. JOHNSON: Move forward.

25 Thank you, Mr. Chairman.

1 Mr. Jones, with respect to the issue of reallocation of
2 existing water supply, could you comment further on the
3 issue of what MWD would be expected to do with respect to
4 water supply availability in the event that this project is
5 approved?

6 MR. JONES: If I understand your question correctly,
7 what I would expect MWD to do is, since this transfer
8 creates an additional amount of water available through its
9 system for various of its customers, including San Diego
10 County Water Authority to potentially Coachella Valley Water
11 Authority and to other MWD customers, MWD is going to make
12 that water available for its customers which is within the
13 urban expanded portions of Southern California.

14 MR. JOHNSON: I have no further questions of this
15 witness at this time.

16 CHAIRMAN BAGGETT: I'm sure there will be few in
17 cross-examination.

18 MR. JOHNSON: We are looking forward to it.

19 CHAIRMAN BAGGETT: Your next witness.

20 MR. JOHNSON: I would like to move on to Dr. Michel at
21 this time.

22 Dr. Michel, can you give us a brief summary of your
23 academic and professional credentials?

24 DR. MICHEL: Yes. I have completed a Master's in
25 geography at San Diego State University. In that Master's

1 works I specialized in biogeography of Southern California
2 and land use planning. That is in the CV that I submitted.
3 I also from there moved on and completed a Ph.D. in
4 geography at the University of Boulder. And for that Ph.D.
5 I specialized in water resources, geography, urban
6 geography, U.S.-Mexico borderlands and environmental
7 justice.

8 My current research right now is blending the two which
9 numerous academic and practitioners recommend, which is
10 blending water resources management with the practice of
11 land use planning.

12 MR. JOHNSON: How did you come to be involved in these
13 hearings?

14 DR. MICHEL: Kevin Doyle with National Wildlife
15 Federation was aware of the dissertation I just completed on
16 the topic of urban growth and growth inducing impacts in
17 Tijuana, and he asked me to come up and discuss the
18 research.

19 MR. JOHNSON: Did he give you any specific direction as
20 to what he wanted from you --

21 DR. MICHEL: He asked that I focus on what is going on
22 in San Diego County, which is for the most part, part of my
23 research. What I've basically done is pulled chapters from
24 my dissertation and any other research from that point, and
25 submitted that for testimony along with chapters of my

1 dissertations, too.

2 MR. JOHNSON: Let me call your attention to the
3 document which has been submitted as Exhibit 14. This is
4 entitled the testimony of Suzanne M. Michel, Ph.D., Water
5 Resources Geography and Policy, Environmental Policy
6 Analysis. Also your statement of qualifications, the copy
7 of the article entitled The Place of Power and Water
8 Pollution in California. That appears as Exhibit 16. And
9 then also the extracts from the professional journal
10 articles that appear as Exhibit 17.

11 Did you prepare these documents for submission through
12 NWF for these hearings?

13 DR. MICHEL: These are -- the dissertation was for
14 completion of the dissertation and the journal article was
15 the journal article.

16 MR. JOHNSON: Then you copied them and made them
17 available to Mr. Doyle?

18 DR. MICHEL: Yes.

19 MR. JOHNSON: The actual testimony itself was prepared
20 specifically for the hearing; is that right?

21 DR. MICHEL: Yes.

22 MR. JOHNSON: Do you wish to make any changes or
23 additions to the statement of testimony that appears as
24 Exhibit 14 at this time?

25 DR. MICHEL: No.

1 MR. JOHNSON: Do you declare under penalty of perjury
2 that the contents thereof are true and correct to the
3 best of your knowledge?

4 DR. MICHEL: Yes.

5 MR. JOHNSON: If I may ask the same question to Mr.
6 Jones. We got a little bit distracted on that.

7 With respect to the letter that you prepared that
8 appears as Exhibit 3, I believe, in the documentation, do
9 you declare under penalty of perjury to the best of your
10 knowledge the matters stated in there are true and correct?

11 MR. JONES: Yes.

12 MR. JOHNSON: Now, Ms. Michael, you have looked at this
13 issue of whether or not the water that would be coming as
14 part of this project would be considered new water; is that
15 correct?

16 DR. MICHEL: Yes, I did.

17 MR. JOHNSON: What have you concluded?

18 DR. MICHEL: Well, first off, is I do write about in
19 terms of new water this is not new, a new diversion from the
20 Colorado River, which we all agree on that. We are not
21 diverting more water from the Colorado River. But in terms
22 of new water, will this be new water supplies to the
23 region? As I have done and I have referenced in the
24 document, I went through quotes, attended hearings
25 associated with it, and to quote the San Diego County Water

1 Authority at a 1999 presentation, which I signed in my
2 research, that these water transfers are new, long-term
3 reliable water supply.

4 So one of the things I found interesting since I
5 started the research in 1998 is that this has been repeated,
6 repeatedly by local politicians, by the Water Authority, by
7 water districts over and over again. The whole concept that
8 this is not new water just came out this year, which took me
9 by surprise, actually, with the environmental assessment.

10 If you look at San Diego County Water Authority's
11 projections, they have on one of the documents I cite, they
12 have 1997 projections which are approximately 685,000
13 acre-feet to the region and then 215 which is 866 to the
14 region, it does incorporate an increase of water, be it the
15 transfers of further water supplies from Metropolitan Water
16 district.

17 MR. JOHNSON: Now moving along to this issue of growth
18 inducement, do you have an opinion about whether or not this
19 new water, this guaranteed water supply, would be growth
20 inducing?

21 DR. MICHEL: What I do in the research is I clarify
22 what I mean by growth. What I mean by growth is urban
23 expansion. I do not focus so much as population numbers.
24 And if -- I do literature review in the dissertation of
25 scholars that have examined this, and the list is quite

1 long. And basically there is a volume of academic
2 literature which basically says new water, especially
3 imported water, does induce growth and urban expansion.

4 One of the things that I find with the environmental
5 assessment is that it doesn't look at this literature at
6 all. It doesn't look like at the precedence of research.
7 They need to show me how this would not be otherwise, what
8 is so different about this transfer that it would not induce
9 growth, and that has not been proven to me, at least from my
10 review.

11 MR. JOHNSON: Are you aware of any literature on this
12 on the other side of the fence that says, oh, no this is not
13 -- something like this would not be growth inducing?

14 DR. MICHEL: No. I will be honest with you, I have not
15 specifically looked for that literature, either.

16 If you do academic research on this, the well-respected
17 researchers in this particular topic, in geography, in
18 history, in legal scholars from all over the western United
19 States conclude that new, again, especially imported water
20 does induce growth.

21 MR. JOHNSON: Now how would the growth threaten fish
22 and wildlife resources?

23 DR. MICHEL: I need to go to the slides for that,
24 please.

25 CHAIRMAN BAGGETT: I sense an objection.

1 MR. SLATER: Not presubmitted. Surprise testimony.

2 MR. JOHNSON: Mr. Chair, maybe Mr. Doyle can address
3 this issue.

4 MR. DOYLE: It is our understanding that these slides
5 are actually only to help illustrate the points that you are
6 discussing in her testimony, so they are not additional
7 testimony whatsoever. They only help explain the testimony
8 visually.

9 MR. SLATER: If counsel is representing the content of
10 the slides is precisely what is in the written material
11 previously submitted, we are happy to go forward. If it is
12 adding, embellishing, providing new and different testimony
13 that has been previously submitted our objection stands.

14 MR. DOYLE: It does not add to the testimony that is
15 contained in Exhibit No. 13, 14, Suzanne Michel's written
16 testimony.

17 CHAIRMAN BAGGETT: If that is the representation of
18 counsel, we will allow it to go forward. If they are
19 presenting new charts, new graphs, new information, they
20 will be stricken. That is the rules of this Board. They've
21 been that way for many years.

22 Mr. Rossmann.

23 MR. ROSSMANN: Yes, your Honor.

24 This not the first time this has happened in this
25 proceeding where witnesses have brought in visual aids to

1 supplement their testimony. And perhaps in fairness to Mr.
2 Slater the parties could offer to make copies of this
3 available to all of us as soon as possible so that it would
4 be -- so that we would have that.

5 MR. SLATER: Mr. Chair, we are not waiving our
6 objection. We have no idea what is behind this door.

7 MR. ROSSMANN: Maybe we should hear it and see it.

8 CHAIRMAN BAGGETT: That is where --

9 Mr. Osias.

10 MR. OSIAS: I would like to disagree with Mr. Rossmann,
11 sitting next to me. Everyone who's put on Power Point has
12 sent at least the textual context ahead of time, so it is
13 not new. We have one slide up. It is not in the written
14 material. That part is probably stipulated to. It has a
15 heading that I have looked through the 27 pages and not
16 found. Urban Watersheds is an interesting subject area.
17 Maybe I didn't find it, but if somebody could show me where
18 even this subject is in the testimony, that would be useful
19 to this debate about what this slide is about.

20 DR. MICHEL: Chapter 5 of the dissertation discusses
21 urban watersheds.

22 MR. OSIAS: So it is not in the testimony, we'll start
23 with that.

24 CHAIRMAN BAGGETT: Evidence to which she is --

25 MR. JOHNSON: If I understand this correctly, I believe

1 she is saying that as part of the package that was submitted
2 that was backup as authority that is relied upon in the
3 letter that was done.

4 MR. OSIAS: My question still is: Where is it
5 referenced in the testimony, not where is it referenced in
6 the exhibit that the testimony might refer to?

7 CHAIRMAN BAGGETT: I understand.

8 MR. OSIAS: Just a question. I can actually learn
9 something on this subject.

10 MR. JOHNSON: If we could perhaps --

11 MR. OSIAS: It is not a heading, we start with it.

12 MR. DOYLE: I can tell you that those words aren't
13 there on the slide --

14 DR. MICHEL: I can tell you that the word "geography"
15 is in there, the word "sustainability" is in there. The
16 word "urban" is in there and the word "watersheds" is in
17 there. That particular title is not in there, but those
18 words are in there.

19 MR. JOHNSON: Mr. Chair, we don't want to take
20 unnecessary time here. The slides are not essential. We
21 don't think they are going to be harmful. I actually
22 haven't seen them, so I can't represent exactly what is on
23 there. I was just simply telling that these are slides that
24 were prepared --

25 It is important to be frank about this, counsel. So I

1 can't make any direct representation. Mr. Doyle knows more
2 than I do. I would suggest we simply proceed with her. If
3 somebody objects, we can pull them off and not use them and
4 proceed with the text discussion.

5 CHAIRMAN BAGGETT: I assume the objection still stands?

6 MR. SLATER: Objection still stands.

7 CHAIRMAN BAGGETT: Otherwise the challenge will be --
8 first one we throw out. We have to look at each one to
9 determine whether it is, in fact -- we are going to be an
10 hour determining which slides are appropriate.

11 You can see the dilemma here. If it truly is a summary
12 off a page, even then the rules are pretty clear of this
13 Board, that Power Points are traditionally submitted in
14 advance. They always have, to my knowledge. Water quality
15 hearings, it is the same as a water rights hearing. We have
16 disallowed Power Points to more than one attorney.

17 MR. JOHNSON: Mr. Chairman, let me -- let's just move
18 on. We can dispense with the slides.

19 CHAIRMAN BAGGETT: You can bring them back as rebuttal
20 and reintroduce them, make copies and be introduced as
21 evidence on rebuttal if you feel it is necessary. It think
22 that would be -- I hate to create a record that is not
23 accurate as it could be and not challengeable if something
24 -- that nature of the evidence of slides.

25 I would appreciate that. You've got an option to bring

1 it back in rebuttal if you feel it is urgent.

2 Let's continue.

3 MR. JOHNSON: Thank you very much.

4 We had started with the question of how the growth
5 which would be induced by the water supply would harm, would
6 cause unreasonable harm to fish and wildlife.

7 DR. MICHEL: Well, the first thing you have to do
8 before you prove there is unreasonable harm is to talk about
9 sprawl, which I discuss extensively in my testimony. What I
10 did in my research is I compared the rates of sprawl between
11 San Diego and Tijuana. And basically, and I had a picture,
12 I showed a picture of Tijuana sprawl, which is 121.45 square
13 miles for 1,035,415 residents.

14 San Diego expansion was very difficult to estimate.
15 What I did was I went and looked at the sewage service for
16 the metropolitan wastewater department. San Diego's is 450
17 square miles for 2,000,000 residents. San Diego is
18 basically, if you quantify population density, is 8,500
19 persons per square mile. San Diego's 4,444 per square
20 miles. MR. JOHNSON: Can you slow down a little?

21 DR. MICHEL: Sure.

22 San Diego's is 4,444 per square mile. The urban
23 consumption of land in San Diego is two times greater than
24 that of Tijuana. This trend towards low density sprawl will
25 continue, according to the 1999 San Diego Association of

1 Governments, city-county forecast between 1995 and 2020 low
2 density single family housing will increase by 201
3 percent. Multiple family housing will increase by 42
4 percent. So of the available data that I could get it seems
5 like San Diego is definitely sprawling much more rapidly
6 than Tijuana is.

7 Now what I do cite is there are two impacts. And the
8 first impact is that of water quality degradation. And what
9 I wanted to discuss with the slide is show you a picture of
10 aquatic animals that have to live in the water. It is
11 essential for them. And the water quality is essential for
12 their reproductive, biological processes.

13 The second picture I wanted to show you is that kids
14 spend a lot of time in water, and that is essential for the
15 public health. It is very important that there are
16 connections between people, the wildlife and the water
17 quality.

18 The greatest threat to Southern California's water and
19 biological resources is now growing deposition of
20 contaminants from urban expansion in watersheds and urban
21 basins. One main primary probably we have is in sewage
22 infrastructure. The metropolitan wastewater department has
23 2,899 miles of sewer mains. What I did in my interview
24 process is I researched and talked to citizen activists, and
25 they all are citing that basically San Diego has done

1 deferred maintenance. They have not kept up with the
2 infrastructure.

3 What you're seeing from that is you're finding
4 citations from Environmental Protection Agency in terms of
5 the high amount of sewage spills and the neglect has led to
6 beach closures. One of the things the citizen activists
7 asked me was who is going to maintain -- we can't even keep
8 up with sewage infrastructure now. What are we going to do
9 when we add more miles to the sewage infrastructure?

10 The other problem is nonpoint source pollution. I
11 describe that in my testimony, and I think everybody here
12 knows what nonpoint source pollution is. Urban expansion
13 and increasing population growth exacerbates urban polluted
14 runoff in two ways, or nonpoint source pollution.

15 First, increasing populations generate more
16 contaminants. Second, when regions urbanize there is an
17 increase of impervious surface areas. These impervious
18 surfaces do not allow rainwater to be absorbed by vegetation
19 or soils, and hence storm water flows carry pollutants
20 untreated into our rivers.

21 I actually wanted to put on the slide up there a very
22 telling chart of the increase, which is in my document, and
23 right now I'm trying to locate it. On page --

24 MR. JOHNSON: Slow down a little more.

25 DR. MICHEL: Sorry, I have the tendency to talk fast.

1 MR. JOHNSON: We want to cover a lot of ground.

2 DR. MICHEL: On Page 18 of my document I show the
3 increase of urban pollutant runoff in Southern California as
4 done by forecasting models to the Southern California
5 Coastal Water Research Project. Basically, copper, which is
6 lethal to all aquatic animals, in metric tons was 18 tons of
7 copper deposited in our watersheds. By 1995 it was 88 tons,
8 a 389 percent change. So we are seeing increasing amounts
9 of pollutant deposited due to nonpoint source pollution.

10 MR. JOHNSON: The nonpoint source pollution is coming
11 from what?

12 DR. MICHEL: It is coming from urban land use
13 activities, primarily. There is -- you also get nonpoint
14 source pollution from agriculture, but not first, like, the
15 heavy metals that is primarily from urban activity.

16 MR. JOHNSON: Please continue.

17 DR. MICHEL: And the other thing is nonpoint source
18 pollution contains viral and bacterial pathogens from
19 overflowing sewer lines or also the gunk, basically that is
20 what it is called, that is collected in storm drains and
21 that also results in beach closures. Every time you have a
22 storm event in San Diego, the beaches are closed.

23 MR. JOHNSON: What affect does that type of pollution
24 have on fish and related aquatic species, plants species, et
25 cetera?

1 DR. MICHEL: Basically, if you have protected area, as
2 we have in the Multiple Species Conservation program, you
3 can't stop the storm water and pollution entering that
4 protected area. Wildlife, aquatic and land based all need
5 access to clean water for healthy, biological and
6 reproductive systems.

7 One way that we test is there is good water quality,
8 which most of the people at the State Board know, is look at
9 aquatic bugs, what we call macro invertebrates. Certain
10 macro invertebrates are pollution tolerant; certain macro
11 invertebrates are not pollution tolerant. If you have a
12 large amount of diversity when you go in and sample in a
13 stream of nonpollution tolerant bugs, that means you have
14 relatively clean water. If you go in and you have the same,
15 I'm just generalizing now, five species that like pollution,
16 then you know it is polluted.

17 Also particular vegetation species, like the California
18 Sycamore is very sensitive to pollutants. Willows, though,
19 like that, they like pollutants. They gobble it up. So
20 what you will have is a loss of biodiversity in there.

21 The other thing is, too, that water -- I wrote about
22 this in my testimony. Water pollution is an essential not
23 only for wildlife, but for people who coexist. Clean water
24 is essential for not only our survival but also for the
25 quality of life, especially in San Diego. And I had a

1 picture of a closed beach with my little boy who I can't let
2 enter the water because the beaches are closed, and it has
3 become -- it is the number one problem that San Diego
4 citizens state cite now in a survey just a couple weeks ago,
5 number one reason is closed beaches.

6 MR. JOHNSON: What literature is available regarding
7 impacts? I might have asked this before, and this is
8 another follow-up. What is the impact on the wetlands that
9 support the fish populations in the ocean?

10 DR. MICHEL: Well, the impacts to the wetlands, it
11 varies. Along with urban expansion you have higher loads of
12 sedimentation. So what is actually happening with, like,
13 the Tijuana Estuary, which I document in my dissertation,
14 it is filling up. So you're losing wetland habitat because
15 there is a lot of sedimentation coming down. That is one
16 problem.

17 MR. JOHNSON: The sedimentation, where is that coming
18 from? What causes that?

19 DR. MICHEL: What happens is that you have construction
20 areas and they strip the native vegetation, which is very
21 good at holding back the soil. Then it is just going to
22 sediment down and start filling up wetlands and estuaries or
23 alter them. So that is one area.

24 In terms of aquatic species, I'm not an expert on that.
25 Again, I go back to my macro invertebrates studies. That is

1 the basic baseline of what we tell if there is pollution.
2 When you have polluted then your aquatic life goes down by
3 the diversity of it.

4 MR. JOHNSON: Please continue.

5 DR. MICHEL: The other problem associated with urban
6 expansion is loss of habitat. And basically throughout San
7 Diego County open space and agricultural land surrounding
8 cities is being converted for housing and commercial
9 development at a rapid and chaotic pace. What we are seeing
10 is extensive landscapes with ever rising rates of habitat
11 perforation and patchy habitats in the area.

12 I can cite some data from a study done. We also went
13 in and compared what was going on in Tijuana, and actually
14 the number of patches are rapidly increasing with urban
15 sprawl in Tijuana.

16 MR. JOHNSON: What do you mean by patches?

17 DR. MICHEL: Isolated, fragmented habitat. The size of
18 the patches are decreasing. This type of research has not
19 been done for San Diego County at all. We need to have this
20 kind of work to look at the spatial extent of urban
21 expansion and how it goes on to fragment habitat.

22 MR. JOHNSON: Mr. Jones testified that there were these
23 patterns of expanding sort of building, lesser square
24 footage taking up more acreage.

25 Is that consistent with your observations and studies?

1 DR. MICHEL: Right. What you get is another landscape
2 of isolated patches. Habitat perforation creates regions of
3 habitat too small to support many native species. Coyotes
4 do fine. Ravins do fine. Also cats do fine. But many
5 species, especially endangered species such as the
6 California gnatcatcher, which nests in coastal sage scrub,
7 don't do well at all.

8 MR. JOHNSON: What does all this do to the
9 comprehensive habitat planning that they are trying to do in
10 San Diego?

11 DR. MICHEL: As I stated before, with the comprehensive
12 lens I have planning in San Diego it is a good start. We
13 are looking at it from the habitat level. The problem is it
14 is in an urbanizing environment. Air pollution does not
15 respect -- you can't fence out air pollution. You can't
16 fence out water pollution. You can't fence out the cats.
17 As much as they want to try, they'll get through to eat up
18 the native birds. You can't fence out exotic species. You
19 can't fence out exotic insects. And that still is -- if you
20 go --

21 The classic example cited by numerous biologists is the
22 example of the California condor. We had habitat for him,
23 but it still diminished. And what we have now is primarily
24 birds at the zoos and few birds out. It is because of the
25 pollution and the impact of urbanization that is entering

1 into the habitat, and that's not been accounted for in the
2 Multiple Species Conservation Program. It is pretty much
3 recognized by biologists, protected areas only, especially
4 in urban environments, is not going to protect the species.

5 MR. JOHNSON: The land in San Diego County that's been
6 identified as part of the habitat conservation plan being
7 developed, was that all acquired?

8 DR. MICHEL: No.

9 MR. JOHNSON: What is the status of that?

10 DR. MICHEL: Well, in fact, there are a lot of barriers
11 to acquisition. Because in my analysis of the MSCP,
12 basically, the biologists and fish and wildlife have not
13 done a good enough job relating to the local governments and
14 landowners the benefits of habitat preservation.

15 And so there is a lot of resistance to obtaining land
16 because land is expensive also in San Diego County, too.
17 But most of the cities do not want to give up this land
18 because that is also less tax money that is going into the
19 coffers.

20 MR. JOHNSON: The notion of increased water supply,
21 will that create pressure with respect to what happens to
22 that land, as least preliminarily designated for inclusion
23 within the habitat conservation plans?

24 DR. MICHEL: Can you repeat that?

25 MR. JOHNSON: Will increased water supplies have an

1 impact on -- I'm talking about increased guaranteed water
2 supplies -- have an impact upon the success of the HCP
3 program?

4 DR. MICHEL: You know, I'm not qualified to answer that
5 question or not. I wouldn't -- what I can tell you is that
6 increased guaranteed water supply, if you look at the
7 historical documentation of academic literature does foster
8 urban expansion and urban consumption of land.

9 CHAIRMAN BAGGETT: I will give a couple more minutes.

10 MR. JOHNSON: Just wrapping up here, Mr. Chairman.

11 CHAIRMAN BAGGETT: Thank you.

12 MR. JOHNSON: I think what we can do this point, Mr.
13 Chair, is just move into evidence the exhibits that have
14 been submitted with the exception of the --

15 CHAIRMAN BAGGETT: We will do that after, when we are
16 finished with the panel.

17 MR. JOHNSON: Okay.

18 MR. DOYLE: After cross-examination.

19 MR. JOHNSON: Civil trials --

20 CHAIRMAN BAGGETT: Our rules are quite unique, I will
21 admit. Hearsay is very loose, double hearsay maybe, but
22 triple hearsay definitely no.

23 Let's begin with cross. Let's try to get a couple done
24 and see where we are at.

25 Mr. Gilbert.

1 MR. GILBERT: Waive, Mr. Chairman.
2 CHAIRMAN BAGGETT: Mr. Du Bois.
3 MR. DU BOIS: Nothing.
4 CHAIRMAN BAGGETT: Mr. Rodegerdts.
5 MR. RODEGERDTS: Nothing.
6 CHAIRMAN BAGGETT: Mr. Rossmann.
7 MR. ROSSMANN: Nothing, your Honor.
8 CHAIRMAN BAGGETT: Defenders of Wildlife.
9 Mr. Yates, is he still --
10 MR. FECKO: Stepped out.
11 CHAIRMAN BAGGETT: Sierra Club.
12 PCL.
13 Salton Sea is not here.
14 The Tribes are not here.
15 Well, Mr. Slater, gee.
16 ----oOo----
17 CROSS-EXAMINATION OF NATIONAL WILDLIFE FEDERATION
18 BY SAN DIEGO COUNTY WATER AUTHORITY
19 BY MR. SLATER
20 MR. SLATER: Good afternoon, Dr. Michel and Mr.
21 Jones. I would like to start, if I can, with Dr. Michel.
22 Congratulations on your recent Ph.D. It's quite an
23 honor.
24 I would like to, I guess, immediately begin with
25 clarification. In your testimony today you indicated that

1 you've done some considerable study about the relationship
2 between new water and growth, in other words, the ability to
3 induce growth. And you indicated that you considered a
4 number of references, and my question to you, I guess, is:
5 Did any of those references involve water moving through
6 existing facilities?

7 DR. MICHEL: Can I have a minute? I am looking at the
8 authors right now.

9 Yes, Gary Weatherford.

10 MR. SLATER: Which article was that?

11 DR. MICHEL: Give me a minute. I have to look that
12 up.

13 MR. SLATER: Sure.

14 DR. MICHEL: Two articles by Gary Weatherford, and it
15 is in my list of citations. Gary Weatherford, 1990, From
16 Basin to Hydro Commons, Integrated Water Management without
17 Regional Governments, Natural Resources Law Center
18 discussion paper series.

19 MR. SLATER: Okay.

20 DR. MICHEL: Also, 2000, Regionalized Water Management
21 and Involving Hydro Commons.

22 MR. SLATER: Did the Weatherford articles involve a
23 situation where an existing water supply was being
24 reclassified between an existing supplier and existing
25 customer?

1 DR. MICHEL: Basically what Gary Weatherford argues
2 that new water --

3 MR. SLATER: I think it calls for a yes or no.

4 DR. MICHEL: I'm sorry. I'm not familiar with this.
5 Yes.

6 MR. SLATER: And in which supplier and which customer?

7 DR. MICHEL: He talks theoretically.

8 MR. SLATER: Theoretically. So he doesn't have a
9 specific example?

10 DR. MICHEL: No.

11 MR. SLATER: I was very interested in the subject of
12 your dissertation and the hybrid regions known as
13 hydrocommons?

14 DR. MICHEL: Yes.

15 MR. SLATER: The hydrocommons relate to an interbasin
16 or transbasin transfer, correct?

17 DR. MICHEL: Hydro commons relate to water transfers
18 which can be within the basin or beyond the basin.

19 MR. SLATER: Just out of curiosity, it's kind of a new
20 term for me, are there other resources, natural resources or
21 commercial resources, that are shared commons like oil? Do
22 we have oil commons or gas commons or food commons, energy
23 commons, something like that or just hydro?

24 DR. MICHEL: Within the literature there is extensive
25 detail about commons, the actual commons, the tragedy of the

1 commons. And it's -- that is predominantly economic
2 literature. For example, you could call the ocean the
3 commons where you don't pollute into. So -- but in my
4 article I don't refer to that. I refer specifically to
5 hydrocommons.

6 MR. SLATER: In this case you define the hydrocommons
7 as a Colorado River Delta in the San Diego-Tijuana
8 metropolitan region; is that right?

9 DR. MICHEL: No, I don't. Actually, in the
10 dissertation chapter, and I believe it is testimony, I'd
11 have to look at it again, what I do is I map the
12 hydrocommons that supports the San Diego-Tijuana
13 metropolitan region, and there are two. There is one that I
14 call the north-south hydrocommons, which connects the State
15 Water Project down through Los Angeles to San Diego, and the
16 second one is what I call the east-west hydrocommons, which
17 connects the Colorado River via the Colorado River Aqueduct
18 in United States and the aqueduct of Rio Colorado for
19 Tijuana.

20 MR. SLATER: The latter commons, that also include the
21 lower basin states and the cities of Las Vegas, Phoenix, so
22 on?

23 DR. MICHEL: No. I define my hydrocommons as the
24 hydrocommons supports and brings water to the Tijuana and
25 San Diego metropolitan region. That is how I define it.

1 MR. SLATER: And in studying this condition of the
2 hydrocommons, did you have an opportunity to evaluate the
3 IID-San Diego agreement?

4 DR. MICHEL: I had briefly reviewed it when it was in
5 the proceedings in 1998 and '99.

6 MR. SLATER: You had an opportunity to review some
7 literature and review public sentiment about the transfer;
8 is that correct?

9 DR. MICHEL: Yes.

10 MR. SLATER: Didn't you find that some people had some
11 concerns that San Diego was over paying for the water?

12 DR. MICHEL: Yes. That was according to Steve Ury. He
13 is a political scientist at the University of California,
14 San Diego.

15 MR. SLATER: Roughly can you tell us what the concern
16 was with regard to overpayment?

17 DR. MICHEL: I have to look it up, the actual numbers.
18 But basically he compared the payment of water as compared
19 to water that was bought from Central Valley, and it was
20 much more expensive to buy the water from Imperial
21 Irrigation District.

22 MR. SLATER: Can you take a look at Page 7 of your
23 testimony? I believe it is in the footnote there. That
24 will refresh your recollection.

25 DR. MICHEL: Uh-huh.

1 You want me to read the footnote?

2 MR. SLATER: No.

3 Do you have anything else to add?

4 DR. MICHEL: No. That's Steve Ury's research, and that
5 is his primary concern.

6 MR. SLATER: The concern would be that the ratepayers
7 in San Diego County would have to pay about a billion
8 dollars more than he thought was appropriate, correct?

9 DR. MICHEL: Right, according to Steve Ury's research.

10 MR. SLATER: And that this would create an economic
11 impact in San Diego County, correct?

12 DR. MICHEL: I don't recall reading that. I would have
13 to go back and look at the actual article itself again.

14 MR. SLATER: Dr. Michel, is it your testimony that the
15 EIR/EIS presents an incomplete -- the EIR/EIS for the
16 transfer agreement, again I think that is IID Exhibit 55,
17 that it completes or presents an incomplete picture with
18 regard to water transportation and infrastructure?

19 DR. MICHEL: Yes.

20 MR. SLATER: Why is that?

21 DR. MICHEL: One of the things that I relate in my
22 testimony that it does not include the bi-national aqueduct
23 process. And basically since 1998 the San Diego County
24 Water Authority has been working through the Border Water
25 Council to work with Mexico. And actually I will

1 compliment. They've done a very good job in looking into
2 the feasibility of constructing a bi-national aqueduct. I
3 will add getting information from this process has been very
4 difficult since after the first hearings all hearings were
5 closed to the public and the International Boundary and
6 Water Commission hearings are closed to the public. There
7 is a technical feasibility study due to be released. I
8 heard two weeks ago it is still out yet. I think that
9 feasibility study needs to be part of the process since,
10 from what limited sources I could find, this aqueduct is
11 designed to carry IID transfer water.

12 MR. SLATER: Were you aware that my client, the San
13 Diego County Water Authority, and through two witnesses
14 already testified that they have no knowledge of a pipeline
15 project, no location, no route selections, no project
16 participants identified and quantity of the water
17 identified? Does that surprise you?

18 DR. MICHEL: No, it doesn't surprise me because the
19 proceedings have been closed to the public. And I will
20 state that the officials of Mexico and the United States
21 have been very quiet about the process. But the information
22 is available on the International Boundary and Water
23 Commission website dated 3/01, and they actually show the
24 partners in the process there.

25 MR. SLATER: You have no reason to disbelieve the

1 testimony of the general manager of the San Diego County
2 Water Authority that they have no present plan, no pipeline
3 locations identified, no project to pursue?

4 DR. MICHEL: I have reason to disbelieve, yes.

5 MR. SLATER: You do?

6 DR. MICHEL: Yes.

7 MR. SLATER: What is that?

8 DR. MICHEL: Because the officials have been quiet both
9 in the United States and Mexico and not forthcoming on
10 that.

11 MR. SLATER: So it is their silence?

12 DR. MICHEL: Their silence, right. Even though, and I
13 will state this, at the Border Water Institute two weeks ago
14 that I attended, all officials stated that this bi-national
15 aqueduct was coming in and it was a done deal, which really
16 surprised me.

17 MR. SLATER: Are you aware there is an exchange
18 agreement -- Strike that.

19 Are you aware that San Diego and IID amended their
20 petition for change before this Board to limit the transfer
21 to San Diego to 200,000 acre-feet?

22 DR. MICHEL: No, I wasn't aware of that.

23 MR. SLATER: In your reviewing the background documents
24 and preparing your testimony, did you have an opportunity to
25 review the exchange agreement between San Diego and

1 Metropolitan?

2 DR. MICHEL: No, I have not.

3 MR. SLATER: You have no idea what that agreement
4 provides?

5 DR. MICHEL: I do have -- I have reviewed some parts of
6 it in the sense that in terms of we were focusing
7 specifically on the no new water aspect of it. But that's
8 about it.

9 MR. SLATER: Well, how is it, do you know how San Diego
10 receives its water from Metropolitan today?

11 DR. MICHEL: Yes, I do.

12 MR. SLATER: How do they get their water?

13 DR. MICHEL: I actually have a map I would like to show
14 you. It is in my dissertation that shows that. Would you
15 like to see that?

16 MR. SLATER: Sure.

17 DR. MICHEL: And that was included as evidence.

18 MR. SLATER: I am happy to see your map.

19 DR. MICHEL: Basically, I have two maps. The first map
20 is a map that is in Chapter 1 of the dissertation. Is a map
21 of --

22 MR. SLATER: Do you have a page number?

23 DR. MICHEL: Page 4.

24 CHAIRMAN BAGGETT: Exhibit No. 6?

25 MR. JOHNSON: The witness is referring to Exhibit 16.

1 MR. SLATER: Exhibit 16, Page 4, map entitled Major
2 Water Facilities, San Diego-Tijuana Region.

3 DR. MICHEL: It shows the aqueducts right here,
4 bringing water into the Metropolitan, shows all the major
5 aqueducts right here bringing water in, and that is the
6 first map.

7 The second map is in Chapter 5 of the dissertation.
8 You have to give me a minute to locate that.

9 MR. SLATER: I think we can work off of that. That is
10 all right for now. How does -- can you tell us how
11 Metropolitan gets its water from Colorado River?

12 DR. MICHEL: That would have to go to the second map.
13 Can I go to the second map?

14 MR. SLATER: Okay. Let's go.

15 DR. MICHEL: I'm a geographer. We talk about maps.
16 This is the second map, on Page 288.

17 MR. SLATER: Page 288.

18 DR. MICHEL: I also watched that great special,
19 California Gold, where they followed the aqueduct for the
20 Colorado River. That was amazing.

21 MR. SLATER: For the record, the map that is entitled
22 Major Urban Water Conveyance Facilities, Southern California
23 and Baja, California. It shows the pathway of several
24 aqueducts across California.

25 MS. DIFFERDING: Page number?

1 MR. SLATER: Page 288.

2 Again, your answer is Metropolitan receives the water
3 from Colorado River how?

4 DR. MICHEL: It is received through the Colorado River
5 Aqueduct.

6 MR. SLATER: Do you know the capacity of the Colorado
7 River Aqueduct?

8 DR. MICHEL: Yes. I know how many miles it is. I
9 don't know off the top of my head what is the capacity of
10 the aqueduct.

11 MR. SLATER: Do you know whether it is full?

12 DR. MICHEL: At this moment in time, no, I don't know.
13 I know that the plans are to keep the Colorado River
14 Aqueduct full.

15 MR. SLATER: Do you know whether it's ever less than
16 full?

17 DR. MICHEL: Yes, it has been less than full.

18 MR. SLATER: When was that?

19 DR. MICHEL: Obviously when they just completed it, and
20 I know at the time in 1944 it was less than full.

21 MR. SLATER: 1944?

22 DR. MICHEL: I believe. I would have to look that
23 up.

24 MR. SLATER: Less than full. When they were filling it
25 up the first time?

1 DR. MICHEL: Yeah.

2 MR. SLATER: Do you know when that was?

3 DR. MICHEL: No, I don't know when that was. If you
4 want to know that information the citation for that is
5 Littleworth and Garner, California Water, which I don't have
6 with me.

7 MR. SLATER: That's all right. If you don't know that
8 is fine.

9 Now, are you aware that if IID makes water available to
10 San Diego under the transfer agreement that the exchange
11 agreement between Metropolitan and San Diego would require
12 the use of the Colorado River to consummate -- use of the
13 Colorado River Aqueduct consummate an exchange?

14 DR. MICHEL: Can you rephrase that, I didn't quite
15 understand what you were saying?

16 MR. SLATER: Would you read back the question for me?

17 THE COURT REPORTER: Are you serious?

18 MR. SLATER: I'll do it.

19 THE COURT REPORTER: Thank you.

20 MR. SLATER: Why don't I lay a little foundation for
21 you. It is your understanding that Metropolitan receives
22 its water through the Colorado River Aqueduct, correct?

23 DR. MICHEL: Yes.

24 MR. SLATER: And Metropolitan in turn delivers water to
25 San Diego, correct?

1 DR. MICHEL: Yes.

2 MR. SLATER: And the IID/San Diego deal is going to
3 make Colorado River water available to San Diego, correct?

4 DR. MICHEL: What is going to -- I don't know if I can
5 answer that question with a yes or no.

6 MR. SLATER: Try.

7 DR. MICHEL: I can't answer that question.

8 MR. SLATER: Is the water that IID is sending or
9 pledging to San Diego under the transfer agreement, is it
10 from the Colorado River or from the Bay-Delta, is it from
11 Alaska? Where is it from?

12 DR. MICHEL: It is water appropriated that was
13 originally from Imperial Irrigation District which is now
14 going to be sold or leased over, actually, to San Diego.

15 MR. SLATER: The pathway that the water from the
16 Colorado River presently made available to Met is the
17 Colorado River Aqueduct, right?

18 DR. MICHEL: Yes.

19 MR. SLATER: The pathway that the water to be made
20 available to San Diego under the transfer agreement with IID
21 is the Colorado Aqueduct, correct?

22 DR. MICHEL: Yes.

23 MR. SLATER: And there is no present project proposed
24 that you know of to expand the capacity of the Colorado
25 River Aqueduct, correct?

1 DR. MICHEL: The one owned by Metropolitan Water
2 District of Southern California?

3 MR. SLATER: Yes.

4 DR. MICHEL: Yes.

5 MR. SLATER: Yes, there is no plan or, no, there is no
6 plan?

7 DR. MICHEL: There is no plan.

8 MR. SLATER: There is no plan.

9 Are you aware of the term of the exchange agreement
10 between Metropolitan and San Diego?

11 DR. MICHEL: Can you define "term"?

12 MR. SLATER: The length.

13 DR. MICHEL: Yes. It was -- I have to look that up
14 again in my dissertation.

15 MR. SLATER: Would 30 years sound about right?

16 DR. MICHEL: I have to go back to my dissertation and
17 pull those numbers actually out. I know that it was
18 renewable, too. But I need to go back to my dissertation
19 and pull those numbers out.

20 MR. SLATER: I have the agreement. Would that be
21 better, or would you like to look at your notes? Either one.

22 DR. MICHEL: I would like to look at my notes.

23 To transfer 200,000 acre-feet per year for an
24 additional term of 45 years. There is a potential, and this
25 is based off 1999 data. There is a potential to increase

1 the amount of water transfers to a total of 300,000
2 acre-feet and to renew the water transfer option for an
3 additional 30 years.

4 MR. SLATER: I've indicated to you that San Diego and
5 Imperial have revised their petition to ask for an approval
6 of only 200,000, correct?

7 DR. MICHEL: Yes.

8 MR. SLATER: And the 45-year term was related to the
9 transfer agreement or exchange agreement with Metropolitan?

10 DR. MICHEL: Transfer agreement, at least according to
11 my data, San Diego County Water Authority.

12 MR. SLATER: Do you know what the term of the exchange
13 agreement is?

14 DR. MICHEL: Between them and Metropolitan?

15 MR. SLATER: Between Met and San Diego?

16 DR. MICHEL: No, I don't.

17 MR. SLATER: Would 30 years sound about right?

18 DR. MICHEL: I can't say until I look at the document.
19 Approach the witness?

20 CHAIRMAN BAGGETT: Sure.

21 MR. SLATER: Could you look at, I believe it is, Page
22 28 of San Diego Exhibit -- the exchange agreement, San Diego
23 Exhibit 14. Read down, there is an indication of the length
24 of the agreement and whether it may be renewed.

25 DR. MICHEL: Yes.

1 MR. SLATER: What does it say?

2 DR. MICHEL: Says San Diego County Water Authority
3 recognizes that the term of this contract is limited to 30
4 years, but that San Diego County Water Authority does not
5 have a right to the extension or renewal of such a 30-year
6 term and that the transfer agreement calls for a 45-year
7 term.

8 MR. SLATER: I placed a sticky by Page 32.

9 DR. MICHEL: Uh-huh.

10 MR. SLATER: That indicates, does it not, that the San
11 Diego County Water Authority must tender the water that is
12 tendered to it by IID to Metropolitan for transmission
13 through the Colorado River Aqueduct?

14 DR. MICHEL: Yes. Do you want me to read that
15 statement?

16 MR. SLATER: If you agree that is fine.

17 DR. MICHEL: I'm not agreeing. I'm just reading the
18 statement.

19 MR. SLATER: Do you disagree?

20 DR. MICHEL: I can't agree or disagree unless I read
21 the whole contract.

22 MR. SLATER: Running out of time.

23 I think I will use the rest of my time with Mr.
24 Jones.

25 Good afternoon to you, sir.

1 MR. JOHNSON: Good afternoon.

2 MR. SLATER: Now, have you ever testified before the
3 State Water Resources Control Board?

4 MR. JONES: No, sir.

5 MR. SLATER: Ever testified in a court proceeding?

6 MR. JONES: Yes, sir.

7 MR. SLATER: Were you called upon to testify as an
8 expert witness?

9 MR. JONES: I don't believe so, no.

10 MR. SLATER: And were you -- on whose behalf were you
11 testifying?

12 MR. JONES: For one of the jurisdictions that I was
13 employed with.

14 MR. SLATER: Have you ever brought any actions in your
15 own name?

16 MR. JONES: Have I ever brought any actions --

17 MR. SLATER: In your own name.

18 MR. JONES: Could you clarify that?

19 MR. SLATER: Where you were the plaintiff.

20 MR. JONES: In --

21 MR. SLATER: In a civil proceeding?

22 MR. JONES: In an item that's gone to court?

23 MR. SLATER: Yes.

24 MR. JONES: No.

25 MR. SLATER: Now, am I correct, that your testimony

1 today was based on your review of several documents and you
2 listed those in your letter and your general experience as a
3 land use planner?

4 MR. JONES: Yes.

5 MR. SLATER: Those documents are listed in your letter
6 which is National Wildlife Federation Exhibit No. 3, correct?

7 MR. JONES: Correct.

8 MR. SLATER: Mr. Jones, do you live in San Diego
9 County?

10 MR. JONES: Yes, I do.

11 MR. SLATER: Do you work there?

12 MR. JONES: Yes, I do.

13 MR. SLATER: You would concede, wouldn't you, that
14 there are roughly two and a half to 3,000,0000 people who
15 presently live in San Diego County?

16 MR. JONES: Something less than 3,000,000 presently, I
17 believe.

18 MR. SLATER: Some of these people have children, don't
19 they?

20 MR. JONES: Yes. I have one myself.

21 MR. SLATER: That some level of population growth is
22 going to continue whether there is new or expanded water,
23 right?

24 MR. JONES: Yes.

25 MR. SLATER: Are you aware that the San Diego/IID

1 petition for change has been amended to 200,000 acre-feet --

2 MR. JONES: I was not aware.

3 MR. SLATER: -- down from 3-?

4 A man with your experience, background as a land use
5 planner, you are aware that the Authority does not prepare
6 general plans, correct?

7 MR. JONES: The Water Authority?

8 MR. SLATER: San Diego County Water Authority.

9 MR. JONES: I believe that San Diego County Water
10 Authority prepares its own long-range plans for its own
11 systems.

12 MR. SLATER: Not with regard to zoning or land use
13 matters?

14 MR. JONES: Land use matters? Let me observe that San
15 Diego County Water Authority and SANDAG have entered into a
16 partnership basically to make sure that both of their
17 systems, planning and long-range land use planning in San
18 Diego County, are correlated to correspond to each other.

19 MR. SLATER: Okay. Great.

20 Are you speaking about Proposition C, which was the
21 genesis of that?

22 MR. JONES: I am not talking about Proposition C
23 specifically, but rather memorandums of understanding
24 between two agencies.

25 MR. SLATER: Those that were contemplated by SB 901,

1 which is now in Water Code Section 10915, does that sound
2 right?

3 MR. JONES: Sounds right.

4 MR. SLATER: Are you aware that the San Diego County
5 Water Authority by agreement with SANDAG, San Diego
6 Association of Governments, in its capacity as a review
7 board under, pursuant to Water Code Section 10915, is to use
8 the association's most recent regional growth forecast for
9 planning purposes and implement the water element of the
10 strategy?

11 MR. JONES: Would you restate that, please?

12 MR. SLATER: Sure. Actually why don't I show it to
13 you, and then you can tell me whether you are familiar with
14 it.

15 Chair, may I approach the witness?

16 CHAIRMAN BAGGETT: Yes.

17 MR. JONES: I am familiar with this by reference.

18 MR. SLATER: By reference, okay.

19 Mr. Jones, does the Authority provide retail water
20 service?

21 MR. JONES: I don't believe it does. Rather it
22 provides its water out to its member water authority
23 agencies which then provide water directly to users.

24 MR. SLATER: Are you familiar with the term can and
25 will serve letter?

1 MR. JONES: No.

2 MR. SLATER: In your capacity as a land use planner
3 what is the term that you use for a commitment by a retail
4 agency that they're going to provide urban service?

5 MR. JONES: I'm not familiar with any particular term
6 for it, but I am familiar obviously with that.

7 MR. SLATER: You think the Authority issues something
8 like that?

9 MR. JONES: San Diego County Water Authority?

10 MR. SLATER: Yes.

11 MR. JONES: I would estimate that or I would imagine
12 that the local retail water agencies would provide those on
13 a project-by-project basis relating to developments that
14 happen to be within their service area.

15 MR. SLATER: In the case of the Authority its retail
16 agencies would be the cities and districts that provide
17 service within its boundaries, correct?

18 MR. JONES: I'm sorry, say that again.

19 MR. SLATER: With the case of the Authority the retail
20 agency would be the cities and districts that it wholesales
21 water to within its boundaries, correct?

22 MR. JONES: I was referring to the direct delivery
23 water agencies that receive their waters from the San Diego
24 County Water Authority.

25 MR. SLATER: I thought I was speaking of the same

1 thing. For example, the City of San Diego receives its
2 water from the Authority, correct?

3 MR. JONES: Yes. Not the city, per se, but rather the
4 city water department.

5 MR. SLATER: Fair enough. And the City of Carlsbad?

6 MR. JONES: Yes. But I believe the City of Carlsbad is
7 served by a particular water agency separate which is
8 separate and apart from the City of Carlsbad.

9 MR. SLATER: How about the City of Oceanside?

10 MR. JONES: Can't bring to mind specifically whether
11 they are their own water agency or not.

12 MR. SLATER: It is not clear to you?

13 MR. JONES: I'm sorry?

14 MR. SLATER: It is not clear who the specific retail
15 agency is, but in any event the retail agency within the
16 boundaries of the Authority would issue such a letter,
17 correct?

18 MR. JONES: Yes.

19 MR. SLATER: It's your opinion that increasing either
20 availability of water or reliability of water supplies will
21 induce growth, correct?

22 MR. JONES: Correct.

23 MR. SLATER: Let's start with reliability. I want to
24 know what you mean by the word "reliable." What does it
25 mean to you?

1 MR. JONES: To me it means in this context the fact
2 that water flows year to year are expected to be more
3 consistent and more expected planned higher level rather
4 than fluctuating over time.

5 MR. SLATER: It is a constant state, water has to be
6 constantly available?

7 MR. JONES: More constant state.

8 MR. SLATER: More constant than what?

9 MR. JONES: Than if, for example, this agreement were
10 not in place.

11 MR. SLATER: It is a completely relative term? For
12 example --

13 MR. JONES: I don't follow you.

14 MR. SLATER: For example, if I can be sure that a water
15 supply is going to be available to me 90 percent of the
16 time, would you consider that to be reliable?

17 MR. JONES: Again, that is a relative term. I want to
18 observe that the project proponents in this case have
19 described their project as bringing in more reliable water
20 supplies to San Diego County.

21 MR. SLATER: It is your testimony, then, if I had a
22 supply that was 98 percent reliable but I was going to be 99
23 percent reliable that would be growth inducing?

24 MR. JONES: It would be incrementally more growth
25 inducing, yes.

1 MR. SLATER: Were you here earlier in the day to hear
2 the discussion of the history of Owens Lake?

3 MR. JONES: I did not follow that discussion, no.

4 MR. SLATER: Let me give you a couple facts and see
5 where we go.

6 Assume for a second that there was a body of water
7 called Owens Lake, and assume for a second, also, that the
8 City of Los Angeles began diverting water from Owens Lake,
9 and in doing so it dried up a natural lake and turned it
10 into a dust bowl. And then further assume that if it
11 hadn't done anything that a state order or an order from a
12 court would have come into being which would prohibit it
13 from continuing to take water from the area.

14 Following?

15 MR. JONES: I'm making these assumptions?

16 MR. SLATER: Yes.

17 MR. JONES: Yes.

18 MR. SLATER: Now assume, assume that the City of Los
19 Angeles then takes it upon itself to do the right thing and
20 mitigate the impacts, right, to make this claim go away, to
21 make this concern go away. Now a supply which was
22 threatened and unreliable or a water supply that was
23 unreliable is made reliable. Is that growth inducing?

24 MR. JOHNSON: Objection. Mr. Chairman, I am at somewhat of
25 a disadvantage, as is the witness because we weren't here

1 during this testimony. But the objection is that it is an
2 incomplete hypothetical and it assumes facts not in
3 evidence.

4 MR. SLATER: He is an expert. He's entitled to testify
5 about hypotheticals. That is what they do.

6 CHAIRMAN BAGGETT: He stated it is incomplete. Can you
7 rephrase?

8 MR. SLATER: I will be happy to relay the foundation.

9 CHAIRMAN BAGGETT: Relay the facts.

10 MR. SLATER: The facts are: There is a lake. The lake
11 is called Owens Lake. It is a natural body of water.
12 Assume that it holds 300,000 acre-feet of water.

13 Fact two: City of Los Angeles comes to the lake in 1913
14 and diverts the water away to Los Angeles.

15 Fact three: The diversion causes the lake to dry up.

16 Fact four: The fact that the lake has dried up creates
17 a dust storm or dust bowl.

18 Fact five: A regulatory agency considers the
19 situation and says to Los Angeles, we are going to prohibit
20 you from diverting further.

21 First question is: Does that make that supply
22 unreliable?

23 MR. JONES: Make sure I understand your question. Does
24 the agreement not to divert water make that source less
25 reliable? Is that what you are asking?

1 MR. SLATER: I'm saying that if a regulatory agency
2 would tell the City of Los Angeles it could no longer
3 produce water and divert it from the Owens Lake, whether
4 that supply would now be unreliable?

5 MR. JONES: Generally I would agree with that.

6 MR. SLATER: The follow-up question is: The City of
7 Los Angeles does the right thing, cures the defect, right,
8 solves the dust problem. Is its effort to solve the dust
9 problem, clean up the defect, is that growth inducing?

10 MR. JONES: In a way I would want to know in what way
11 is the city curing the defect by solving the dust problem.
12 Does that mean they no longer take the water?

13 MR. SLATER: It spent millions of dollars and used
14 water to suppress the dust. And it can now divert the
15 water again.

16 Is that act to make the water more reliable growth
17 inducing?

18 MR. JONES: Make sure I understand your question. In
19 your -- of course, I'm familiar with the circumstance of the
20 Owens Valley history with the City of Los Angeles. Now you
21 state it as a hypothetical?

22 MR. SLATER: That is correct. Just a hypothetical.

23 MR. JONES: In your hypothetical if this were a source
24 of water that the city did not previously have --

25 MR. SLATER: The city had used it since 1913

1 continuously. Then it lost it, right --

2 MR. JONES: Right.

3 MR. SLATER: And it wants it back.

4 MR. JONES: I must observe that that is a different
5 circumstance than the one we are looking at with this
6 particular proposal.

7 MR. SLATER: That is not an answer to the question.

8 CHAIRMAN BAGGETT: He's asking you to answer the
9 hypothetical.

10 MR. JONES: Possibly I don't understand what you are
11 asking.

12 MR. SLATER: We have 24 more minutes, so we will try
13 again.

14 MR. JONES: Okay.

15 MR. SLATER: There is a body of water. There is
16 300,000 acre-feet in this body of water. Right? City of
17 Los Angeles comes, diverts the water away. After it diverts
18 the water away the lakes dries up. The lake becomes a dust
19 bowl. A regulatory agency intercedes and says you may not
20 take the water anymore. We concluded already that that
21 makes the supply unreliable.

22 Now I'm asking you the next question, which is my
23 effort to do the right thing and clean up the problem by
24 putting water on the dust, right on the ground to suppress
25 the dust, does that action induce growth?

1 MR. JOHNSON: I'm going to object. Without foundation
2 and incomplete hypothetical, I think that question is
3 unanswerable.

4 CHAIRMAN BAGGETT: I would overrule. It's a
5 hypothetical. He's laid all the facts out there. You have
6 an expert witness. If you can't answer, you can so state.

7 MR. JONES: Let me make an effort to be clear on what
8 you're asking. In this hypothetical was the use of that
9 water before by the City of Los Angeles in effect for, in
10 fact, maybe decades. Was it already in use?

11 MR. SLATER: The water was already in use since 1913.

12 MR. JONES: So it's already been applied towards
13 various elements of urban growth and development?

14 MR. SLATER: Yes.

15 MR. JONES: Just to be clear. So now restate the
16 question for me again.

17 MR. SLATER: Does the curing of the defect, which is
18 solving the dust problem, is that, which again makes the
19 supply reliable, is that growth inducing?

20 MR. JONES: Since the water was previously in use and
21 has already been applied to urban growth and development, I
22 would find that not growth inducing.

23 MR. SLATER: So there are some cases in which we make
24 water more reliable and it is not growth inducing?

25 MR. JONES: When it is a newly available source of

1 water, yes.

2 MR. SLATER: So it is not true that making water more
3 reliable induces growth, correct?

4 MR. JONES: It is different from circumstance to
5 circumstance.

6 MR. SLATER: So it is not inherent?

7 MR. JONES: Not with, say, for example within the
8 hypothetical that you provided for me.

9 MR. SLATER: It is not inherent, correct?

10 MR. JONES: Not universally, absolutely.

11 MR. SLATER: You were in San Diego during the critical
12 drought of 1987 to 1992, were you?

13 MR. JONES: Yes.

14 MR. SLATER: In fact, I think you were working at
15 Encinitas, right?

16 MR. JONES: Yes.

17 MR. SLATER: Part of that time?

18 MR. JONES: Yes.

19 MR. SLATER: Were you ever denied ability to get water
20 from your tap during that time?

21 MR. JONES: I know there were in place various -- I'm
22 trying to remember back to that time period here myself,
23 personally. I know there were various voluntary efforts
24 that were requested to be made. I believe there were
25 regulatory measures put into effect that required people to

1 not wash their cars, for example. I generally recall that.

2 MR. SLATER: I appreciate the explanation. But were
3 you able to get water from your tap?

4 MR. JONES: I recall in a lesser amount, yes.

5 MR. SLATER: Did somebody come to your door and put a
6 plug or stopper in your tap?

7 MR. JONES: No. But as I said, there were -- I believe
8 there were regulations in effect that limited the ability,
9 for example, to wash one's car.

10 MR. SLATER: But was there an allocation of any sort
11 for a homeowner?

12 MR. JONES: Not that I am aware of.

13 MR. SLATER: Do you think that the San Diego County
14 Water Authority was ever rationed by Metropolitan?

15 MR. JONES: No, not specifically.

16 MR. SLATER: And do you know whether the drought,
17 during the drought of 1987 to 1992, whether Metropolitan had
18 the ability to participate in the state water bank and
19 purchase water for its member agencies?

20 MR. JONES: I am not specifically aware of that.

21 MR. SLATER: You wouldn't know whether they were able
22 to buy water in the state water bank for 125 bucks an
23 acre-foot?

24 MR. JONES: Not aware of that.

25 MR. SLATER: Are you aware of the new proposed

1 Metropolitan rate structure which would set two tiers for
2 water rates?

3 MR. JONES: I am not directly familiar with that, no.

4 MR. SLATER: And are you aware whether cities within
5 San Diego County have adopted growth management ordinances?

6 MR. JONES: I'm aware from time to time cities,
7 different cities, different jurisdictions in San Diego
8 County have adopted, have amended growth management, what
9 they refer to as growth management.

10 MR. SLATER: It wouldn't surprise you if many cities
11 within San Diego have growth management plans?

12 MR. JONES: I wouldn't characterize it as many. It is
13 probably a minority that some have.

14 MR. SLATER: But some.

15 I would like to go to another one of your statements
16 about growth inducement. We talk about liability, and the
17 second thing you mentioned was that availability could
18 induce growth as well, correct?

19 MR. JONES: Yes.

20 MR. SLATER: In order for something to be available
21 does it have to be under contract to be available?

22 MR. JONES: I don't quite follow your question.

23 MR. SLATER: How -- what does available mean to you?
24 It is your testimony. What did you mean?

25 MR. JONES: In what you are asking there is a broad

1 variety of context. By available in this case referring to
2 water. I would imagine, yes, would be contractual
3 arrangements.

4 MR. SLATER: Do you consider water that Metropolitan
5 has within its source of supplies available to the Authority
6 to purchase?

7 MR. JONES: Generally speaking, yes.

8 MR. SLATER: It is your testimony, isn't it, that there
9 is nothing in the transfer agreement that limits the sources
10 of supply that would be made available to the Authority
11 through Metropolitan, correct?

12 MR. JONES: Say that again.

13 MR. SLATER: There is nothing in the transfer agreement
14 between IID and San Diego that would limit the other sources
15 of Met water that would be made available to San Diego if it
16 wanted it, correct?

17 MR. JONES: Correct.

18 MR. SLATER: Consequently, you draw the conclusion, I
19 believe, that if, irrespective of the limitations on the
20 Colorado River Aqueduct, that San Diego could get more water
21 through Met from other places, correct?

22 MR. JONES: Yes.

23 MR. SLATER: And that availability would somehow induce
24 growth, correct?

25 MR. JONES: That availability, yes, together with all

1 the water sources combined, yes.

2 MR. SLATER: How would San Diego receive delivery of
3 that water, that other water? Assuming now for a second the
4 Colorado River Aqueduct is full to the brim, right? So
5 there is no more water coming through there; the 200,000 is
6 coming through there, right? We have a full aqueduct. San
7 Diego is going to get other water, right? How is the other
8 water going to get to San Diego?

9 MR. JONES: Through either existing for future proposed
10 planned infrastructure, for example, Metropolitan Water
11 district infrastructure.

12 MR. SLATER: So through existing or through future? Do
13 you know?

14 MR. JONES: It could be any combination.

15 MR. SLATER: What about existing? Do you think San
16 Diego could take delivery of more water through existing
17 facilities?

18 MR. JONES: If the capacity is there, I don't see why
19 not.

20 MR. SLATER: Do you think the capacity is there?

21 MR. JONES: I wouldn't without specifically looking
22 into that, at any given moment.

23 MR. SLATER: Don't you think that availability takes
24 into account having the ability to move a source of supply
25 from point A to point B?

1 MR. JONES: In general terms, yes.

2 MR. SLATER: So if I have some supply in Oregon and I
3 want to use it in San Diego, I have to have a way to move
4 it, correct?

5 MR. JONES: Yes.

6 MR. SLATER: If the pipelines are full, right, the
7 pipelines are full, it is not technically available, is it?

8 MR. JONES: At the moment in time, no. However what
9 would prevent there from being proposals, projects, whatever
10 you have to provide additional capacity?

11 MR. SLATER: Is there any proposal that you are aware
12 of in this EIR/EIS for this transfer that proposes expansion
13 of existing pipelines and facilities whereby San Diego could
14 take an increase in its capacity and its ability to take
15 water from Met?

16 MR. JONES: From what I saw that was not described in
17 this EIR.

18 MR. SLATER: Would it surprise you to learn that the
19 San Diego County Water Authority pipelines are presently
20 operating at about 90 percent capacity?

21 MR. JONES: Clarify for me what you mean by San Diego
22 County Water Authority.

23 MR. SLATER: San Diego County Water Authority
24 connections to Metropolitan are presently operating at about
25 90 percent capacity. Did you know that.

1 MR. JONES: I wasn't aware of that specific figure,
2 no.

3 MR. SLATER: So if San Diego can't physically deliver
4 this added water, this other water, not the water from the
5 Colorado River Aqueduct, this other water, if it can't
6 physically take delivery of it, it can't be growth inducing,
7 can it?

8 MR. JONES: What you've described for me is that there
9 is a 10 percent -- current today terms a 10 percent capacity.

10 MR. SLATER: So we are going to slide in 10 percent
11 there, and that is going to fuel the growth; is that what
12 your testimony is?

13 MR. JONES: As you described it, yes,
14 currently. Again, I don't see generally why there couldn't
15 be considered capacity expansion over time.

16 MR. SLATER: I understand your testimony. Thanks.

17 I believe you also -- let me ask another question.

18 You are not of the opinion that San Diego is going to
19 annex some new service territory, are you?

20 MR. JONES: Could you clarify?

21 MR. SLATER: You don't think that there is a proposal
22 presently on the table for San Diego to annex any new lands,
23 do you?

24 MR. JONES: The County of San Diego?

25 MR. SLATER: San Diego County Water Authority.

1 MR. JONES: I am not aware of that. I am not aware
2 that there were any particular limitations on the
3 possibility of San Diego County Water Authority expanding.

4 MR. SLATER: But you're not aware of any present offer
5 or proposal to do that?

6 MR. JONES: Not currently aware of that.

7 MR. SLATER: You also mentioned another project,
8 something called the emergency storage project. Remember
9 that?

10 MR. JONES: Yes.

11 MR. SLATER: Can you describe what that project is,
12 what your understanding of that project is?

13 MR. JONES: Generally my understanding of that project
14 is a project by the San Diego County Water Authority to
15 provide increased water storage capacities in movement of
16 that increased capacity within its -- within the county
17 infrastructure.

18 MR. SLATER: Did you review the EIR for that project?

19 MR. JONES: If I did, it was only cursory.

20 MR. SLATER: Do you know when the project was approved
21 and the EIR was certified?

22 MR. JONES: Relatively recently, but I can't give you a
23 specific date.

24 MR. SLATER: Would 1996 surprise you?

25 MR. JONES: For the not certification of the EIR?

1 MR. SLATER: Yes.

2 MR. JONES: No, not necessarily.

3 MR. SLATER: Do you know when the IID/San Diego deal
4 was struck?

5 MR. JONES: I believe -- that it was entered into?

6 MR. SLATER: Yes.

7 MR. JONES: I believe it's been referred to in the
8 material that I've seen, 1998.

9 MR. SLATER: So that is roughly two years after the
10 emergency storage project EIR was certified, correct?

11 MR. JONES: Correct.

12 MR. SLATER: And it is your impression that the
13 emergency storage project can be made available for anything
14 at all, any water service need?

15 MR. JONES: Yes.

16 MR. SLATER: You don't think there are any limitations
17 on how it is operated?

18 MR. JONES: As represented to me by representatives of
19 San Diego County Water Authority, I understand there are no
20 limitations.

21 MR. SLATER: So you would be surprised to learn that
22 the project must be operated for storage purposes, emergency
23 storage purposes?

24 MR. JONES: Yes, that would surprise me.

25 MR. SLATER: If I told you that that was so, and asked

1 you to assume that the project is limited in how it can be
2 used to providing water in the event of an emergency, would
3 it change your opinion previously expressed about whether
4 the San Diego/IID deal was growth inducing?

5 MR. JONES: Are you offering me a hypothetical?

6 MR. SLATER: I'm offering you a hypothetical.

7 MR. JONES: I would frankly want to sit down and look
8 at the terms of that limitation in order to be sure that, in
9 fact, what I think I am understanding is what I am
10 understanding.

11 MR. SLATER: I am asking you to assume that the
12 project, emergency storage project, is limited to use for
13 emergency. And your testimony was that that could be used
14 in combination with the water that was going to be made
15 available, in spite of the fact we can't get the water,
16 right, we can't get the water physically there, but it was
17 going to be used in some combination, and in that
18 combination the IID deal plus the emergency storage project
19 was going to induce growth. And I am asking you if it
20 really is only an emergency project, does that change your
21 opinion?

22 MR. JONES: Again, I would want to see what you're
23 characterizing as only emergency storage only. But in this
24 hypothetical, if there were iron clad requirements,
25 provisions, in place, that would mean that increased San

1 Diego County Water Authority emergency storage project
2 capacity could never be counted as an allocation towards
3 allowed urban development, I would say that would reduce its
4 inducements on growth, yes.

5 MR. SLATER: Thank you, both.

6 No other questions.

7 CHAIRMAN BAGGETT: Mr. Osias.

8 Let's take a five-minute stretch break.

9 (Break taken.)

10 CHAIRMAN BAGGETT: We are back on the record.

11 Mr. Osias.

12 ----oOo----

13 CROSS-EXAMINATION OF NATIONAL WILDLIFE FEDERATION

14 BY IMPERIAL IRRIGATION DISTRICT

15 BY MR. OSIAS

16 MR. OSIAS: I hate to say this, but good evening. I am
17 David Osias. I represent the Imperial Irrigation District,
18 Dr. Michel, Mr. Jones.

19 You're both here on behalf of the National Wildlife
20 Federation, correct?

21 MR. JONES: Correct.

22 MR. OSIAS: Dr. Michel.

23 DR. MICHEL: I'm not being paid by NWF, but, yes, I
24 am.

25 MR. OSIAS: Thank you.

1 You understand, both of you, that this isn't a hearing
2 to determine the adequacy of the EIR/EIS, correct?

3 MR. JONES: I understand that.

4 MR. OSIAS: Dr. Michel, do you know?

5 DR. MICHEL: Actually, no, I didn't. I thought this
6 was -- of this was to review the EIR/EIS, too.

7 MR. OSIAS: Are both of you aware that the National
8 Wildlife Federation is opposing the petition that's been
9 filed with the State Board? Were you aware of that, Mr.
10 Jones?

11 MR. JONES: Yes.

12 MR. OSIAS: Dr. Michel, you were aware of that?

13 DR. MICHEL: Yes.

14 MR. OSIAS: I take it from your testimony, Mr. Jones,
15 that you believe they're opposing it because it will have an
16 unreasonable impact on fish and wildlife in San Diego,
17 correct?

18 MR. JONES: Yes.

19 MR. OSIAS: Dr. Michel, same reason?

20 DR. MICHEL: Yeah.

21 MR. OSIAS: And you understand that National Wildlife
22 Federation and other environmental groups oppose Imperial
23 Irrigation District becoming more efficient in their water
24 use because that could have an impact on wildlife at the
25 Salton Sea? Did you know that, Mr. Jones?

1 MR. JONES: I'm sorry, could you say that again?

2 MR. OSIAS: Did you know that National Wildlife
3 Federation and other environmental organizations oppose
4 Imperial Irrigation District becoming more efficient in
5 their water use because they allege it will injure fish and
6 wildlife at the Salton Sea?

7 MR. JOHNSON: Object to that as stating facts not in
8 evidence. I am not aware that being the position of NWF.

9 MS. DOUGLAS: I would also like to object.
10 Misstatement of our position.

11 MR. OSIAS: Okay, if that is a misstatement.

12 CHAIRMAN BAGGETT: I would sustain.
13 Could you rephrase your question?

14 MR. OSIAS: Do you know, Mr. Jones, if any
15 environmental agencies are involved in these proceedings?

16 MR. JONES: Involved in these proceedings here today,
17 I'm not aware of that either, no.

18 MR. OSIAS: Do you know if they've taken any positions
19 with respect to the petition before this Board?

20 MR. JONES: I wouldn't be aware of any position taken.

21 MR. OSIAS: As general as in favor of or against, you
22 have no knowledge?

23 MR. JONES: No.

24 MR. OSIAS: How about you, Dr. Michel, do you know?

25 DR. MICHEL: I know. I was here. I watched their

1 testimony earlier.

2 MR. OSIAS: Would you agree, Dr. Michel, that Audubon
3 is concerned that efficiency improvements
4 done on the farms in Imperial could injure fish and
5 wildlife at the Salton Sea?

6 DR. MICHEL: I would have to read their testimony and
7 their documents to be able to make a statement on that.

8 MR. OSIAS: You sat through their entire testimony?

9 MR. JONES: Yes, I did.

10 MR. OSIAS: You listened to it?

11 DR. MICHEL: Yes, I did.

12 MR. OSIAS: And you didn't understand their position?

13 DR. MICHEL: I did understand their position, but part
14 of my responsibility before doing an expert opinion I need
15 to look at the entire source document.

16 MR. OSIAS: Give me your lay opinion.

17 DR. MICHEL: I don't think I'm qualified as a layperson
18 to make that. What I did see was the biologist stating
19 that he was concerned that there might be impacts to
20 particular bird species that use particular fields like the
21 alpha and the grass. So there might be some problems
22 there.

23 MR. OSIAS: Dr. Michel, did you spend 20, 30 pages in
24 your dissertation discussing the Salton Sea and the species
25 and the agriculture drain flows that support the species and

1 the massive bird die-offs and the possibility of a transfer
2 and the reduction of flows?

3 DR. MICHEL: Yes.

4 MR. OSIAS: You know something about it?

5 DR. MICHEL From secondary sources, yes.

6 MR. OSIAS: And you have an expert opinion on it or not?

7 DR. MICHEL: You want my expert opinion on the Salton
8 Sea?

9 MR. OSIAS: No. I asked if you'd have an expert
10 opinion?

11 DR. MICHEL: Yes, I do have an opinion.

12 MR. OSIAS: So you do feel qualified to talk on that
13 subject?

14 DR. MICHEL: No, not solely on the Salton Sea. I do
15 not feel qualified. There are other aspects -- if you
16 incorporate the Colorado River Delta with the Salton Sea,
17 yes, I do feel qualified.

18 MR. OSIAS: Now go back to my original question. Do
19 you know if the Audubon Society filed anything, Dr. Michel,
20 in support of the petition or in opposition to the
21 petition?

22 DR. MICHEL: No, I don't know what the Audubon Society
23 filed.

24 MR. OSIAS: Do you know what the Planning and
25 Conservation League did with respect to this Board in terms

1 of filing in support or opposition?

2 DR. MICHEL: No, I don't know.

3 MR. OSIAS: Same question with respect to Defenders of
4 Wildlife?

5 DR. MICHEL: No, I don't know.

6 MR. OSIAS: You haven't read anything about whether
7 they're in support of the petition or against, correct?

8 DR. MICHEL: No.

9 MR. OSIAS: So you didn't think it was necessary to
10 review any of the things they filed with the Board in
11 getting ready for today?

12 DR. MICHEL: My -- the request was to talk about my
13 research, and that is what I did, I discussed my research
14 specifically focused on the Tijuana-San Diego metropolitan
15 region.

16 MR. OSIAS: So if I summarize that answer, it was, no,
17 you didn't think it was necessary in order for you to
18 testify today for you to read any of the submissions by any
19 of the other environmental groups?

20 DR. MICHEL: I don't agree with your statement that I
21 didn't think it was necessary. I just focused on what I was
22 asked to do on the task.

23 MR. OSIAS: If you thought it was necessary, you would
24 have read them, correct?

25 DR. MICHEL: If I needed to talk about data for the

1 Tijuana-San Diego metropolitan region, yes.

2 MR. OSIAS: So you thought it wasn't necessary?

3 DR. MICHEL: Again, I'm going to go back. It is just
4 on the focus, the focus for the Tijuana-San Diego
5 metropolitan region growth inducing impacts.

6 MR. OSIAS: Have you testified before?

7 DR. MICHEL: No, I have not.

8 MR. OSIAS: So ignoring this proceeding for a moment,
9 Dr. Michel, are you aware that of environmental agencies
10 have expressed concern about species at the Salton Sea?

11 DR. MICHEL: You'll have to specify which environmental
12 agencies.

13 MR. OSIAS: How about National Fish and Wildlife
14 agency?

15 DR. MICHEL: Yes, I am aware National Fish and Wildlife
16 is concerned about the problem with, especially bird
17 mortality events at the Salton Sea.

18 MR. OSIAS: Anyone else that you know?

19 DR. MICHEL: Salton Sea Authority.

20 MR. OSIAS: And you believe they would like to continue
21 to have flows go into the Sea uninterrupted?

22 DR. MICHEL: I think the tissue for them --

23 MR. OSIAS: That was a yes or no question.

24 DR. MICHEL: I can't answer that question.

25 MR. OSIAS: So you don't know whether they want flows

1 to continue into the Sea uninterrupted?

2 DR. MICHEL: No. They show different alternatives for
3 bird habitat restoration.

4 MR. OSIAS: Are you aware that environmental groups,
5 some have expressed concerns about the lack of flow to the
6 Colorado River Delta?

7 DR. MICHEL: Yes, I am aware of those.

8 MR. OSIAS: Do you share those concerns?

9 DR. MICHEL: Yes, I share those concerns.

10 MR. OSIAS: Does National Wildlife Foundation share
11 those concerns?

12 DR. MICHEL: You'll have to ask National Wildlife
13 Federation. I don't speak for them.

14 MR. OSIAS: Do you know if they share those concerns?

15 DR. MICHEL: Yes, actually, during the testimony on the
16 Colorado River Delta I did go ask Kevin Doyle on that, and
17 he said, yes, they do share concerns with the Colorado River
18 Delta.

19 MR. OSIAS: Are you aware that environmental groups are
20 concerned about increasing exports from the California
21 Bay-Delta?

22 DR. MICHEL: Are you talking about the CALFED process?

23 MR. JOHNSON: Excuse me, Mr. Chairman. I'm going to
24 object. I tried to be kind of lenient on this. This is
25 beyond the scope of the direct. It's also overbroad and

1 without foundation.

2 CHAIRMAN BAGGETT: Another rule of our Board, we have
3 no -- our cross can go anywhere as long as it is with the
4 expertise of the panel before them. It's taken me three
5 years to get used to that.

6 MR. OSIAS: As a foundation, I'm only asking what her
7 knowledge is.

8 DR. MICHEL: In terms of -- actually, in terms of the
9 CALFED process I am aware of some of the positions. In
10 fact, I did interview some of the environmental group
11 representatives concerning CALFED, and that is documented in
12 Chapter 5 of my dissertation.

13 MR. OSIAS: Isn't it correct that at least with respect
14 to some environmental agencies or organizations, I should
15 say, within your knowledge, they would like to see more
16 water get to the Colorado River Delta for the species there,
17 they would like to see water continue to flow into the
18 Salton Sea to protect the species there, they would not like
19 to see new or replacement water flow into San Diego in order
20 to protect the species there, they would like to see no
21 further exports from the Bay-Delta in order to protect the
22 species there?

23 DR. MICHEL: Actually I would disagree with that
24 statement. There is actually a lot of disagreement within
25 the environmental community on that. There is disagreement

1 -- there are some proponents that say basically that the
2 Salton Sea should just dry up and go ahead and restore the
3 delta. There are certain advocates for that. There are
4 certain advocates that say the Sea's transfer should go
5 through in order to protect water supplies for the Bay-Delta
6 region.

7 So there is actually a lot of diversity of opinion
8 within the environmental community on this particular
9 topic.

10 MR. OSIAS: If I ask you if you're aware of some
11 thinking this way, your response is that there are some who
12 don't think that way, correct?

13 DR. MICHEL: What I am saying is that there is
14 diversity of opinion in solving it. And I think part of the
15 reason there is such diversity of opinion on this is that --

16 MR. OSIAS: Excuse me.

17 DR. MICHEL: Go ahead.

18 MR. OSIAS: Thank you.

19 The problem you identified with beach closures, I
20 believe, and the impact on species and humans, or the
21 children, involved nitrates?

22 CHAIRMAN BAGGETT: Mutually exclusive.

23 MR. OSIAS: Some children are. I'm just trying to be
24 more specific. I thought it might be helpful.

25 I thought you said there were nitrate flows and

1 phosphorous flows and other nutrients.

2 Did I take notes correctly?

3 DR. MICHEL: I could go back to my testimony and read
4 that, in fact, is what it is. The main problem with beach
5 closures is actually fecal coliform, bacterial overflows.
6 That is the only thing that they measure for. They close
7 the beach if you have a greater than what is exceeded for
8 the allowance of fecal coliform bacteria, then the beach
9 closes.

10 MR. OSIAS: I thought I heard you use the term
11 "nitrates," did you?

12 DR. MICHEL: Nitrates are part of the problem, too.

13 MR. OSIAS: Thank you.

14 Maybe I didn't hear right. Did you mention
15 phosphorous?

16 DR. MICHEL: Yes, phosphorous process is part of the
17 problem, too.

18 MR. OSIAS: Those things flow into the ocean?

19 DR. MICHEL: Rivers, oceans, estuaries, everything.

20 MR. OSIAS: Were you here when witnesses testified
21 that those same things flow into the Salton Sea?

22 DR. MICHEL: No. Actually, no, I was not.

23 MR. OSIAS: Do you have any knowledge if those same
24 things flow into the Salton Sea?

25 DR. MICHEL: I know that agricultural tailings flow

1 into the Salton Sea, and a problem I can definitely tell you
2 is, yes, nitrates do. As far as the other chemicals, I have
3 to go back to Regional Water Quality Control Board documents
4 to look at that.

5 MR. OSIAS: So you don't remember if Mexico sewage
6 flows across the border into the Salton Sea?

7 DR. MICHEL: Actually, yes, Mexico's sewage does flow
8 into the Salton Sea, also.

9 MR. OSIAS: So we have somewhat the same mix flowing
10 into the two water bodies; isn't that right?

11 DR. MICHEL: Actually, I would say it would be
12 different because you've got agricultural tailings that go
13 in or discharges into the Salton Sea. The Alamo River flows
14 to the city of Mexicali and from there you get at times raw
15 sewage discharges. So it is also urban and urban runoff,
16 too.

17 MR. OSIAS: In some ways they are different, but in
18 some ways they are alike.

19 DR. MICHEL: I would say probably the chemical mix,
20 just looking at the land use, would be different. You would
21 have to go down and do chemical tests to understand that
22 better.

23 MR. OSIAS: And you haven't done that, right?

24 DR. MICHEL: I am not a water quality scientist, no.

25 MR. OSIAS: In fact, most of your research that

1 supports your opinion is by, I think you said, observing and
2 listening to others, reading what others have written,
3 probably those two sources; is that right?

4 DR. MICHEL: No. There was more sources. I will read
5 you my methods.

6 MR. OSIAS: Don't read it to me. You're probably able
7 to tell me without reading.

8 DR. MICHEL: Methods, reviewing literature,
9 historically what has gone on in the past.

10 MR. OSIAS: I mentioned reading?

11 DR. MICHEL: No, no. There is a difference between --
12 there are different types of documents. In fact, there is
13 different type of documents that you look at and the method
14 of reading from that is different.

15 The first method is reading the academic literature,
16 what has gone on in the past and historically what has been
17 researched in the past, so that I'm not reinventing the
18 wheel and having the same hypotheses. So that is the first
19 method. You spend two years doing that in a Ph.D. program.

20 MR. OSIAS: I'm sorry, I was actually asking about your
21 dissertation. That has been your testimony?

22 DR. MICHEL: Testimony is based on the dissertation.

23 MR. OSIAS: So that is why you were going to tell me
24 those sources.

25 DR. MICHEL: Yes.

1 MR. OSIAS: Let me simplify. I don't mean to belittle
2 it, but you read things from a variety of stuff, some
3 academic, as you just described, and other things, you
4 didn't limit yourself only to that, and interviews and
5 observation of what other people are doing on the relevant
6 subject. Isn't that the two categories before you get more
7 specific?

8 DR. MICHEL: No. I actually had three to four phases
9 that I detail in my methodology. And I stay with that
10 because it is an observed type of methodology that is
11 recognized within the academic limits called qualitative
12 research message, for the past 50 years.

13 MR. OSIAS: And you presumably report things that you
14 believe are reliable?

15 DR. MICHEL: We have a way of finding out for
16 reliability, and basically it is called triangulation. So
17 if we see it from three specific sources, then we state that
18 this is what is being perceived, what is going on. We also
19 cite the sources.

20 MR. OSIAS: When you cited a source, I believe it was a
21 source, with respect to the price for San Diego/IID water,
22 you got that from three sources or one?

23 DR. MICHEL: No, and I was very specific on that. I
24 basically cited that this was a critic and I was citing his
25 literature on it.

1 MR. OSIAS: That critic was Professor Steven Ury?

2 DR. MICHEL: Steve Ury, yes.

3 MR. OSIAS: Is he a friend of yours?

4 DR. MICHEL: Actually I met him back in 1998 and we
5 have coffee together.

6 MR. OSIAS: I guess I'll have to adjudge.

7 CHAIRMAN BAGGETT: Maybe I could interject some
8 relevancy here, please.

9 MR. OSIAS: If you will just give me a minute, I'll
10 show you why it is relevant.

11 He is the sole source for this information on money?

12 DR. MICHEL: Again, I'm not saying that that is the
13 actual rates, I'm just saying this is his data.

14 MR. OSIAS: So you don't know if he is absolutely wrong?

15 DR. MICHEL: I don't know if he is absolutely wrong.
16 He does have a Ph.D. and has been studying this for a while.
17 So I think he is a credible source, yes.

18 MR. OSIAS: And I take it then you knew that at the
19 time he published that article Metropolitan Water District
20 was opposing this transfer; you knew that, didn't you?

21 DR. MICHEL: Yes, I did.

22 MR. OSIAS: You knew that he had been hired as an
23 expert witness for Metropolitan?

24 DR. MICHEL: He told me he had gone to testify. He
25 didn't tell me he was hired by MWD or not.

1 MR. OSIAS: Knowing that now, he might not be a
2 credible witness?

3 DR. MICHEL: Basically, part of the position of the
4 type of research I do is trying to get the full picture. So
5 one of the problems I have with this research is that much
6 of the literature put out by San Diego County Water
7 Authority in the local newspaper saying that these transfers
8 are not problematic, there are no critics, so that is why I
9 cited Steve's as a credible resource due to his research,
10 that there is many ways to view a particular environmental
11 situation. They are very complex.

12 MR. OSIAS: You looked up how much IID pays for its
13 water, right?

14 DR. MICHEL: Yes.

15 MR. OSIAS: You found it pays \$12.50?

16 DR. MICHEL: I hear \$12.50 and I've also \$15.

17 MR. OSIAS: I asked you if you looked it up, and you
18 said yes?

19 DR. MICHEL: Yes.

20 MR. OSIAS: Where did you look it up?

21 DR. MICHEL: Actually I went to Steve and talked, too.
22 I also looked it up in this article, and I will say I also
23 looked at Bureau of Reclamation documents, too.

24 MR. OSIAS: Which documents?

25 DR. MICHEL: Website.

1 MR. OSIAS: If I told you that that is absolutely
2 wrong, that, in fact, they pay zero, would you be surprised?
3 DR. MICHEL: I'd have to look at the document and the
4 source for that.
5 MR. OSIAS: I said would you be surprised. You don't
6 have to look at a document to tell me if you're surprised.
7 DR. MICHEL: It's an emotional response.
8 MR. OSIAS: Yes.
9 DR. MICHEL: I don't know.
10 MR. OSIAS: The drought that you heard about between --
11 DR. MICHEL: Between 1987 and 1992?
12 MR. OSIAS: Yes. Did the population in San Diego
13 decline between those years?
14 DR. MICHEL: I'd have to look at demographic records.
15 Actually, I can tell you that, but I'd have to look it up in
16 the dissertation to give you those numbers.
17 MR. OSIAS: Do you believe it declined, Mr. Jones?
18 MR. JONES: Overall population in San Diego declined in
19 '87 and '92, no.
20 MR. OSIAS: When you mention growth inducing, Mr.
21 Jones, did you mean population growth?
22 MR. JONES: That is one element, but certainly not the
23 only element of growth from urban development.
24 MR. OSIAS: When you talk about the transfer being
25 gross inducing, are you --

1 MR. JONES: Am I talking exclusively about population
2 increase? No.

3 MR. OSIAS: Is it one of the things you are talking
4 about?

5 MR. JONES: It is one of the elements.

6 MR. OSIAS: Do you believe a drought reduces population
7 growth?

8 MR. JONES: Could you ben more specific?

9 MR. OSIAS: Sure. Population growth happens when
10 births exceed deaths and immigration exceeds emigration,
11 correct?

12 MR. JONES: Generally speaking.

13 MR. OSIAS: Have I left something out?

14 MR. JONES: Not that I can think of.

15 MR. OSIAS: Thank you.

16 Now in San Diego County the contribution to population
17 growth by births far exceeds the contribution by immigration
18 minus emigration, correct?

19 MR. JONES: That's been the current analysis of SANDAG.
20 That is not always the case. Doesn't necessarily happen in
21 every case.

22 MR. OSIAS: Do you think that was the case between '87
23 and '92?

24 MR. JONES: Actually, I'm not aware of it.

25 MR. OSIAS: You don't know?

1 MR. JONES: No.

2 MR. OSIAS: You don't know if births changed because of
3 the drought?

4 MR. JONES: No, I don't know that.

5 MR. OSIAS: Unless it really increased infant mortality
6 you would expect that it did not, correct?

7 MR. JONES: I'm sorry, say that again.

8 MR. OSIAS: Unless the drought caused an increase in
9 infant mortality, you would assume that the drought did not
10 affect the number of births versus deaths?

11 MR. JONES: That is a reasonable assumption.

12 MR. OSIAS: And are you aware that during the drought
13 any buildings were removed because of the drought?

14 MR. JONES: I am not aware of that.

15 MR. OSIAS: So there wasn't a corresponding shrinkage
16 in urban sprawl because of the drought?

17 MR. JONES: I haven't done any specific analysis to
18 that effect. It could be that if a detailed analysis were
19 done it could be found that there was a transient effect on
20 the rate of growth and development.

21 MR. OSIAS: But not negative that you saw, nobody
22 started tearing things down because there was a drought?

23 MR. JONES: Probably take water to tear things down.

24 MR. OSIAS: Is it your opinion, Mr. Jones, that if San
25 Diego has an unreliable water supply fish and wildlife will

1 be benefited?

2 MR. JONES: I believe that there will be indirect
3 incentives for there to be different land use patterns of
4 development that would result in beneficial effects to
5 species and habitats.

6 MR. OSIAS: Now you have to translate for me. I will
7 ask you the question again. We all heard what you said, so
8 choose yes or no.

9 If San Diego has an unreliable water supply do you
10 believe that will be a benefit to fish and wildlife in San
11 Diego?

12 MR. JONES: I think there could be a benefit, yes.

13 MR. OSIAS: Do you believe that is one of the
14 objectives of the National Wildlife Foundation?

15 MR. JONES: You can ask the National Wildlife
16 Federation.

17 MR. OSIAS: I can, but do you know?

18 MR. JONES: I am not aware.

19 MR. OSIAS: Thank you.

20 CHAIRMAN BAGGETT: Thank you.

21 ----oOo----

22 CROSS-EXAMINATION OF NATIONAL WILDLIFE FEDERATION

23 BY THE BOARD

24 CHAIRMAN BAGGETT: I think I will make this just a
25 simple yes or no, too late for long complex numbers. I

1 guess I should ask each of you initially.

2 Are you familiar with San Diego Exhibit 7, which is
3 the Urban Water Management Plan for year 2000, for San Diego
4 County?

5 Simply, are you or aren't you?

6 DR. MICHEL: I am aware of the law that requires the
7 urban water management --

8 CHAIRMAN BAGGETT: I asked you if San Diego has a
9 specific plan, it's 28 pages thick, required by law and they
10 published it in the year 2000.

11 DR. MICHEL: Yes, I am aware of it.

12 CHAIRMAN BAGGETT: You are familiar with the document?

13 MR. JONES: I believe that I reviewed portions of that
14 in preparation for my written submittal.

15 CHAIRMAN BAGGETT: That is the only question.

16 ----oOo----

17 CROSS-EXAMINATION OF NATIONAL WILDLIFE FEDERATION

18 BY STAFF

19 MR. FECKO: Just one question for both of you. When a
20 municipality is preparing its general plan, do they have to
21 prepare environmental documentation as part of that process?

22 MR. JONES: Yes.

23 MR. FECKO: Do you know?

24 DR. MICHEL: Yes -- well, depending on the project.

25 MR. FECKO: Do they have to do the same if they annex

1 any land into, like, a City of San Diego?

2 DR. MICHEL: Yes.

3 MR. JONES: I would say yes.

4 MR. FECKO: That is all I have.

5 Thanks.

6 CHAIRMAN BAGGETT: Any redirect?

7 MR. JOHNSON: Just a couple quick questions. I know we
8 want to conclude.

9 Can I do it from here or do I need to go up to the
10 microphone?

11 CHAIRMAN BAGGETT: You can stay there as long as the
12 reporter can hear you.

13 ---oOo---

14 REDIRECT EXAMINATION OF NATIONAL WILDLIFE FEDERATION

15 BY MR. JOHNSON

16 MR. JOHNSON: Just to follow up on the most recent
17 questions from staff. When EIRs are done in connection with
18 general plan amendments and general plan preparation, do
19 they look specifically at issues of water supply and
20 electricity, for example, in your experience or just simply
21 not get into that?

22 MR. JONES: In my experience it depends on the scope of
23 the specific amendment, for example, that might be
24 considered. There are in some circumstances relatively
25 simple small general plan amendments that may not look at

1 those issues beyond the initial assessment under CEQA.

2 When a city is preparing an entirely new general plan,
3 I would imagine they would be looked at.

4 MR. JOHNSON: How often do cities prepare entirely new
5 general plans?

6 MR. JONES: Some elements of general plans are required
7 by law to be periodically revised. For example, housing
8 element specifically must be looked at, I believe, in terms
9 of once every five years. I am not aware that there are any
10 statutory requirements for other elements to be regularly
11 amended in total.

12 Cities voluntarily take that on for various reasons
13 over time.

14 MR. JOHNSON: So general plans can sit for decades and
15 not be significantly reviewed?

16 MR. JONES: Absolutely.

17 MR. JOHNSON: For both of you this information that the
18 petition had been amended to ask for only 200,000 acre-feet,
19 does that in any way change your opinion that you expressed
20 here today?

21 DR. MICHEL: Again, as I said before, I would have to
22 look at the entire document before I state any opinion.
23 But it is -- given the analysis that we have done, if it is
24 200,000 plus any additional water from the projections that
25 San Diego County Water Authority hopes to approach, if we go

1 by those projections, no, it wouldn't change my opinion.

2 MR. JOHNSON: Mr. Jones.

3 MR. JONES: I would agree with that.

4 MR. JOHNSON: Mr. Jones, in your testimony you talked
5 about how admittedly the amount of water that was coming in
6 from the Colorado for Southern California was not going to
7 increase.

8 You recall that?

9 MR. JONES: That is my understanding, yes.

10 MR. JOHNSON: So with respect to the questions on
11 cross-examination about the capacity of the aqueduct, does
12 that change your analysis at all in terms of availability
13 of water for Southern California and redistribution to
14 perhaps San Diego?

15 MR. JONES: In general terms, no. Obviously, I'd be
16 curious about looking at hypotheticals that would be
17 referred to, information referred to.

18 MR. JOHNSON: Then there was a discussion about lines
19 for the water that is being operated '90 percent capacity.
20 Based on your experience would you normally expect that an
21 agency would be making plans for how they are going to
22 expand their capacity since they're getting so close to
23 being at full capacity?

24 MR. JONES: Yes, I would expect that.

25 DR. MICHEL: Can I comment on that? In terms of the --

1 you can't just focus on the lines. You also have to look at
2 storage capacity, because you can take the water and store
3 it and redistribute it later on. That fact was not -- you
4 just can't solely focus on the actual line capacity. You
5 also have to look at current storage projects and proposed
6 storage projects.

7 There are some proposals out there to expand storage
8 using groundwater basins within the region. I am aware of
9 the City of San Diego and County Water Authority are
10 investigating the Santi El Monte Aquifers, the largest
11 groundwater basin in the region, for storage. So you just
12 can't look at the lines. Especially with groundwater you can
13 transmit the water, store it and then distribute it for
14 later purposes.

15 MR. JOHNSON: Mr. Jones, by the way, in terms of your
16 stated expertise did you say earlier on that somehow you
17 were an expert in the transportation systems for the water
18 for the San Diego County Water Authority?

19 MR. JONES: No, I did not.

20 MR. JOHNSON: Lastly, on issue of growth inducement,
21 there were questions about drought, whether drought affects
22 population.

23 Are either one of you aware of whether SANDAG, the
24 master planning agency for San Diego County, the agency that
25 the Water Authority works with in tandem, has ever looked at

1 the impact on growth if there was not sufficient water to
2 support the growth?

3 MR. OSIAS: Objection. Just to make sure there is not
4 ambiguity. You are talking about population growth in that
5 question? You started it up with a cross question which was
6 about population.

7 MR. JOHNSON: I am talking about population growth.

8 MR. OSIAS: Thank you.

9 MR. JONES: Information which I have reviewed tells me
10 that in performing its population and growth projections
11 that SANDAG simply assumes that all the amount of water
12 required to support every bit of that growth would be
13 available. My understanding is that SANDAG hasn't
14 undertaken any analysis that would look at every restriction
15 on the needed water to support that growth.

16 DR. MICHEL: First off in terms of the whole issue of
17 the drought and population growth, actually San Diego found
18 new water to conserve water during that drought period.
19 They were -- and also there was a significant rainfall
20 period, too, but they were able to adjust. And so -- and
21 that is something that we want to encourage, which is, at
22 least from my perspective, better water use efficiency.

23 In terms of the question with water population, I focus
24 mainly on urban expansion, not on population numbers.

25 MR. JOHNSON: I would revise the question for urban

1 expansion.

2 DR. MICHEL: Can you ask it again?

3 MR. JOHNSON: I think the point's been made.

4 Mr. Chair, that is it for my redirect.

5 CHAIRMAN BAGGETT: Any cross?

6 Mr. Gilbert.

7 MR. GILBERT: No.

8 CHAIRMAN BAGGETT: Mr. Du Bois.

9 Mr. Rodegerdts.

10 MR. RODEGERDTS: No.

11 CHAIRMAN BAGGETT: Mr. Rossmann.

12 MR. ROSSMANN: No.

13 CHAIRMAN BAGGETT: Mr. Fletcher.

14 MR. FLETCHER: I'm sorry, no questions.

15 CHAIRMAN BAGGETT: Ms. Douglas.

16 MS. DOUGLAS: No questions.

17 CHAIRMAN BAGGETT: Mr. Slater.

18 I've got one, too.

19 ----oOo----

20 RE-CROSS-EXAMINATION OF NATIONAL WILDLIFE FEDERATION

21 BY SAN DIEGO COUNTY WATER AUTHORITY

22 BY MR. SLATER

23 MR. SLATER: Doctor, is it your opinion or do you have

24 personal knowledge of whether the San Diego County Water

25 Authority owns any storage facility in San Diego County?

1 DR. MICHEL: I would have to go look at the
2 infrastructure on that.

3 MR. SLATER: Do you think it does?

4 DR. MICHEL: I am not going to say unless I actually
5 look at the documents.

6 MR. SLATER: It was your testimony that based upon
7 storage, but based upon storage, that the constriction or
8 the inability to move water through the available
9 infrastructure wasn't really a limitation, right?

10 DR. MICHEL: Yes, but other --

11 MR. SLATER: What storage are we talking about?

12 DR. MICHEL: Well, I talked about groundwater storage.

13 MR. SLATER: Where would that be?

14 DR. MICHEL: The Santi El Monte groundwater basin
15 underneath the San Diego River.

16 MR. SLATER: Where is the project -- whose project is
17 that?

18 DR. MICHEL: San Diego County Water Authority. They
19 actually conducted a study with the San Diego State
20 professor of geology to look at groundwater storage for
21 storage purposes.

22 MR. SLATER: Was that project part of this
23 environmental impact report for this transfer?

24 DR. MICHEL: No. Which is something that should be
25 looked at, the storage.

1 MR. SLATER: Are you familiar with SB 221, otherwise
2 known as the Kuhl Bill?

3 DR. MICHEL: I am aware of it, I have not read the
4 bill.

5 MR. SLATER: How about you, Mr. Jones?

6 MR. JONES: Yes. I'm aware of it.

7 MR. SLATER: Doesn't the Kuhl Bill, I'm sorry, SB 221
8 which is now Water Code Section 10910 require a water supply
9 determination as a predicate to project approval under
10 CEQA?

11 MR. JONES: I am not aware if it requires it under
12 CEQA. But, yes, it is my understanding it requires a
13 determination of water availability.

14 MR. SLATER: And that is for any qualifying project,
15 correct?

16 MR. JONES: By any qualifying project you mean one as
17 defined by the bill?

18 MR. SLATER: That's correct.

19 MR. JONES: It doesn't necessarily include all
20 development.

21 MR. SLATER: San Diego, pursuant to Water Code Section
22 10915 sub paragraph G, must come up with a plan which
23 includes all of the requirements of SB 221 as made
24 applicable in San Diego County, correct?

25 MR. JONES: Yes. I am aware that SB 221 requires that

1 for, I believe, the finding that you are talking about, that
2 all of the various conditions must apply. One of those, in
3 fact, is that water availability findings be made for
4 individual projects.

5 MR. SLATER: So even if a general plan is stale on the
6 shelf and hasn't even got dust and cobwebs on it, every time
7 that a development that satisfies the criteria of SB 221
8 comes forward there must be a water supply determination,
9 correct?

10 MR. JONES: That is my understanding.

11 MR. SLATER: Thank you.

12 CHAIRMAN BAGGETT: Mr. Osias.

13 MR. OSIAS: No, thank you.

14 CHAIRMAN BAGGETT: I have one question.

15 ---oOo---

16 RE-CROSS-EXAMINATION OF NATIONAL WILDLIFE FEDERATION
17 BY THE BOARD

18 CHAIRMAN BAGGETT: Goes back to, I think, redirect,
19 conservation and also since you are familiar with the Urban
20 Water Management Plan.

21 In the Urban Water Management Plan, and the computer is
22 down, and I don't know -- just assume these facts. Urban
23 water management plan calls over 20 years from I believe
24 2000-2020. Increased amount of water needed will be 145,000
25 acre-feet.

1 Does that sound reasonable?

2 MR. JONES: Sounds approximately.

3 CHAIRMAN BAGGETT: This is whoever wants to answer. If
4 that plan it calls over the 20-year period for 93,000
5 acre-feet of that water, that new demand, to be made up from
6 conserved water in the district, in the area.

7 Does that sound -- I guess, is that a good thing?

8 DR. MICHEL: Conserved water is good.

9 CHAIRMAN BAGGETT: They also in that plan account for
10 40,000 acre-feet of water during that time, as testified
11 earlier, reclaimed water from within increased reclaimed
12 water. You will have to just assume that.

13 MR. JONES: Okay.

14 CHAIRMAN BAGGETT: They also have another 21,000
15 acre-feet in that plan coming from conversion of ag land.
16 There was a lot of testimony and discussion about this early
17 on in this hearing, the first phase. So that total comes up
18 to somewhere around 154,000 acre-feet of new water supply,
19 if you will, within the bounds of that district under their
20 water plan.

21 Does that sound reasonable?

22 MR. JOHNSON: Excuse me, does that mean can they obtain
23 it?

24 CHAIRMAN BAGGETT: That is, if you will, quote, new
25 water, based -- this is assuming the numbers in the 2000

1 Urban Water Management Plan, which is roughly 9,000
2 acre-feet more than the projected demand all coming from
3 sources within the San Diego water management area.

4 MR. JONES: That also presumes, in fact, that each of
5 those measures will be carried out to that full extent.

6 CHAIRMAN BAGGETT: Correct. That is according to the
7 plan.

8 So I guess my question then is -- I guess one question
9 is: Is that growth inducing?

10 DR. MICHEL: Gary Weatherford writes that new water
11 irregardless of its source, yes, can be growth inducing.
12 The issue is what we are addressing is what happens with the
13 connection of water with land use planning agencies. There
14 is no connection between the water resources planning and
15 land use planning.

16 CHAIRMAN BAGGETT: I understand that. I am asking
17 under the definition of what you've been talking about, the
18 water balance, if you will. The projections are 145,000
19 acre-feet, assuming the population growth they projected,
20 154,000 in district water supply being created without
21 import.

22 I just asked if that sounds reasonable. And that is
23 one, and you answered it is. And two, let's assume the 2000
24 -- we're making assumptions here. And the second is: Would
25 that be considered growth inducing? Just trying to

1 understand. That is new water. New water would be
2 considered growth inducing. In the water plan there is also
3 a graph, which we can't pull up now. It shows what I think
4 was already -- the question already asked about the drought
5 of '87 to '91, and there are spikes. If you look at the
6 graph, it has some dramatic spikes between '90 and -- 1990
7 and 2000. It is not a nice, sweet, smooth curve. Of
8 course, with 2000 and 2020 it is a nice, sweet curve, nice
9 straight line going out with the projection of 145,000
10 acre-feet over the next 20 years.

11 Would trying to maintain that line, going back in time,
12 would it be in the best interests of the San Diego area to
13 have a constant line as opposed to a line with lots of peaks
14 and valleys on the graph? Which would be the optimum?

15 DR. MICHEL: I think you are just looking at one little
16 time period when people were forced to adjust quickly.
17 If you plan for it and you're aggressive with your
18 conservation measures, I don't think -- and again it would
19 be studied, but in my opinion it wouldn't be like that.

20 The other thing is conserved water for wildlife, which
21 is what we are dealing is actually wonderful for wildlife.
22 One of the problems --

23 CHAIRMAN BAGGETT: I don't need you to talk about it.
24 I know a fair amount about conserved water. This is what we
25 do, remember.

1 DR. MICHEL: I was speaking in terms of wildlife in San
2 Diego County.

3 CHAIRMAN BAGGETT: Unfortunately I know more about San
4 Diego storm water than I ever thought I would. Only in two
5 lawsuits over it right now as a Board.

6 I guess the question is -- the graph would be useful.
7 Is it desirable to have a line that, I wouldn't say flat,
8 but is a straight line as opposed to a line with peaks and
9 valleys if you are trying to supply water for whatever, fish
10 and wildlife, human population? Is it not more desirable --
11 is it a more reliable, to use your word, Mr. Jones, is that
12 a more reliable situation to have it smooth line?

13 Do you have a graph? Show him the graph.

14 MR. FECKO: Page 22 of Exhibit 7.

15 CHAIRMAN BAGGETT: Figure 22. See the line to the
16 left, ups and downs and peaks and valleys.

17 Would it not be more ideal for people planning growth
18 or nongrowth for that matter sustainability, to use a word
19 that was brought up earlier, to have a smooth line on the
20 left side as opposed to peaks and valleys? In your opinion,
21 professional opinion, would it be -- in an ideal world would
22 you prefer to have peaks and valleys or --

23 MR. JONES: Let me observe that this is a graph of
24 demand and not supply. I will have to observe in the real
25 world with almost anything that you are talking there are

1 always, in anything you are talking about, there is almost
2 always real peaks and valleys of some kind. For example,
3 the stock market.

4 CHAIRMAN BAGGETT: We're looing at close to a hundred
5 thousand acre-feet from one year to the next.

6 DR. MICHEL: Let me comment on this. Nature is never
7 steady. Economists like things to be steady. Hydrological
8 cycle is never and especially in an arid environment is
9 never steady.

10 CHAIRMAN BAGGETT: I understand.

11 DR. MICHEL: At least from my perspective, we try to
12 work with nature instead of trying to transport nature to
13 fit a particular graph.

14 CHAIRMAN BAGGETT: I'm trying to understand your
15 definition of growth inducing versus reliability. And I am
16 trying to have you help me explain, if you could explain to
17 me, on the right side of that line we have determined that
18 it appears -- we've determined that they're going to come up
19 with water to meet that curve. That will be growth inducing
20 even if it is new water created by conservation or
21 reclamation and agriculture conversion. So we have growth
22 that is happening.

23 I am asking in the past would it not have been also
24 ideal to have a more -- would that be growth inducing if you
25 were trying to create -- keep a line at a constant rate

1 instead of peaks and valleys. Trying to keep -- I am trying
2 to understand what your difference is between reliability
3 and growth inducing. I'm really having a problem here. If
4 you're trying to just maintain a straight, even reliable
5 source would be my word. I'm asking if you agree with that
6 definition. Is that growth inducing in and of itself?
7 We've determined new water clearly is in your definition.

8 MR. JONES: This is a graph of demand and source or
9 supply. I believe on the --

10 CHAIRMAN BAGGETT: Right. I think you would argue that
11 it would probably track it since there was a drought in '92,
12 let's make that assumption. Some of the reason demand is
13 there is because there wasn't anything to pull.

14 MR. JONES: Exactly. And that reflects reaction to the
15 fact there was a drought. The temporary incremental
16 decrease in that demand. Obviously right after that period
17 of time the rate climbed back up again.

18 DR. MICHEL: There have been documented cases, for
19 example, south of Denver where there wasn't water, and the
20 county planning supervisor said no new developments.

21 CHAIRMAN BAGGETT: Happens regularly.

22 DR. MICHEL: Exactly.

23 CHAIRMAN BAGGETT: That is the only question I
24 have.

25 Anybody else have anything?

1 If not, do you want to enter your exhibits into
2 evidence, with the exclusion of, I believe, No. 2?

3 MR. OSIAS: Mr. Chairman, I would object at least to
4 No. 1 being labeled testimony since that person didn't show.
5 I wouldn't want the record to reflect his testimony since we
6 didn't have a chance to cross.

7 We should treat it either as a letter or as a policy
8 statement or some other document.

9 CHAIRMAN BAGGETT: Talking about 1 and 4?

10 MR. OSIAS: Yes.

11 MR. SLATER: We join in that.

12 CHAIRMAN BAGGETT: Does that make sense to counsel.
13 One the witness wasn't here, so it won't be.

14 MR. JOHNSON: Yes.

15 CHAIRMAN BAGGETT: And four was the one we discussed,
16 you can use as Audubon 18.

17 MR. SLATER: Four is withdrawn until offered in
18 rebuttal.

19 CHAIRMAN BAGGETT: Right.

20 MR. ROSSMANN: Your Honor, the suggestion that 1 just
21 be named statement rather than testimony.

22 I have no objection if it is the policy statement of
23 the Center for Biological Diversity. We've gotten those
24 things before. We don't cross-examine those.

25 MR. JOHNSON: That is agreeable.

1 CHAIRMAN BAGGETT: So 1 will be a statement, a policy
2 statement; 4 will be withdrawn and all the others shall be
3 admitted into evidence.

4 MR. DOYLE: And 2 is withdrawn because that is a
5 statement of qualifications for that witness that didn't
6 show.

7 CHAIRMAN BAGGETT: For the witness that isn't here; 2
8 is withdrawn.

9 MS. DIFFERDING: Three treated as testimony.

10 CHAIRMAN BAGGETT: So entered with those stipulations.

11 Thank you very much for going for a long day. We are
12 going to start at 1:15, 1:15, 1:30. We should probably be
13 ready at 1:15. Anything you want locked up can go in there
14 for the night if you don't want to drag your boxes with
15 you. Tomorrow we will do the County of Imperial,
16 hopefully all of the County of Imperial.

17 We are recessed until tomorrow.

18 (Hearing adjourned at 6:20 p.m.)

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1 REPORTER'S CERTIFICATE

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STATE OF CALIFORNIA)
) ss.
COUNTY OF SACRAMENTO)

I, ESTHER F. SCHWARTZ, certify that I was the official Court Reporter for the proceedings named herein, and that as such reporter, I reported in verbatim shorthand writing those proceedings;

That I thereafter caused my shorthand writing to be reduced to typewriting, and the pages numbered 1750 through 2073 herein constitute a complete, true and correct record of the proceedings.

IN WITNESS WHEREOF, I have subscribed this certificate at Sacramento, California, on this 7th day of June 2002.

ESTHER F. SCHWARTZ
CSR NO. 1564

