

NATIONAL MARINE FISHERIES SERVICE  
GREEN STURGEON PUBLIC SCOPING WORKSHOP

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Wednesday, May 31, 2006

Stanford Room, Federal Building  
650 Capitol Mall  
Sacramento, California 95814

9:00 A.M.

REPORTED BY: SANDRA L. HOPPER, CSR No. 7110

1 MS. NEUMAN: Welcome, everyone. We're getting a  
2 little bit of a late start, but I think everyone who we are  
3 expecting is here. And we may have some late stragglers  
4 coming in.

5 My name is Melissa Neuman. I work for the National  
6 Marine Fisheries Service in Long Beach, California. Susan  
7 Wang is at the back of the room, and she started working with  
8 NMFS just a couple of months ago as a contract employee, and  
9 you've seen her name on a number of communications. She's  
10 been helping out with organizing these workshops and will be  
11 helping NMFS in establishing our 4(d) rule and basically  
12 working on the steps that lead up to establishing our  
13 ESA 4(d) rule. For those of you who don't know what an  
14 ESA 4(d) rule is, that's one of the points of this workshop  
15 is to explain sort of the mechanics of the 4(d) rule, the  
16 process, really, involved in establishing a 4(d) rule for  
17 threatened species under the Endangered Species Act.

18 Just a couple of things that you need to know. I  
19 already mentioned the bathrooms, where they are located and  
20 the codes you need to enter to get to the bathrooms. Please  
21 feel free to leave the room at any time if you need to.  
22 There is some ice water in the back of the room, also some  
23 sodas that are on ice, some ice tea. If we run out of sodas  
24 back here, if you go around the corner, there's a little  
25 kitchen; we have more sodas in the fridge. Feel free to help

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1     yourself to a drink at any point during the workshop today.  
2     If you are dying for a second cup of coffee, you may also  
3     leave the room during -- or -- and we're going to have  
4     multiple breaks, as you can see; they're built into the  
5     agenda. But if you need one, on the second floor of this  
6     building there is a cafeteria where they sell coffee, but  
7     there's also a coffee kiosk where I believe you can get a cup  
8     of coffee there very quickly and come on back down.

9             The format for the workshop today is -- first of  
10    all, for those of you who don't know, we contacted particular  
11    people, particular agencies and solicited people for  
12    presenting information at our workshop today and tomorrow.  
13    Today our focus is recreational fishing. We wanted to  
14    involve anybody who is interested in recreational fisheries  
15    in California to -- and, really, in Washington and Oregon,  
16    although, I don't think any of those folks made it down here  
17    for the meeting -- to participate in today's workshops. And  
18    then tomorrow's workshop will focus on water resource issues.  
19    And so we have another group coming in tomorrow.

20            The first part of today's workshop will be  
21    presentations first by me and then by those of you who  
22    offered to give a presentation. And then the afternoon  
23    session will really be an open discussion where we're going  
24    to be focusing in on five questions. I'm going to present  
25    those questions in my presentation, but they're questions

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1 that if we can address all five of those by the end of  
2 today's workshop, I think we'll all feel that we've  
3 accomplished something very significant. So I won't give  
4 away what these questions are at this point, but basically  
5 the goal here is to identify activities that are going on in  
6 the region that may affect the Southern Distinct Population  
7 Segment of green sturgeon, to try to figure out whether those  
8 activities that are affecting green sturgeon might be  
9 modified in some way to provide some conservation  
10 possibilities to green sturgeon, or maybe these activities  
11 will have no affect at all on green sturgeon, and basically  
12 to come up with a list of ideas of how we can identify those  
13 activities that may be detrimental to green sturgeon, perhaps  
14 modify those activities in some way, identify activities that  
15 already provide some kind of conservation advantage to green  
16 sturgeon. And that will really be the goal of the workshop,  
17 to generate this list. And we'll take this list back to our  
18 home office and use it when we begin formulating our 4(d)  
19 rule for green sturgeon.

20 Are there any other logistical questions at this  
21 point about how today will work? Oh, one thing I do want to  
22 mention: Sandy is our court reporter. She's going to be  
23 recording everything that's said. If you have a question  
24 during the question-and-answer period after presentations  
25 this morning or this afternoon, as we open it up and have

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1 more open discussion, she would like you to please state your  
2 name before you make a comment. I know we all have name tags  
3 on. If you'd like to fill out your name tag and put it on  
4 the table in front of you, you may. But please state your  
5 name before you say something, and that way Sandy can get it  
6 on the record and we'll make sure we don't miss your comment.  
7 We don't want to do that. We want to know who said what, and  
8 that way if we need to contact you at a later point, we can.

9 Okay. I also wanted to mention some of our other  
10 NMFS folks who aren't here who, I'm sure, would be happy to  
11 help out in any way with logistics and also with -- will be a  
12 part of our discussion this afternoon. Jeff McLain is in the  
13 back in the blue shirt, and he works right here in  
14 Sacramento. This is his home office. And many of you  
15 probably worked with him before. He is our local green  
16 sturgeon expert. Russ Strack (phonetic) is our relatively  
17 new Protective Resources Division Assistant Regional  
18 Administrator.

19 Right?

20 MR. STRACK: Good enough.

21 MS. NEUMAN: And he works here in Sacramento as  
22 well. And Diane Windham is sitting next to Russ. She is the  
23 Recovery Coordinator --

24 Regional Recovery Coordinator?

25 MS. WINDHAM: Yes, (unintelligible).



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1 MS. NEUMAN: Okay. And she's located here in  
2 Sacramento. And then Bruce --  
3 Oppenheim?

4 MR. OPPENHEIM: "Oppenheim."

5 MS. NEUMAN: I'm sorry, I've never met Bruce  
6 (unintelligible), also. He's also in the Sacramento office.  
7 And I think those are all of the NMFS folks here today.

8 And we'll, obviously -- by the end of the day, all  
9 of you will be able to introduce yourselves to the rest of  
10 the group. Okay?

11 So I'll kick off the workshop with a little bit of  
12 information about green sturgeon biology and then get into  
13 the process that NMFS operates under when not only listing a  
14 species under the Endangered Species Act, but basically what  
15 comes next. I'll give you a little bit of background on the  
16 listing process, but really I'm going to talk about next  
17 steps and really focus in on what an ESA Section 4(d) rule  
18 is.

19 First of all, for those of you who need some  
20 background about the Endangered Species Act, it was enacted  
21 in 1973. It's administered by the U.S. Fish & Wildlife  
22 Service and by the National Marine Fisheries Service  
23 depending on the species. Its purpose is to identify  
24 threatened and endangered species throughout -- woops, did I  
25 go forward again? Sorry -- to identify threatened and

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1 endangered species and then to conserve and protect those  
2 species and the ecosystems upon which they depend.

3           And the Act offers a couple of ways to conserve and  
4 protect our threatened and endangered species. One way is to  
5 prohibit take of those species by statute or rule making, and  
6 also we require that federal agencies not jeopardize  
7 threatened or endangered species or adversely modify their  
8 habitat. So these are ways that the Endangered Species Act  
9 serves to conserve and protect endangered and threatened  
10 species.

11           The term "endangered species" is used to describe a  
12 species that is in danger of extinction throughout all or a  
13 significant portion of its range. You'll see this acronym  
14 "SPOIR" used to represent that phrase "Significant Portion Of  
15 Its Range." And it's an important phrase when it comes to  
16 green sturgeon and the listing for green sturgeon, and I'll  
17 get to that in just a little bit.

18           Threatened species are those species that are  
19 likely to become endangered within the foreseeable future  
20 throughout all or a significant portion of its range.

21           And then we also have another category called the  
22 Species of Concern Category. And I mention it because it's  
23 particularly relevant to green sturgeon. And I'll get to  
24 that in just a few minutes as well. But species of concern  
25 are those species that we feel there are concerns regarding

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1 their status and we feel that there are concerns regarding  
2 the threats that those species face, but we don't have enough  
3 information at this point to list them. And we really don't  
4 have any regulatory control or power over species of concern,  
5 but we try in our Biological Opinions that we issue to offer  
6 protection to species of concern whenever we can -- to  
7 suggest it, at least, to a federal agency that would be  
8 hearing about an activity that could affect a species of  
9 concern.

10 This depiction shows how the listing process works.  
11 And you'll see here on -- I hope you can see this,  
12 actually -- this time line on the bottom of this slide. And  
13 we are under a regulatory time line when it comes to listing  
14 species. In the case of green sturgeon, we were petitioned  
15 to list the entire species throughout its entire range. NMFS  
16 reviewed that petition. In 90 days, we were required to make  
17 something called a 90-day finding, where at that point we had  
18 to state whether or not we felt that that petition had merit.  
19 Our 90-day finding indicated that the petition to list the  
20 North American green sturgeon did have merit. And at that  
21 point, NMFS had one year to issue a proposed rule. In that  
22 one-year time, we formed a Biological Review Team; it was  
23 made up of people from NMFS as well as the USGS. And these  
24 people got together and issued a Status Review for the  
25 species. They brought together all of the technical

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1 information that they could and published it in the form of a  
2 Status Review. That first Status Review was issued in the  
3 year 2000.

4 As a result of that first Status Review, NMFS  
5 decided not to list the North American green sturgeon.  
6 However, we were sued on that finding, and the court remanded  
7 that decision back to us and said that we did not determine  
8 whether or not green sturgeon was endangered throughout a  
9 significant portion of its range. We considered -- you'll  
10 remember those definitions of endangered and threatened  
11 species. We considered all of the range for the threatened  
12 and endangered status, but not a significant portion of its  
13 range for the endangered or threatened status.

14 So we went back to the drawing board, reconstituted  
15 our Biological Review Team. They updated the Status Review.  
16 That updated Status Review was published in 2005 -- issued in  
17 2005. And we issued a new proposed rule that found that the  
18 Southern Distinct Population Segment of the Northern American  
19 green sturgeon warranted a threatened designation under the  
20 Endangered Species Act. And I'll get to the reasoning behind  
21 creating a Distinct Population Segment in just a moment. And  
22 we found that the Northern Distinct Population Segment of  
23 green sturgeon did not warrant a listing at this time, but we  
24 suggested that it remain on our Species of Concern list.

25 So at that point, the proposed rule underwent a



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1 public comment period and peer review, and we came out with  
2 the final listing to list the Southern Distinct Population  
3 Segment of green sturgeon as threatened and to keep the  
4 Northern Distinct Population of green sturgeon on our Species  
5 of Concern list in April of this year. And that listing for  
6 the Southern DPS would become effective in July.

7 I've kind of skipped over the listing  
8 decision-making process, but I'll get into that in just a few  
9 minutes. We considered a bunch of information when -- very  
10 sensitive mouse -- determining that we should list the  
11 Southern Distinct Population Segment.

12 Now I'll launch into some of the biological  
13 reasoning behind our listing determination and really get  
14 into some of the biological aspects of the North American  
15 green sturgeon.

16 We relied very heavily on some of the folks at  
17 UC Davis. Josh Israel and Bernie May got to work in -- I  
18 guess it was 2000, Josh, correct, on trying to figure out  
19 what the genetic population structure of the North American  
20 green sturgeon was. And in this particular dendrogram, he  
21 and Bernie are depicting the degree of genetic similarity  
22 between samples that were collected among seven different  
23 systems: The Rogue and Umpqua Rivers in Oregon; the Klamath  
24 River in northern California; San Pablo Bay, the Sacramento  
25 River, and then the Columbia River estuary. And as you'll

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1 see here, this branch of the -- oh, you can't see the laser  
2 very well. Okay. This branch of the tree right here grouped  
3 together in similarity were samples from the Rogue, Umpqua,  
4 and Klamath being most similar to one another, and this  
5 bottom clump shows San Pablo Bay and the Sacramento fish  
6 clumping together. Then with the Columbia River samples  
7 actually being more similar to the San Pablo Bay and  
8 Sacramento River samples than to the Rogue, Umpqua, and  
9 Klamath River samples. And this is kind of interesting.

10           And Josh is here today and is going to be  
11 presenting more information about the genetic population  
12 structure of the species. But based on these genetic  
13 results, we -- I'm sorry, you can't see this very well, but  
14 I'll try and point out the major features -- we determined  
15 that there were two Distinct Population Segments of green  
16 sturgeon. This right here is the Eel River, and we  
17 determined that anything south of the Eel River, including  
18 the Sacramento River, the Delta, all of the bays associated  
19 with the Sacramento and San Joaquin -- as well as the  
20 San Joaquin River -- which I'm not going to use the laser  
21 because you guys can't see it -- were all part of the  
22 Southern Distinct Population Segment. And from -- the Eel  
23 River north constituted the Northern Distinct Population  
24 Segment.

25           We also collected as much information as we could

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1 about the biology of the species. This information is  
2 included in our Status Review, but we've also learned a lot  
3 more about the species since that time. We know that at  
4 least in the Sacramento system adults are migrating into  
5 rivers from about -- I believe it's March through July with a  
6 peak in May through June. And the success of spawning varies  
7 quite a lot depending on the year. It varies with the --  
8 basically temperature, flow rates -- those are probably the  
9 two most important things.

10 The adults are moving up river. The eggs are  
11 spawned amid rocky bottom. There's no pelagic dispersal  
12 stage of the larvae. And based on laboratory experiments  
13 conducted at UC Davis, we know that temperatures much above  
14 20C are lethal to the larvae.

15 Juveniles will spend anywhere from one to four  
16 years in the freshwater system. They start moving  
17 downstream, but, again, that time period that juveniles are  
18 spending in brackish water is somewhat variable. And they  
19 leave the system when they're about one to two and a half  
20 feet in length. They move out into the coastal areas. They  
21 probably don't move much beyond the 100 meter bathymetric  
22 mark; we know that from some tagging studies that Steve  
23 Lindley and Mary Bosier of our laboratories in the Northwest  
24 and in Santa Cruz have been doing. So they stay fairly close  
25 to shore. And they spend most of their lives maturing in the

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1 ocean. They mature -- I think the females at about 13 years  
2 of age, and the males at about 9 years of age. And they're  
3 spending that time, again, in coastal areas, making brief  
4 movements into estuaries in the summer and fall presumably to  
5 feed, although we're not quite certain what is governing that  
6 aggregative behavior.

7           Here's a summary of that biological information  
8 with a few more details. We know that spawning is occurring  
9 in three specific river systems: The Sacramento, the  
10 Klamath, and the Rogue. We know that spawning habitat  
11 requirements vary from year to year. And what governs  
12 successful spawning in any given year is a bit uncertain at  
13 this point. We know that low flow rates and high water  
14 temperatures affect recruitment for success. I mentioned the  
15 residency time of juveniles in freshwater. We know that  
16 adults are limited by -- in a couple of ways, mostly related  
17 to habitat modification. We know that passage can affect  
18 spawning success if adults cannot pass upstream to  
19 spawning -- good spawning habitat, spawning success might be  
20 compromised in some way, and recruitment success might be  
21 compromised for the larvae and juveniles that result. One of  
22 the limiting pieces of information for green sturgeon is  
23 right now we have no direct estimates of abundance, and this  
24 is a really important gap for -- you know, in our  
25 understanding of the species.



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1                   This is a series of tables that Jeff McLain put  
2 together from a Biological Opinion that he's currently  
3 working on. And what it shows you is the timing of  
4 occurrence of green sturgeon in each of these locations by  
5 life stage. And the shading on these boxes indicates the  
6 relative -- it's a measure of relative abundance of that  
7 particular life stage in that particular location. The  
8 darker gray is an indication of higher relative abundance,  
9 and this light gray right here is an indication of lower  
10 relative abundance. The comparisons are only valid for --  
11 within a life stage.

12                   So here for the top table we see here, this focuses  
13 in on adults that are greater than 13 years of age for  
14 females, greater than 9 years of age for males. And here in  
15 the Upper Sacramento River, you'll see again they're coming  
16 into the system or being detected in the system in March and  
17 are detected through July with a peak occurring April through  
18 June.

19                   In the San Francisco Bay estuary, we see moderate  
20 levels of abundance from April all the way through October.  
21 We're probably detecting these adults as they're coming into  
22 the system and then as they're moving out of the system after  
23 they've spawned.

24                   With respect to larvae and post-larvae, less than  
25 ten months of age, we have two locations where we've

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1 collected this particular life stage. I shouldn't say "we  
2 have." We have harnessed data from these particular areas.  
3 The data were actually collected by other entities. At the  
4 Red Bluff Diversion Dam in the Sacramento River, we have  
5 larvae occurring from June through August with a peak in June  
6 and July. And at the Glenn-Colusa Irrigation District in the  
7 Sacramento River, we have occurrences from May through  
8 October with, again, a peak from June through July.

9 For juveniles, you'll see here that the locations  
10 span from the South Delta through Suisun Bay, and basically  
11 they're in the system year round, the juveniles.

12 And out along the coast, we have indications of  
13 occurrence from January through May and then again in  
14 November. This lack of occurrence from June through October,  
15 I'm not sure whether that is representative of no sampling  
16 occurring during that time or simply the fact that most of  
17 the adults are in freshwater during that point of the year --  
18 or many of those adults are probably in freshwater spawning.

19 What we were trying to do for our listing  
20 determination and what we're trying to do in establishing our  
21 ESA Section 4(d) rule for Southern DPS of green sturgeon is  
22 identify the threats to the species in primarily the  
23 Sacramento and the Feather Rivers. The Sacramento River is  
24 the only river that the Southern DPS is known to spawn in.  
25 And we know that green sturgeon enter the Feather River,

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1 although we have no indication that they're actually spawning  
2 in the Feather River. And so we focused our threat  
3 assessment on these two systems.

4           And I'd like to point out just a couple of things  
5 about this table. First of all, over here all the way on the  
6 right-hand side, you'll see here listing factors numbered 1  
7 through 5, and I'll briefly mention what those are. The  
8 first factor is modification, curtailment, or alteration of  
9 the habitat. The second listing factor is over-utilization  
10 either because of fishing, research, any kind of human  
11 over-utilization of the species. The third factor is disease  
12 and predation. The fourth factor is inadequate regulatory  
13 mechanisms. And the fifth factor is basically other, you  
14 know, eugenic influences. And you'll see here that most of  
15 the threats we identified in the Sacramento and Feather  
16 Rivers fall under this first category involving modification,  
17 curtailment, or alteration of habitat: Impassable barriers,  
18 adult migration barriers, insufficient flow, increased  
19 temperatures, and water diversion. We feel that those are  
20 probably the most serious threats to the Southern Distinct  
21 Population of green sturgeon.

22           You'll see here that local fishing is on our list,  
23 and that falls under listing factor No. 2, over-utilization,  
24 but we don't feel at this point that compared to alterations  
25 in the habitat and changes that have been made to habitat

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1 that local fishing is as much of a threat as those threats  
2 that are currently operating with respect to habitat  
3 alteration.

4           We're also very concerned about lost spawning  
5 habitat, and it was one of the reasons why we listed the  
6 Southern Distinct Population of green sturgeon. This is a  
7 map of the Central Valley. It was taken from a publication  
8 of Steve Lindley's in 2004. This was a Habitat Analysis that  
9 Steve conducted for chinook salmon in the Central Valley.  
10 And all of these red dots -- again, I know it's hard to read  
11 which of these systems it is, but I'll just point out that  
12 there is a line here of red dots, and these are all barriers  
13 to adult passage, either they're -- they're mostly dams that  
14 exist along these river systems. And in Steve's Habitat  
15 Assessment, he indicated that a large part of the habitat to  
16 the right of these red dots was lost for chinook. We don't  
17 have a Habitat Assessment for the Southern Distinct  
18 Population of green sturgeon. We're working on it. But in  
19 the meantime, there's enough overlap, we felt, between green  
20 sturgeon and chinook salmon in terms of spawning habitat  
21 requirements that we used this as a surrogate in the absence  
22 of data for green sturgeon at the moment. So we felt that at  
23 least some portion of this habitat to the right of all of  
24 those red dots was probably spawning habitat for green  
25 sturgeon in the past prior to the construction of these



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1 barriers. And at this point, that habitat has been lost. We  
2 have not quantified the amount of habitat that's lost. We're  
3 hoping that with the assessment we're currently carrying out  
4 that we'll be able to actually quantify the amount of habitat  
5 that's been lost.

6           And then finally we have one source of  
7 fishery-independent data. I think I mentioned that we have a  
8 huge gap in our -- in our understanding of how many green  
9 sturgeon there actually are out there. We have no direct  
10 estimate but did our best. But the best we do have at this  
11 point is some fishery-independent data from the state and  
12 federal salvage facilities in the Delta. There are many  
13 caveats for these data sets. And in our latest iteration of  
14 interpreting these data, what we have said is just one thing:  
15 If you look at the absolute numbers of green sturgeon that  
16 were captured at these facilities in past decades at the  
17 state facility in the sixties and seventies, which indicates  
18 this time frame right in here, versus the eighties, nineties,  
19 and two-thousands, there were more captured in the sixties  
20 and seventies than there were in the eighties and nineties.  
21 And the same trend exists for the federal facility, except  
22 this time span is truncated a bit. Data were collected here  
23 from 1982 until 2000. There are many caveats associated with  
24 this data, but it's the only source of fishery-independent  
25 data that we have, and it isn't indicating anything that

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1       seemed positive to us. It's certainly not an upward trend.

2               And so we -- when we assessed extinction risk for  
3       the Southern Distinct Population Segment, finally what we've  
4       determined was that there's only one spawning population;  
5       there was lost spawning habitat above dams, although we  
6       didn't know how much. The threats to the habitat alterations  
  
7       remain, and we don't believe that those threats are being  
8       alleviated substantially. And our best source of  
9       fishery-independent data exhibits a negative trend.

10              We also considered many of the protective efforts  
11       that are either currently underway or are being planned for  
12       the future in California. We know that there are new fishing  
13       regulations in place. In fact, there's currently an  
14       emergency rule in place and a zero bag limit on green  
15       sturgeon in the state of California. We know that fishing  
16       regulations in Washington and Oregon are also protecting --  
17       we believe protecting the Northern DPS of green sturgeon in  
18       those states. And we've considered many of these other  
19       programs that have definitely added to either our knowledge  
20       base for green sturgeon or have provided some kind of  
21       conservation measure for green sturgeon. And we balanced  
22       these things against what we felt was the extinction risk,  
23       and in the end decided that we would list the Southern  
24       Distinct Population as threatened, which is, again, likely to  
25       become endangered in the foreseeable future throughout all or

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1 a significant portion of its range.

2 So the next step for threatened species, the next  
3 steps -- and now we'll get into the process a little bit more  
4 and what's behind some of the biological information for  
5 threatened species. We have some flexibility in what types  
6 of prohibitions we would like to invoke for threatened  
7 species.

8 Under Section 9 of the Endangered Species Act, we  
9 have a list of prohibitions that automatically are put in  
10 place for endangered species. But, again, we have  
11 flexibility for threatened species. And through something  
12 called an ESA Section 4(d) rule, we can decide which of those  
13 Section 9 prohibitions we're going to invoke. And basically  
14 that's what this workshop is all about, getting information  
15 from you that will help from our 4(d) rule: Which activities  
16 are really hitting the Southern DPS of green sturgeon hard,  
17 which ones are not, which ones are providing the conservation  
18 possibility for the species. And so we'll consider all of  
19 that as we write our 4(d) rule for green sturgeon.

20 We also need to decide on critical habitat  
21 designation. And we are actually under a regulatory time  
22 line for critical habitat designation. We're supposed to be  
23 coming out with a ruling for critical habitat by next year --  
24 at this time next year.

25 For the 4(d) rule, we actually are not under any

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1 regulatory restraint. We feel that the 4(d) process may take  
2 anywhere from a year and a half to two years to actually  
3 complete. So we're looking at a fairly long time frame for  
4 taking the information we gather here today, the information  
5 we gather tomorrow, and perhaps information we gather at  
6 future workshops on how this 4(d) rule is really going to  
7 work. But for critical habitat, that's something we need to  
8 move on.

9 Then what comes next, recovery planning for green  
10 sturgeon and updating our Status Review in five years' time.  
11 But let's focus in on the 4(d) rule.

12 I just wanted to mention all of the Section 9  
13 prohibitions and again point out that we may invoke these  
14 Section 9 prohibitions for green sturgeon or we may not. The  
15 first prohibition is basically inhibiting import or export of  
16 green sturgeon -- the Southern DPS of green sturgeon, anyway,  
17 within the United States. We prohibit take within the U.S.  
18 or the territorial seas of the U.S. We prohibit take upon  
19 the high seas. We may prohibit the possession, selling,  
20 delivering, carrying, transport, or shipping of the  
21 threatened green sturgeon taken in violation of (B) and (C).  
22 We may prohibit the delivery, receiving, carrying,  
23 transporting, or shipping in interstate or foreign commerce.  
24 We may prohibit the selling or offering for sale of the  
25 threatened species in interstate or foreign commerce. And we



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1 may look for the violation of any regulation pertaining to  
2 threatened species pursuant to our Section 4(d) rule.

3 "Take" is defined as harassing, harming, pursuing,  
4 hunting, shooting, killing, trapping, capturing, or  
5 collecting of the threatened species without specific NMFS  
6 authorization. It basically involves anything that you might  
7 do with a threatened species that involves touching it.  
8 Anything other than just looking at it is pretty much take.

9 Now, if we do invoke our Section 9 take  
10 prohibitions or some of them for green sturgeon, we may also  
11 invoke exemptions to those prohibitions. It can be a little  
12 confusing at this point. So as you might have guessed, that  
13 first list of Section 9 take prohibitions is very broad.  
14 We're talking about very broad categories. Aside from  
15 selling in commerce or basically moving green sturgeon around  
16 across state lines, take is the other main prohibition. And  
17 as I said, take involves anything other than just looking.  
18 And this is a very broad category. And we recognize that  
19 there may be activity that's going on that involves doing  
20 something more than just looking at a green sturgeon that are  
21 either helpful to them, that may have no impact on them. And  
22 so it's important that we try to identify those activities  
23 that are helping in some way, that are having no affect, and  
24 that we try and streamline our regulatory process just a  
25 little bit, if we can, through our 4(d) rule and invoke some

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1 exemptions here, basically.

2           The 4(d) rule, it's all about streamlining our  
3 process. We're trying to identify those activities up front  
4 that we feel are not going to have a negative impact on the  
5 species or basically compromise the conservation movements of  
6 the species, identify those up front and allow those  
7 activities to continue to go forward without having to go  
8 through our permitting process. I mean that's really the  
9 bottom line. Now -- and that's what the 4(d) Program can  
10 accomplish.

11           And Qinqin is here. She's not going to be speaking  
12 today, but we have handouts in the back of the room that talk  
13 about the 4(d) Program that was established between the state  
14 and NMFS. It focuses in on salmon --

15           MS. LIU: Research only.

16           MS. NEUMAN: Research only. And she has a handout  
17 at the back of the room if you'd like to pick that up. And  
18 that explains how this 4(d) Research Program works for  
19 salmon. We are contemplating the idea of rolling the green  
20 sturgeon into that program, also. So this is one kind of  
21 4(d) Program that's already in place for our listed salmon --  
22 for threatened salmon, and it may allow certain research  
23 activities to move forward without having to go through --

24           Oops. This is so sensitive. Be careful, speakers,  
25 when you come up here.

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1           -- without going through our permitting process,  
2           which is the other way that you can get permission from NMFS  
3           to carry out an activity that may involve take of green  
4           sturgeon. And, you know, some of you may have been through  
5           our Section 10 Permitting Process already for our listed  
6           salmon. It can be a long, drawn-out process. It can take a  
7           long time. Or maybe -- you know, maybe it isn't. It is more  
8           work for the applicant, and it's certainly more work for  
9           NMFS.

10           So here's a little flow chart that shows you how  
11           the 4(d) rule process works. And I'll point out where we are  
12           now.

13           The first thing we need to do is write something  
14           called an Environmental Assessment. This is something that's  
15           required by NMFS under the National Environmental Policy Act.  
16           In our Environmental Assessment -- and it's really Susan  
17           who's taking the lead on the Environmental Assessment -- we  
18           are identifying different alternative actions, basically, a  
19           different way of implementing our 4(d) rule. That's what  
20           those alternative actions are, different approaches we might  
21           take to the 4(d) rule. So, for example, one alternative may  
22           be to invoke all of those sections on take prohibitions.  
23           Another alternative may be to invoke none of them. Another  
24           alternative may be to invoke some of them with allowing some  
25           activities to move forward.

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1           And so this Environmental Assessment really is all  
2 about doing planning. It's the planning and the hard work  
3 behind developing the 4(d) rule. And in thinking about this,  
4 we hope that we come out of these workshops with a better  
5 understanding of what our preferred alternative is going to  
6 be, and we identify that in our Environmental Assessment,  
7 which is the option that we really think is the best option.  
8 And then it goes through a series of reviews internally and  
9 works its way up the NMFS chain. And if that Environmental  
10 Assessment becomes approved and there's a finding of no  
11 significant impact -- this is a FONSI, "Finding Of No  
12 Significant Impact" -- regarding our preferred alternative,  
13 that Environmental Assessment is issued, and we can then  
14 approve and finalize that Environmental Assessment and move  
15 on to developing the Draft 4(d) Rule.

16           Right now here we are at our Scoping Workshop  
17 stage, and we're using this information that we're collecting  
18 here to inform the Environmental Assessment and really to  
19 again help us decide what our preferred alternatives are for  
20 what our 4(d) rule is going to be. And it will also,  
21 obviously, feed into establishing the 4(d) rule itself.

22           Once we draft a 4(d) rule and establish what  
23 prohibitions we'll invoke, that 4(d) rule is published in  
24 our -- the Federal Register. It's subject to public comment,  
25 and then we finalize the 4(d) rule at some point afterwards.



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1 I believe the public comment period is something like 60  
2 days, maybe 90 days. I'm not sure. But, again, you'll  
3 notice there's no regulatory time restriction here. So we  
4 really can -- we want to get this out soon. But in thinking  
5 about what's involved, we don't think it's going to be before  
6 about a year and a half to two years.

7 I think I already mentioned the purpose of our  
8 workshop today. But in wrapping this up here, I'll mention  
9 again, we're here today to have open discussions -- well,  
10 first of all, have specific people present information to  
11 you, but then to open this up to discussions and really  
12 trying to figure out which activities are going on that  
13 should be restricted, which activities are good for the  
14 species, and specifically because you all may be involved in  
15 recreational fishery, to talk about how those -- how the  
16 current guidelines are good, are bad, what might change about  
17 recreational fishing for sturgeon in California that could  
18 help preserve the species, or is everything fine the way it  
19 is. So we'll talk about that.

20 And we have five goals. Again, I've already really  
21 mentioned these, but I'll go through them quickly. We would  
22 like to get a list of activities and programs that directly  
23 or indirectly affect the Southern DPS of green sturgeon. If  
24 you mention an activity that affects green sturgeon here  
25 today, it may not necessarily be regulated. Okay? I recall

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1 I just wanted to point that out, that just because you tell  
2 us about it, it doesn't mean we're not going to let you do  
3 it. I think it's better to be open and honest about what's  
4 going on here so we can make good decisions.

5 We'll evaluate the potential affects -- or what  
6 we'd like is your help in evaluating the potential affects  
7 that these activities and programs we identify may have on  
8 green sturgeon. We certainly would like to identify those  
9 activities that contribute to the conservation of the species  
10 and then perhaps generate a list of ways that we can modify  
11 activities so that we can help the green sturgeon and still  
12 allow that activity to move forward so that the green  
13 sturgeon are happy and the green sturgeon users are happy,  
14 too.

15 And then here our final goal is to evaluate  
16 potential affects of conservation activities on green  
17 sturgeon, other species, other resource users and managers.  
18 It's really, you know, the final element that brings  
19 everything together.

20 And so these are the five focus questions that  
21 we're going to be zeroing in on during our afternoon  
22 discussions. I'm going to have this image projected on the  
23 screen during our discussion so we can remind ourselves what  
24 the goal of this workshop is. And it's basically just taking  
25 those five goals and putting them into question format, and

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1 we'll go through them.

2 We have some ground rules for our discussion this  
3 afternoon to hopefully keep things moving along smoothly.

4 Oh, look. I didn't do that on purpose.

5 No debating. We are interested in what you have to  
6 say. We want this to be an open discussion, but if you're  
7 going to argue, we'd rather have you submit that argument in  
8 written format to us at our office or email it to us. Let's  
9 try and keep our conversations moving and have it be more  
10 productive and not as much griping. Everyone is encouraged  
11 to participate. All participants are equal. We'd like one  
12 person to talk at a time. Please identify yourself before  
13 you speak. There are no right or wrong answers. Every idea  
14 and comment is valid. If it doesn't fit into the -- if some  
15 comment that you have doesn't fit into our five focus  
16 questions, we're still going to write it down. We'll put it  
17 over in a little parking lot and set up another easel for  
18 other ideas. If you have a comment that is pertaining to  
19 primarily critical habitat, for example, and you would like  
20 to share that with us here at this forum, even though we're  
21 talking about the 4(d) rule, that's fine; we'll put it over  
22 in our parking lot of ideas. Try to keep the comments  
23 concise because we do have our court reporter here. And if  
24 we do break-out sessions this afternoon -- I think it's still  
25 up in the air whether we're going to break out or just stay

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1 together as one group, but we're going to have somebody  
2 recording what's being said. So just try and speak  
3 concisely. We'll have the focus questions projected up here.  
4 And please just silence your cell phones while we're gathered  
5 together in this room. We're going to have lots of breaks,  
6 and you'll be able to check for your messages. Okay?

7           And as we move forward with our decision-making,  
8 we're going to try and post everything on our web site. For  
9 those of you who have been to our web site, it really stinks.  
10 We are reorganizing it. And so I am not sure -- there might  
11 be down periods, but we're really trying to get it to be more  
12 user friendly. Right now, for those of you who have visited  
13 the web site, you know there's two columns and you have to  
14 scroll down and you have to guess where the green sturgeon  
15 might be in one of those columns in order to find  
16 information. But we have a team of people down in Long Beach  
17 and I think among our area offices who are reorganizing our  
18 web site. But you can always contact me as well. I think  
19 you all know my email address. If you don't, I'm happy to  
20 give it to you.

21           Okay. And, Susan, do we have any time for just  
22 questions or comments before Josh takes the podium?

23           MS. WANG: We have a few minutes, and then we need  
24 a break.

25           MS. NEUMAN: Oh, okay, and then we'll have a short



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1 break. So...

2 Yes.

3 MR. HOLT: Buford Holt, Reclamation.

4 I'm curious as to why insufficient flows are being  
5 listed as something affecting the larvae. It said there in  
6 July and August. And one of the effects of the -- result of  
7 the larvae (unintelligible) flip the (inaudible) that we have  
8 elevated flows (unintelligible). So how could the flows be  
9 insufficient? I mean it's just not -- it's not clear,  
10 whatever. Take it out of that clause.

11 MS. NEUMAN: That's actually a pretty good point.  
12 I think that list -- are you talking about the list that we  
13 generated for the Sacramento and the Feather Rivers --

14 MR. HOLT: Right.

15 MS. NEUMAN: -- specifically?

16 Yeah, Jeff, do you want to take that?

17 MR. McLAIN: I think that kind of stems from the  
18 work that Fish & Game did where they --

19 Jeff McLain. I'm sorry.

20 -- where they determined that reductions in flow  
21 resulted in reduced (unintelligible) success of  
22 (unintelligible). And that was the result of the hearings in  
23 the early nineties. So there's some Fish & Game publications  
24 that relate to that. I think that's one of the main factors.  
25 It's more associated with (unintelligible) drainage.

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1 MR. HOLT: And flow into the Delta.

2 MR. McLAIN: Correct. Yeah. It had to do with the  
3 outflow standards in the '95 Water Quality Control --

4 THE REPORTER: Could I ask you all to please speak  
5 toward me a little bit. I'd really appreciate it. And speak  
6 up. Thank you.

7 MR. HOLT: Just if I could (unintelligible)  
8 attention, it isn't clear why that would be true here.

9 MS. NEUMAN: Do you have any information at the  
10 Bureau that suggests otherwise, that flow rates, you know, at  
11 least in the last decade have been steady and high enough so  
12 that green sturgeon should be sustained and the larvae? Do  
13 you think it should be sustained?

14 MR. HOLT: I'm not knowledgeable enough about the  
15 green sturgeon to say if we do or not. I'll talk with you  
16 later about it.

17 MS. NEUMAN: Okay.

18 Yes.

19 MR. WARD: Melissa, this is Paul Ward. I'm a field  
20 biologist from Fish & Game that works up in the Central  
21 Valley there. And do you have a plan for expediting 4(d)  
22 permitting for ongoing research projects? And the reason I  
23 ask that, we have one that is in place today that is  
24 assessing both adult green sturgeon and larvae green  
25 sturgeon, and we would like to continue that. Now, part of

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1 it would be under Fish & Game, but part of it would be either  
2 under a Bureau contractor or a private consultant that we  
3 could cover. But have you given thought to how that might --  
4 how we might extend that, or are we going to be out of the  
5 water here come July 1, or is there some -- some ability to  
6 continue with this?

7 MS. NEUMAN: There should be an ability to continue  
8 that work. Is the work -- now, you said that the work right  
9 now is approved by NMFS through an existing 4(d) Program?

10 MR. WARD: No, not for green sturgeon.

11 MS. NEUMAN: No. So is the work moving forward  
12 because of a biological opinion that --

13 MR. WARD: Yes.

14 MS. NEUMAN: Okay. It's probably true that the  
15 Bureau -- I'm sorry, did you say the Bureau of Reclamation?

16 MR. WARD: Well, the Bureau of -- this is GCID.  
17 It's the evaluation of the fish screen --

18 MS. NEUMAN: I think that they have already  
19 re-initiated consultation with us. And while re-initiation  
20 is going on, it's my understanding that the activity can  
21 continue as long as re-initiation of the work has -- has  
22 happened, and I believe it has at this point.

23 MR. HOLT: Yeah.

24 MS. NEUMAN: You may continue to do your work.

25 And, I guess, you know, it's impossible for us to say in the

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1 final end what that biological -- in the final analysis, what  
2 that biological opinion will say. But it's likely that if  
3 that opinion, which probably focused on listed salmonids, if  
4 the project was allowed to move forward for -- given salmon  
5 concerns, it will probably be allowed to move forward even  
6 with the listing of green sturgeon. And I'm not sure of  
7 that. I'm not going to be the biologist working on that  
8 Biological Opinion. In fact, I'm not sure who at NMFS will  
9 be working on that Biological Opinion. And I'm not sure what  
10 the time frame is. It's probably about -- oh, gosh, if  
11 you -- if you re-initiated consultation with us at this  
12 point -- what is it, 100 --

13 MR. McLAIN: 135 days.

14 MS. NEUMAN: -- 135 days. And I believe the  
15 activities allow it to continue until we issue our Biological  
16 Opinion. But we can try to figure out who is handling this  
17 at NMFS, and I can try to put you in touch with that person  
18 and maybe you can have a dialogue going on --

19 MR. WARD: Good. Thank you.

20 MS. NEUMAN: -- through the -- through the  
21 consultation phase.

22 MR. SNOW: Jim Snow with the Westland Water  
23 District. Just a couple of questions on the process here.  
24 These scoping things are a part of the 4(d) process that you  
25 talked about, I assume. But the Environmental Assessment,



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1 that's being written now, the draft?

2 MS. NEUMAN: It is being drafted now, but we are  
3 using what comes out of this workshop to help us --

4 MR. SNOW: To -- as input to that?

5 MS. NEUMAN: Exactly, as input to that.

6 MR. SNOW: Do you have a time frame for when that  
7 draft will be out?

8 MS. NEUMAN: We do have a time line. And I believe  
9 we're hoping to complete the draft of the Environmental  
10 Assessment in -- is it October?

11 MS. WANG: October, yeah.

12 MS. NEUMAN: -- October.

13 MR. SNOW: Okay. Thanks.

14 MS. NEUMAN: And, again, the review process for the  
15 Environmental Assessment, I believe that that's primarily an  
16 internal document until it is finalized. I don't know  
17 whether it goes out for external review. But we'd like to  
18 have as transparent a process as possible. So, again, if you  
19 contact me, I can give you updates on what's happening.

20 MR. SNOW: Oh, okay. So that draft will not be a  
21 public review type of thing?

22 MS. NEUMAN: I do not believe that the draft is,  
23 but our final version of the Environmental Assessment is  
24 available to the public.

25 MR. McLAIN: Just a thought on false questions. I

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1 think that probably others here that are -- have the same  
2 question about research activities. I'm wondering if we  
3 should have a small -- a short discussion later regarding how  
4 that process is going to work. Because I know we've talked  
5 about grace periods and when take prohibitions take effect.  
6 And I think if we had a calendar -- maybe an idea of a  
7 calendar, I think a lot of people would be put at ease a  
8 little bit if they saw kind of a calendar of when take  
9 prohibitions would actually be in effect and things like  
10 that.

11 MS. NEUMAN: Yeah, we're not talking about these  
12 take prohibitions being in effect until about a year and a  
13 half to two years from the date of the -- the effective date  
14 of the listing.

15 MR. McLAIN: So, for example, the Biological  
16 Opinion that's done on your project would assess the impact  
17 of take in terms of jeopardy on North American -- on  
18 sturgeon, however, there are no take prohibitions. So there  
19 wouldn't be any terms and conditions or anything --

20 MS. NEUMAN: Right.

21 MR. McLAIN: -- that would specify take levels and  
22 things like that.

23 MR. WARD: So, in essence -- again, Paul Ward --  
24 what I'm hearing is there would be no prohibition for a year  
25 and a half. Is that correct?

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1 MS. NEUMAN: A year and a half to two years.

2 MR. WARD: Okay.

3 MS. NEUMAN: The reason, though, why this  
4 particular activity -- why we have to re-initiate here is  
5 because it's a federal agency carrying out the activity. And  
6 basically for any activity that is funded by a federal  
7 agency, is carried out by a federal agency, any of those  
8 activities fall under Section 7 of the Endangered Species  
9 Act, and that federal agency is required to enter into  
10 consultation with us on that project at the time the listing  
11 is effective. So it's because this particular research  
12 project depends on a federal agency that we're going through  
13 the consultation process here. If the folks collecting this  
14 information were -- if it were a private organization, at  
15 this point they could carry out that activity with no  
16 requirement for NMFS approval.

17 MR. WARD: Okay. I --

18 MS. NEUMAN: It's because it's -- there's a federal  
19 nexus for this particular activity.

20 MR. WARD: Right. The other piece of this is, this  
21 is a combination of a federally sponsored project, a funded  
22 project, and also a Fish & Game project. We have a number of  
23 sampling sites for Fish & Game. So presumably that would  
24 come under 4(d). But, again, we have that kind of grace  
25 period, that year-and-a-half period to get everything in

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1 place before we would have to comply.

2 MS. NEUMAN: Yes. And we're right now working on  
3 trying to get our headquarters office in Silver Spring to  
4 delegate green sturgeon issues to the regional office so that  
5 if we decide that green sturgeon, for example, would be  
6 incorporated into the 4(d) Research Program that currently  
7 exists for listed salmonids, we'd like to be able to make  
8 that determination here in the Southwest rather than having  
9 that go back to Silver Spring. So we're already in the  
10 process of trying to streamline things like incorporating  
11 green sturgeon into existing programs and plans.

12 MR. SNOW: Jim Snow again. The Bureau has  
13 re-initiated consultation on the -- on the OCAP, as I  
14 understand it. And Bruce may want to chime in here. But how  
15 does this time frame fit in with that, or is that time  
16 frame --

17 MR. OPPENHEIM: If this were -- well, it's --  
18 you're right, we're in a consultation period right now with  
19 the Bureau, and green sturgeon is one of the species that it  
20 will be consulting on. We'll have to make a determination on  
21 the jeopardy call through the opinion. We'll also probably  
22 look at terms and conditions and maybe even specify those in  
23 the opinion, but they won't become effective until the 4(d)  
24 rule becomes implemented. So we will most likely have  
25 something in there for green sturgeon in the opinion, but it



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1 won't become effective until the 4(d) ruling.

2 MR. SNOW: Okay.

3 MS. NEUMAN: Jeff, did you have something to add  
4 there?

5 MR. McLAIN: Just one final comment.

6 MS. NEUMAN: We're going to do, I think, a break --  
7 unless we have one more question.

8 MR. McLAIN: The other thing is, when -- when the  
9 take prohibitions come out, there will be a grace period on  
10 top of that.

11 MS. NEUMAN: Right.

12 MR. McLAIN: So after let's say a year and a half,  
13 there will be -- recall with (unintelligible), I think we had  
14 a six-month grace period. And I think we're talking about  
15 something similar with for-research-type activities.

16 MS. NEUMAN: Exactly. And if it's -- if it's a  
17 research activity that for whatever reason may not fall  
18 within the framework of an existing 4(d) Research Program --  
19 I think we've already identified at least one activity going  
20 on at UC Davis that may fall outside of that realm of things  
21 that would be covered within the existing 4(d) Research  
22 Program, that grace period would probably be even longer  
23 because those folks will probably have to go through a  
24 Section 10 permitting process, and that process can take, you  
25 know -- they say it can take close to a year. But, you know,

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1 there are people with outstanding permits, I think, close to  
2 five years and running at this point. So we'll have some  
3 kind of extended grace period for -- you know, for  
4 activities, especially those that are not going to be covered  
5 under an existing 4(d) Research Program where there's going  
6 to have to be a Section 10 Permit issued to allow that  
7 activity to move forward, as long as those folks have  
8 initiated that process; that's the caveat there.

9 MR. WARD: So you feel there would be a contact  
10 that we can use -- yourself or Jeff or somebody here in the  
11 next several weeks that we can kind of compare information  
12 and make sure that --

13 MS. NEUMAN: I think what we need to do is make  
14 sure that we know who the person at NMFS is who's going to be  
15 handling the re-initiation of this consultation. I don't  
16 know who it is.

17 MR. McLAIN: Howard Brown.

18 MS. NEUMAN: Howard Brown.

19 MR. WARD: Good.

20 MS. WINDHAM: However, that doesn't mean everybody  
21 call Howard Brown and see the status of the Biological  
22 Opinion or -- because otherwise --

23 MS. NEUMAN: Okay.

24 MS. WINDHAM: -- (unintelligible).

25 MS. NEUMAN: Okay.

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1 MS. WINDHAM: You're special, Bob.

2 MR. WARD: I have his phone number.

3 MS. NEUMAN: Try to limit your emails to maybe, you  
4 know, once every couple months. I guess he only has a couple  
5 months to work on it.

6 Okay. Did you have a question?

7 MS. JOHNCK: Yeah, I did, but I didn't know whether  
8 it's the right time to ask it. And I missed the piece at the  
9 beginning. I'm Ellen Johnck --

10 MS. NEUMAN: Hi, Ellen.

11 MS. JOHNCK: -- from San Francisco Bay.

12 How are you?

13 MS. NEUMAN: Good.

14 MS. JOHNCK: I represent the people that are  
15 bringing ships in and out of the bay -- big ships as well as  
16 medium, the whole gamut. Anyway, I was told that -- and I'm  
17 trying to get my arms around what the implications are with  
18 4(d), and I heard some different information, just what you  
19 said now, compared to what I was told. I was told that as of  
20 July 11th or -- there was an important date in July --

21 MS. NEUMAN: July 16th.

22 MS. JOHNCK: That was it. -- there actually will  
23 be a list that is threatened, and that any activity that has  
24 a potential to affect the green sturgeon, which is -- well,  
25 dredging is local; we keep the channels open for the ships --

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1 that we will have to go through a consultation.

2 MS. NEUMAN: If the dredging that you do requires a  
3 federal permit through --

4 MS. JOHNCK: Yeah.

5 MS. NEUMAN: Then yes, you must initiate  
6 consultation with us. Yes, if there is federal nexus for the  
7 activity -- you know, federal nexus is, it's funded by the  
8 feds, it's carried out by the feds, it requires a permit by  
9 the feds, yes, you have to initiate consultation for those  
10 activities.

11 MS. JOHNCK: Okay. Well, I'll talk more about why  
12 we think we have -- well, that will be a major issue unless  
13 we can get this put into a program or something out there.  
14 I'll speak about that.

15 MS. NEUMAN: Okay.

16 Okay. Let's take a little break, and we're going  
17 to come back to a presentation by Josh Israel from UC Davis,  
18 who is going to tell us quite a bit more about the genetic  
19 population structure of green sturgeon. Really interesting  
20 stuff.

21 (Brief recess.)

22 MS. NEUMAN: Okay. Our first presentation this  
23 morning is by Josh Israel and Bernie May. They're  
24 researchers at UC Davis. And Josh is going to be talking  
25 about green sturgeon in Pacific estuaries, potential impacts



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1 of mixed-stock fisheries.

2 MR. ISRAEL: Thanks, Melissa.

3 MS. NEUMAN: Thank you, Josh.

4 MR. ISRAEL: Thank you.

5 Thanks, Susan.

6 Okay. Well, this is some work that has been  
7 ongoing for a number of years in Bernie's lab, the Genomic  
8 Variation Lab at UC Davis, and it's a part of my dissertation  
9 work. Okay. And I wanted to share with you some information  
10 that we're starting to get about green sturgeon in Pacific  
11 estuaries.

12 So first I wanted to just thank -- there's been a  
13 lot of cooperators and funders. And one interesting thing  
14 related to 4(d) rules is -- and I don't really talk about  
15 this anywhere else, and I just thought about it -- is, you  
16 know, research -- and many, many organizations are working on  
17 collecting tissue samples. And so preserving the ability to  
18 collect tissue samples is something that's really critical  
19 because I think that you'll -- I mean hopefully some of this  
20 basic research that's being done will be interesting and  
21 people are interested in using it for potential management at  
22 least in some of the western portions. I've been working  
23 with folks from Washington state and Oregon state as well as  
24 folks down here, and on the Klamath and the Rogue Rivers, and  
25 the Sacramento River. So I should say it's been funded by

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1 CalFed, Fish & Wildlife Service, NOAA's supplied us with some  
2 funding, and the Washington Department of Fish & Wildlife.

3 Just as an overview, I'm going to talk briefly --  
4 real quickly about life history. I'll talk about some of the  
5 population-structure analysis we've been doing; it's been  
6 updated. I'll sort of go over the methods and talk to you a  
7 little bit about the kind of markers that we're using, talk  
8 about genetic stock identification, and then share with you  
9 some of the spacial and temporal results and management  
10 considerations.

11 So just as Melissa said, the green sturgeon spawn  
12 in three known river systems. The Klamath and the Rogue  
13 Rivers, the habitat's very different than in the Sacramento.  
14 There's an area called China Rapids; you can see some  
15 volcanic outcroppings. That's probably similar to the kind  
16 of bedrock and, of course, substrate that they have on the  
17 bottom of the river there. These are very distinct river  
18 systems that might be influencing the population structure.  
19 They spawn in the summertime. These are just some fish they  
20 caught up at the Red Bluff Diversion Dam. They spend one to  
21 three years in estuaries -- you know, one to three years or  
22 one or four years is somewhat of an uncertainty. We don't  
23 really know much about that young life history stage when  
24 they're in the estuaries, and then spend anywhere from 10 to  
25 15 years in marine waters aggregating in estuaries in the

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1 summer. And I'm going to be talking about San Pablo Bay,  
2 Winchester Bay, the -- these arrows got knocked down by  
3 Power Point -- the Columbia River estuary, Willapa Bay, and  
4 Grays Harbor up in Washington.

5           So we have about 1,200 samples in our analysis now,  
6 and they're samples from -- I'll show you the ones from the  
7 natal rivers first. These are the Sac ones. They're  
8 denoted -- and these colors got changed over here as well --  
9 they're denoted in red: This one, this one, this one, and  
10 this one. We have four years' worth of samples from the  
11 Sacramento River. And you can see that those are all  
12 segregating from the Klamath and the Rogue and the Umpqua  
13 Rivers, which are in the Northern Distinct Population Segment  
14 down here on this gene tree. You'll also note that there's a  
15 number of aggregations. Some of these aggregations are  
16 located in the Southern Distinct Population Segment, like  
17 these two from -- these two from San Pablo Bay up here that  
18 have the broken lines, and then you'll note that there's a  
19 number of aggregations from the Columbia -- two from the  
20 Columbia River -- actually, a third one from the Columbia  
21 River, one from Willapa Bay, two from Winchester Bay, and one  
22 from Grays Harbor. Those are located in the Northern  
23 Distinct Population Segment, and you can see that they run  
24 anywhere from -- this is what interested us first, and we're  
25 sort of trying to understand, well, what are the origins of

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1 these fish, because a lot of these ones appear to be more  
2 similar to the Sacramento than they do to the natal  
3 populations on the Klamath and the Rogue down here. So we're  
4 sort of interested in looking at that a little bit more.

5           So we used molecular methods. We used a type of  
6 molecular marker called micro satellite DNA. And what we do  
7 is we take a fin clip, we extract the DNA from it, and we use  
8 something called polymerase chain reaction, which basically  
9 uses an enzyme called the tactical range that replicates the  
10 DNA, and then we used some primers to amplify a specific  
11 region of the DNA. And then you use gel electrophoresis  
12 where you pass an electric current through a gel, and it  
13 moves, it mobilizes the DNA of different sizes, different --  
14 it takes it -- it basically moves them at different speeds.  
15 And then you can do an analysis with it where you develop a  
16 genotype, which is basically a genetic identity of an  
17 individual. And here you can see there's a number of  
18 individuals running down in the columns. These numbers on  
19 the top indicate a genotype -- the individual genetic  
20 identification. You can see that there's six bands, and you  
21 can see some -- these are basically what we call stutter  
22 bands. They're a byproduct of the PCR reaction. And then  
23 some of the individuals you can see have two bands, like  
24 here, and so the score for this individual -- the genotype  
25 would be 5 and 6. And then for some individuals there's just



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1 a single band, and those are what we call homozygotes; they  
2 both have two copies of the same -- the same allele. An  
3 allele is basically different genetic size, variation.

4           So just to share with you sort of the data set,  
5 we've got ten of these micro satellite loci that go into each  
6 individual's genotype. They've been optimized from five  
7 different sturgeon species. Two of these lists are dystonic.  
8 So we inherit one copy of a gene from our mother and one copy  
9 of a gene from our father. Sturgeon are much more complex.  
10 They're an ancestral species, and they've undergone change  
11 implication, and they, in fact, have four copies of most of  
12 their genes. And so eight of my loci are what we call  
13 tetrasomic loci, and they -- in that case, we have four gene  
14 copies: Two from their mother, and two from their father.

15           So I have a large number of individuals from the  
16 natal populations, and then I also have a number of  
17 collections from -- from these mixtures, from these estuaries  
18 where we want to try to understand, you know, are all of the  
19 fish that we see in the northern estuaries actually from the  
20 Northern Population, or are they some mixture?

21           And here's just -- this is -- we've sort of  
22 advanced the method. We're no longer -- we're using a  
23 different type of gel electrophoresis. And you can see we're  
24 able to collect each of these different colors -- the yellow,  
25 green, and blue is actually a different locus. And we're

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1 able to collect multiple loci on each gel. And each column  
2 down there is an individual.

3           So genetic stock identification in natal  
4 populations -- so we've created a genetic baseline. And it's  
5 important for the genetic baseline to include multiple years  
6 from each of your natal populations. You want to try to have  
7 the -- have your baseline be as representative as possible of  
8 your populations. So we had three years of samples from the  
9 Sacramento River; those were juveniles. We had three years  
10 from the Klamath; those were adult fish collected in the  
11 Urock fishery. Three years of samples from the Rogue River  
12 collected by Oregon Fish & Wildlife, and one from the Umpqua.  
13 And what we did here, basically, is I tested the baseline and  
14 I'd done simulation mixtures -- I'm not going to share that  
15 information with you -- to look at the accuracy of  
16 assignment. And then we used a fractional allocation  
17 approach using a program called Structure, and I'll tell you  
18 about that -- I'll tell you what that does next. And then  
19 lastly, we used that Structure Program to determine the  
20 proportion of the estuary populations of those mixtures from  
21 each of the Distinct Population Segments.

22           So we tested the baseline basically using the  
23 Structure Program. And what the Structure Program does is it  
24 basically looks at all the samples in your data set and tries  
25 to determine the way to cluster those individuals that

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1 minimizes genetic signatures of mixtures. So it basically  
2 clusters all of your individuals into what it would consider  
3 populations where -- and populations are basically  
4 reproductive entities where there's -- that are independent,  
5 where it doesn't appear that there's mixing going on, and  
6 there's different signatures for a population that appears  
7 independent versus a pop- -- or versus groups that appear to  
8 be mixing.

9           So we did that with the Southern Population, and  
10 here we found some self -- basically like self-identity. So  
11 we said, okay, we have 18 samples from 2002 in the Sacramento  
12 River, and how many of those appear to be from a Southern  
13 Distinct Population Segment versus a Northern Distinct  
14 Population Segment? And over three years from the  
15 Sacramento, you can see you get about 87 to 96 percent of the  
16 time you're assigning back to a Southern Distinct Population  
17 Segment. And you can see with the Sacramento River we have a  
18 little --

19           It doesn't really -- doesn't look as good on the  
20 screen. I think it goes through the screen.

21           -- you can see it doesn't -- it doesn't identify as  
22 well. Typically when managers are doing mixed-stock  
23 analysis, they try to get greater than 95 percent  
24 self-assignment and accuracy. So we still are hoping to add  
25 a few loci, which we're hoping will make -- give us

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1 additional power and make our -- make this -- make this  
2 approach more robust.

3           So mixed stock -- so I wanted to share with you now  
4 some of the information with the mixtures. And so -- so you  
5 can see here the two -- this is from south to north, north  
6 being at the top of the screen. The two lower ones are from  
7 San Pablo Bay, and you can see more than 90 percent in both  
8 of those years appear to be from a Southern Distinct  
9 Population Segment. And as you move north, Winchester Bay is  
10 on the Umpqua River up to Grays Harbor, which is above the  
11 Columbia River, you can see -- you start to get some mixing.  
12 And although -- although a great majority of the Columbia  
13 River, which we have three years of samples from, and Willapa  
14 Bay, which we have one from, appear to be from a Southern  
15 Distinct Population Segment. The Winchester Bay and the  
16 Grays Harbor samples are both interesting because it looks  
17 like the Northern and Southern Distinct Population Segments  
18 are mixing more equally there. And there's -- let's see.  
19 So -- so estuary aggregations in larger estuaries, San Pablo  
20 Bay, the Columbia River, Willapa Bay, appear to be dominated  
21 by Southern Distinct Population Segment green sturgeon.  
22 Northern and Southern Distinct Population Segments are found  
23 in approximately (unintelligible) and portions in smaller  
24 estuaries like Grays Harbor and Winchester Bay. Well, why?  
25 Is there some distinct environmental conditions in these



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1 estuaries? Is there some kind of limited distance of ocean  
2 migration, and so the estuary to the furthest north has a  
3 larger proportion of Northern Distinct Population Segment  
4 just because the Southern Distinct Population Segment of fish  
5 aren't migrating that far? We're not sure. We know that  
6 from some of the radio telemetry work that's going on that we  
7 do see -- this pattern does seem to fit some of that other  
8 direct data where we're seeing a large amount of migration  
9 between the Washington estuaries and the Columbia and Willapa  
10 Bay and the San Pablo Bay.

11           So, you know, looking sort of through time, the  
12 samples that I have from different years from the same  
13 location, the three samples from the Columbia River seem to  
14 display similar proportions of Southern to Northern Distinct  
15 Populations Segment fish. '99 is a little bit -- is  
16 different, but in general, the majority of the fish in the  
17 Columbia River are from the Southern Distinct Population  
18 Segment. And when we look at San Pablo Bay, we have -- from  
19 two years we see, you know, general consensus that the  
20 majority of the fish in San Pablo Bay are from the Southern  
21 Distinct Population Segment.

22           So -- so it's sort of interesting that the Southern  
23 Distinct Population Segment is present at a greater  
24 proportion than the Northern Distinct Population Segment in  
25 estuaries sampled, yet it's considered the less abundant of

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1 the two Distinct Population Segments. And the Northern  
2 Distinct Population Segment fish are not present in estuaries  
3 sampled at proportions relative to the purported abundance in  
4 their natal rivers. And so it sort of raises the question of  
5 where are the Northern Distinct Population Segment fish?  
6 And, you know, the reason this is all important is because  
7 there is bycatch of green sturgeon going on in these  
8 estuaries. And so people want to try to understand, you  
9 know, as far as conserving the Southern Distinct Population  
10 Segment -- Washington state and, I believe, the other  
11 agencies up there are interested in trying to manage their  
12 fisheries where there's bycatch of the green sturgeon in a  
13 way that's appropriate.

14 So, you know, some of the things we're talking  
15 about is exploring the potential to use a different type of  
16 electro marker called an SNP, a Single Nucleotide  
17 Polymorphism. And it's a type of marker that's more easily  
18 swerved for allele size and takes away this problem of having  
19 four gene copies that we have in a lot of these tetrasomic  
20 loci. We're looking to develop a genetic sampling plan to  
21 facilitate future recovery and conservation measures. And,  
22 you know, the reaction I get from the manager in Washington  
23 is that, you know, they're really interested in conservation  
24 and recovery of the Southern Distinct Population Segment  
25 fish, and they know that that's going to require them to

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1 manage their fisheries as mixed stocks now that they see what  
2 this data information is providing for them. And so they're  
3 really interested in knowing, you know, what the annual  
4 variation in the stock composition is, the seasonal  
5 variation, you know, is there times when they can time their  
6 fisheries so that they're limiting bycatch if they were to  
7 fish -- you know, if they were to open commercial fisheries  
8 early or late in some locations, and even the potential to  
9 look at within estuary variations and stock composition to  
10 close certain areas potentially. And we're hoping to take  
11 the information that we're developing and put it together  
12 with some geo-reference information that they collected to  
13 look at -- you know, to see if there's any within-estuary  
14 variation in the stock composition.

15 So I believe that that's it. And I'd be interested  
16 in taking any questions.

17 MS. NEUMAN: Thank you, Josh.

18 MR. ISRAEL: Jeff.

19 MR. McLAIN: Hey, great job, Josh. Just one  
20 question about this technique of using Structure. Have you  
21 gotten any additional feedback, you know, verifying that  
22 this -- this is -- this works, basically, that that is an  
23 effective approach?

24 MR. ISRAEL: So -- so using this Structure Program  
25 to do sort of this fractional allocation approach is not --

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1 it's not being used this way. Structure tends to be used  
2 early in analysis -- early in genetic analysis when people  
3 don't know how many populations they're dealing with. They  
4 take a data set from a certain location, and then you say,  
5 well, there could be anywhere from, you know, one to ten  
6 possible populations. And so I've done this step where I've  
7 taken the data and said, is there one population or -- you  
8 know, I have -- I believe I have like eight or nine  
9 locations. So each one of those locations I say could  
10 potentially be a reproductively isolated group. So I'll say  
11 anywhere from one to ten possible populations. And then it  
12 runs through these simulations, basically, and the -- and  
13 when I look at the results from all the simulations, I find  
14 that the simulation that solves best is when the number of  
15 groups is equal to two. And so -- so -- so I used  $K$  is equal  
16 to 2.  $K$  is the number of groups.

17 And then as far as using this method, there's --  
18 like I said, people aren't using it for fractional allocation  
19 at this point. And so this is sort of a novel approach to  
20 using the program.

21 Yeah.

22 MR. PHILLIPS: Jason Phillips, AA Rich and  
23 Associates. I was wondering, when you had the split  
24 populations that were pretty much even, why wouldn't those be  
25 considered maybe a third population? I mean why were they --



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1 why were they -- I mean it seems like if they were half and  
2 half, then maybe they're distinct in some way.

3 MR. ISRAEL: Yeah. So when we sort of go back to  
4 this graph, looking at the population structure, so when --  
5 you're talking about the Winchester locations, I believe --

6 MR. PHILLIPS: Yeah.

7 MR. ISRAEL: -- and the Grays Harbor location. And  
8 so I haven't done it -- so -- so why don't I consider those  
9 distinct -- why don't I -- well, so those are -- okay. Well,  
10 one reason -- one -- one issue is that those are in  
11 estuaries. So we -- and as far as we know, there's no  
12 spawning populations in the Grays Harbor area. Winchester  
13 Bay does support the Umpqua River. It drains -- the Umpqua  
14 River drains into it. So, basically, since there's no known  
15 spawning in those areas -- or -- well, in the Winchester  
16 case, the Umpqua River is a known spawning -- or is a  
17 purported spawning area for green sturgeon. And that could  
18 be part of a Northern Distinct Population Segment or it could  
19 be part -- it could be it's a known reproductively isolated  
20 population. We don't have a large sample from the Umpqua  
21 River, but I believe that that's unlikely. Grays Harbor,  
22 there's no spawning activity in that area; they just start  
23 aggregating there in the summertime. And so it's believed  
24 that that's one of these estuary mixtures and not an actual  
25 natal population.

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1                   So I don't know if I answered your question or not.

2                   MR. PHILLIPS: Oh, yeah. I mean it just seems when  
3 you have something that's split that much that maybe there is  
4 something else going on other than just happen chance of even  
5 mixing.

6                   MR. ISRAEL: Right. Those two locations are  
7 very -- are different than Willapa Bay and the Columbia and  
8 the San Pablo. Those are much larger estuaries. I think  
9 that there might be something going on with the ability for  
10 the green sturgeon to migrate a certain distance before they  
11 have to turn back around and also actually in selecting  
12 estuaries for possible environmental conditions. But we  
13 don't know enough about the environmental conditions and the  
14 way that green sturgeon might be behaving to do anything more  
15 than hypothesize about that.

16                   Yeah.

17                   MS. NEUMAN: Josh, is there a way to generate an  
18 error term for some of these proportions that you're  
19 reporting on for -- you know, in each of the systems?

20                   MR. ISRAEL: Right.

21                   MS. NEUMAN: I guess -- yeah, this is the table --

22                   MR. ISRAEL: So -- so like --

23                   MS. NEUMAN: So we have some degree --

24                   MR. ISRAEL: -- one way to consider sort of an  
25 error is from self-assignment results and thinking, well, if,

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1 you know, 10 percent of the time or 13 percent of the time it  
2 doesn't self-assign correctly, then up to -- there could be  
3 up to like a 13 percent error potentially in its assignment.  
4 The interesting thing is when I look at these results as like  
5 an individual assigning to one group or another, I find that  
6 most of them assign 90, 95, 98 percent of the time to one  
7 group or the other. They don't -- they don't assign 50  
8 percent of the time to one or the other. You're either a  
9 Southern Distinct Population Segment fish or a Northern  
10 Distinct Population Segment fish.

11 So we're going to be taking, hopefully, another  
12 approach in the next month or two and doing -- looking at  
13 another technique that basically -- a more absolute technique  
14 where we're looking at assigning each individual, and that  
15 should hopefully provide us with a little bit more of an idea  
16 for what our error is in assignment.

17 And so there's -- just so people know, there's  
18 three more loci that I'm working with, but I don't have  
19 enough of the data set to include that information at this  
20 time. But three more loci -- you know, I'm working with ten  
21 loci currently, so about 20 percent more information  
22 hopefully this summer.

23 Okay. Thank you.

24 MS. NEUMAN: Thanks, Josh.

25 Okay. Our next speaker is Marty Gingras from the

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1 California Department of Fish & Game.

2 And, Marty, do you have any visuals?

3 MR. GINGRAS: (No audible response.)

4 MS. NEUMAN: You do not. Okay. So I will just --  
5 let's see here. I'll blank the screen so we don't have  
6 anything annoying behind you.

7 MR. GINGRAS: I'm not going to be up there --

8 MS. NEUMAN: Oh, you're just going to hang out back  
9 there? Okay.

10 And Marty is going to be talking about the  
11 Interagency Ecological Program's work, extant and planned, on  
12 green sturgeon and the need for incidental take.

13 MR. GINGRAS: My talk is going to be incredibly  
14 brief, so I suspect you'll be able to get it. It's also not  
15 going to be very technical. It's more of an introduction,  
16 particularly for the fisher folks, to the Interagency  
17 Ecological Program.

18 The Interagency Ecological Program is a group of  
19 about eight or nine agencies. Long ago in the seventies they  
20 recognized that, boy, there's going to be a lot of research  
21 and monitoring going on in the Delta and the San Francisco  
22 estuary, and they need to have some commonality. So what  
23 they do is they get together, they decide what studies need  
24 to be funded, what type of reports are going to be generated  
25 out of those studies. They share money. They share



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1 resources like boats. They share staff. So we do and have  
2 done for decades now a lot of sampling of fish in the  
3 San Francisco Bay estuary, the Delta, and, to a much smaller  
4 extent, the Sacramento River proper.

5 So that information is used also in a forum for  
6 managements' consideration of fisheries population data as it  
7 pertains to managing water quality, water quantity, timing of  
8 flows, that sort of thing. So we collect a lot of  
9 information that's actively used to manage the habitat.

10 IEP studies take green sturgeon, but they don't  
11 take them in an abundance, and they never have, and that's  
12 partly why NMFS doesn't have much information on the status  
13 of the green sturgeon population down here. But there are  
14 several studies that either incidentally or intentionally  
15 take green sturgeon. Those include an adult sturgeon  
16 population study started in 1954. It's been going pretty  
17 much on alternate years since the mid seventies. It's a  
18 classic kind of mark and re-capture study where we capture  
19 fish typically in San Pablo Bay, and we apply a very  
20 permanent tag to them. We release them after collecting some  
21 minor biological information like length and species and that  
22 sort of thing. And then we rely on anglers to return tags on  
23 fish that they've harvested, and we also rely on scientific  
24 sampling in subsequent years to give us returns. And with  
25 those two types of returns, we can calculate the harvest rate

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1 on an annual basis for these fish, and we can also calculate  
2 abundance.

3 Now, that program was originally intended to give  
4 us that information, that is, harvest rate abundance, also  
5 some stuff about (unintelligible) strength and response to  
6 environmental variables, but it was designed around white  
7 sturgeon because they are vastly more numerous and easy to  
8 sample than green sturgeon are. In the entirety of the  
9 study, all those years over those decades, we've captured and  
10 tagged only about 300 green sturgeon. So we've never  
11 actually produced a population estimate for green sturgeon.  
12 We did some magicky kind of stuff that I don't like doing and  
13 I don't talk about it anymore where we looked at the  
14 abundance of white sturgeon and then the catch ratio of white  
15 sturgeon to green sturgeon against a multiplier, and you end  
16 up with a smaller number for green sturgeon. I'm not going  
17 to talk about that anymore. So generally, we catch green  
18 sturgeon on purpose, you know, for that study. So that's a  
19 form of take.

20 We also have several studies that definitely catch  
21 sturgeons. And some of them we haven't gone to the trouble  
22 of figuring out whether they were green sturgeon or white  
23 sturgeon, but we're going to start doing that in the future.  
24 Those are The Bay Study, The 20-Millimeter Survey, The Summer  
25 Tone Net Survey, and we also do fish facilities research that

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1 moves all over the Delta predominantly to capture sturgeon as  
2 a happenstance -- but they have captured many green sturgeon.  
3 We also manage a lot of the data that comes out of the South  
4 Delta fish facilities, so we do process that information, and  
5 we're starting to summarize that and provide some  
6 stakeholders more regularly than we have in the past.

7 All of this data is available. And some of the  
8 programs, as I mentioned, are being revised to provide  
9 additional information. We're going to attempt to key out  
10 the little tiny sturgeon, you know, whether they're white or  
11 green. It's actually a challenge. It's expensive. A lot of  
12 this work is extremely production oriented. We sample, you  
13 know, tremendously and our lab staff is limited. So this is  
14 going to be a new capability that we try to develop. So  
15 we're going to need take authorization, of course. And we're  
16 working clearly with Jeff on a Section 10. So -- but we're  
17 very interested in how this all goes.

18 And I would like to leave you with this notion that  
19 we're very eager to collaborate more than we have been on  
20 green sturgeon. You know, we have a vast program. It's  
21 huge. And we capture a lot of sturgeon, and we can  
22 potentially capture a lot more green sturgeon than we have in  
23 the past. And, in fact, this coming August we are going  
24 to -- I think only for the second time, we're going to start  
25 capturing sturgeon in the San Pablo Bay in August. Typically

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1 we go September and October, and historically it seems that  
2 they're more susceptible to the gear, at least, in August.  
3 So we may capture -- hopefully we'll capture hundreds of  
4 green sturgeon in August and be able to take tissue samples  
5 if necessary and lots of other stuff.

6 That's my presentation for today.

7 MS. NEUMAN: Any questions for Marty?

8 MR. PHILLIPS: I'm just wondering, where's the data  
9 available on the -- you said data was available on the  
10 studies on all the populations.

11 MR. GINGRAS: Right. The adult sturgeon data is  
12 available in primary publications, because it goes kind of an  
13 alternate-year basis. We just recently tagged in '05, and we  
14 haven't published yet. But if you want the data, I can get  
15 it to you. But The Bay Study and The 20-Millimeter Survey,  
16 Summer Tone Net, those -- all that data's on the web. If you  
17 go to either Bay Delta's web site, which is [delta.dfg.c.gov](http://delta.dfg.c.gov),  
18 or to the IEP, you'll find pointers that bring you to these  
19 data sets. Fish facilities research also has been pretty  
20 much just reported in paper. That stuff doesn't have a  
21 direct stream for the web.

22 MR. PHILLIPS: Are there plans to put them all in  
23 one place or --

24 MR. GINGRAS: That's a -- yes, it's supposed to all  
25 be at the IEP web site. And it's a big program with data



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1 coming from the DWR and others. So it's an ongoing effort to  
2 get it all there more quickly and in one spot. So if you  
3 don't find what you need on the web, let me know, and we'll  
4 get it to you. We're all about providing customer service.

5 MS. NEUMAN: Hold on one second. What's your name?

6 MR. PHILLIPS: I'm sorry. Jason Phillips.

7 MS. NEUMAN: Jason Phillips.

8 MR. ISRAEL: Hey, Marty, I just had another  
9 question. Could you just also remind -- like what's up with  
10 the creole? I remember once you were talking and you were  
11 talking (unintelligible). Is there any plans to release  
12 creole --

13 MR. GINGRAS: Good point. We -- Bay Delta -- the  
14 Department of Fish & Game ran the creole surveys. And where  
15 I work, which is called Central Valley Bay-Delta Branch, for  
16 many decades we've had a Striped Bass Centric Creole Survey  
17 that was designed really only to provide a stream of data  
18 that plugs into the abundance estimates. Couple years ago,  
19 we decided, you know, it's kind of a no-brainer, we should be  
20 collecting information on sturgeon. So we have started to do  
21 that, but, really, the priority is striped bass. So we're  
22 not always going to where sturgeon are. If we can grow the  
23 program, we'll be able to sample more sturgeon. And, in  
24 fact, just very recently, the legislature approved the  
25 re-initiation of the Central Valley Creole Survey. I've

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1 forgotten its technical name. But in about July, I think,  
2 it's going to hit the ground again, and we're actually going  
3 to try to pull our striped bass survey in with their survey  
4 and thereby get a much more rigorous and much more  
5 conventional creole survey. And that program -- even though  
6 it's not appended to our Striped Bass Centric one, that one  
7 definitely will (unintelligible) sturgeon. They've published  
8 reports. They talk about, you know, the effort for sturgeon  
9 and the catch for sturgeon and all that sort of thing. So in  
10 the grand scheme over the next year or so, we're going to  
11 have a lot more information on sturgeon from the creole.

12 MR. ISRAEL: Do you know if there's any of the  
13 Central Valley Creole Survey information or reports on the  
14 internet or --

15 MR. GINGRAS: I don't believe they're on the  
16 internet, but I've actually scanned two of them and put them  
17 on an FTP site to facilitate our discussion about white  
18 sturgeon fishing regulations. So you could go to that FTP  
19 site and see those two. But I need to get the rest of the  
20 copies and scan those in. And I think in the future they'll  
21 publish them as PDFs on the web.

22 MR. ISRAEL: Okay.

23 MS. SEEHOLTZ: Marty -- I'm sorry, Alicia Seeholtz.

24 I work --

25 THE REPORTER: I'm sorry, I can't hear you.

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1                   MS. SEEHOLTZ: Alicia Seeholtz. We're actually  
2                   conducting creole on the Feather now. And I know that we're  
3                   talking with the DFG as eventually it's going to be taken  
4                   over, but I understand that's happening next year.

5                   MR. GINGRAS: The adoption of your --

6                   MS. SEEHOLTZ: We're kind of working on that  
7                   together to see how that's going on to determine if we want  
8                   to continue doing creole in addition to yours --

9                   MR. GINGRAS: Got it.

10                  MS. SEEHOLTZ: -- so that we get data -- some extra  
11                  data that we're looking for, also. So we're hoping it's  
12                  going to be all you, but, again -- so that, I understand, is  
13                  taking place next year. So this project that you're talking  
14                  about for the creole is taking place in July, is it going to  
15                  be a step process or is it eventually going to take over  
16                  everywhere or --

17                  MR. GINGRAS: Fisheries -- the Department of Fish &  
18                  Game is in the midst of a reorganization, and so pardon me  
19                  when I don't have all the answers or I route you to somebody.  
20                  But right now, Fisheries Branch, which is a new entity, is  
21                  running this new Creole Survey. And people at my level and  
22                  above are actively talking about joining the Bay-Delta Survey  
23                  with their survey.

24                  So what I've heard from them is that because of the  
25                  time it takes to staff up, they're going to start now, but

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1 they don't anticipate immediately doing the full recovery.

2 MS. SEEHOLTZ: Okay.

3 MR. GINGRAS: So it will be phased in, but I don't  
4 know anything about the particulars of their  
5 (unintelligible).

6 MS. SEEHOLTZ: Okay. Thank you.

7 MR. GINGRAS: All right.

8 MS. NEUMAN: Marty, I have a question.

9 MR. GINGRAS: Okay.

10 MS. NEUMAN: Can you comment about -- on the time  
11 line for the sturgeon fishing regulations and the emergency  
12 rule in particular and what kind of time line we're looking  
13 at for expiration of the emergency rule and what we can  
14 expect to be happening over the next couple of years with  
15 regard to state fishing regulations for sturgeon in general.

16 MR. GINGRAS: Sure. Josh mentioned something about  
17 the northern states, Oregon and Washington. They have a  
18 commercial fishery as well as a recreational fishery.  
19 California, way back in the fifties, decided that we would  
20 have only a recreational fishery for sturgeon.

21 The history of sturgeon regulations in California  
22 is easy to say because there's not much -- you know, it was  
23 closed in the early 1900s; it was reopened only to sport  
24 fishing in the mid 1950s. They did a little bit of  
25 investment. They made a minimum-size length way back when,



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1     sometime I think in the fifties. The big thing that happened  
2     was in the nineties we created a slot limit, and that was  
3     actually, as I understand it -- well before my time -- that  
4     was advocated for by some fishing groups. And the  
5     particulars of the slot limit, the minimum size and the  
6     maximum size, those were negotiated. They weren't really  
7     science based, although there was some information available  
8     for consideration when they did that. So in the nineties,  
9     they made the minimum size 46 inches, and the maximum size 72  
10    inches, which is a huge very valuable fish in terms of meat  
11    and row and -- but also in terms of its value to reproduction  
12    and that sort of thing.

13                 So with regards to, you know, our Adult Sturgeon  
14    Tagging Program, we see cycles in these limits of these fish,  
15    and we see changes in the harvest rate. And in the late  
16    nineties, our expert, now retired, Dave Cohorse, predicted a  
17    massive decline in the number of slot-size fish around now  
18    and hoped that there was going to be recruitment -- big  
19    recruitment of little fish into that slot. The last year  
20    when we tagged fish, we did not see a strong signal of a lot  
21    of small fish coming into the slot, and we saw that the age  
22    distribution and the abundance was really quite low -- it was  
23    alarmingly low, lower than we figured it would be. And we  
24    recognized even though that abundance estimate by virtue of  
25    how it's calculated will improve over the course of the next

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1 year and a half or so, we nevertheless decided to elevate the  
2 discussion to Fish & Game executives, and they decided that  
3 we would propose to the Fish & Game Commission that we  
4 restrict harvest on spawners in 2006. So we went to the  
5 Commission with that proposal way back when, in February, and  
6 they didn't like, as I understand it, the notion that one  
7 resource user group would have the opportunity to do all of  
8 that conservation. They wanted to spread that opportunity to  
9 do conservation around to all the user groups.

10 So we went to the user groups and -- geographically  
11 based and talked with them. And in general, they supported a  
12 different slot that would be more protective. If it would be  
13 a fight everywhere, they didn't want closed seasons or  
14 anything like that. They also supported the implementation  
15 for a first-time annual bag limit. Right now there's a daily  
16 bag limit of one. So potentially people -- individuals can  
17 legally take a lot of sturgeon.

18 The other thing they supported was managing green  
19 sturgeon separately from white sturgeon. They also supported  
20 the number of (unintelligible) sport-fishing regulations and  
21 ways to spend money so that poachers would get nabbed more  
22 often.

23 So as a result of that discussion, we went back to  
24 the Fish & Game Commission, and we said, well, we recommend a  
25 rather narrow slot limit, and that would be 46 to 56 inches,

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1 but it would be 120 days only, and this was from --  
2 ultimately it was implemented, I think, in March -- early  
3 March. So right now what we have is a zero bag limit on  
4 green sturgeon, and we have this very narrow slot, but we  
5 have the original bag limit. So that's going to expire  
6 sometime in early to mid July unless the Department of  
7 Fish & -- or, sorry, unless the California Fish & Game  
8 Commission decides to take an action, like prolonging one or  
9 the other of those. And I have no clue what they're  
10 contemplating. They're completely doing their own thing.

11           Coincidental to all this -- and, actually, we've  
12 been planning this process for a year before the emergency  
13 thing came up. This year is the tri-annual cycle for the  
14 Fish & Game Commission to consider changes to sport-fishing  
15 regulations for the long term. Those recommendations can  
16 come from the public or agencies. So we are going to submit  
17 a proposal to the Fish & Game Commission that they change on  
18 a long-term basis the fishing regulations. And that's a  
19 confidential recommendation at the moment, but I will tell  
20 you it's very consistent with what the public wants us to do.  
21 That's fortunate, because what the public wants us to do is  
22 quite conservative. It would manage for -- I can tell you it  
23 would manage green sturgeons definitely from white sturgeon;  
24 that's the big thing. It also speaks to the slot length and  
25 the number of fish individuals can harvest and that sort of

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1 thing.

2 So those are going to be heard -- these proposals  
3 are going to be heard during a three-month period starting in  
4 August by the Fish & Game Commission. And the public has  
5 lots of opportunities to provide feedback on any one of what  
6 are going to be dozens and dozens of proposals to change  
7 fishing regulations.

8 So to recap, we've got an emergency bag limit of  
9 zero green sturgeon and an emergency slot limit produced on  
10 white sturgeon. It's only going to last into June -- July.  
11 Maybe those will revert back to their original, or maybe they  
12 won't. But in August, the public is going to see Fish &  
13 Game's proposal for long-term fishing regulations. And any  
14 of those regulation changes, those will become effective in  
15 about March of 2007. So in reality, there's a potential gap  
16 in the green sturgeon regulations from about July of '06 to  
17 about March of '07.

18 MS. NEUMAN: Thank you.

19 Other questions for Marty?

20 Okay. Our next presenter is Pete Davidson from  
21 Coastside Fishing Club. And he's going to be talking about  
22 the Fishing Club's perspective on green sturgeon.

23 MR. DAVIDSON: All right. Well, I'm pleased to be  
24 here. I am also just getting over a cold. I'm just getting  
25 my voice back. So if you don't capture everything that I



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1 say, just feel free to stop me.

2 I am here representing Coastside Fishing Club. I  
3 don't claim to be representing all recreational fisherman,  
4 but we are a fairly large club, and I think reasonably  
5 representative of the feelings out there.

6 Just a little -- real quickly, some information  
7 about the club. We're a non-profit internet-based club. We  
8 have over 12,000 members mostly in Northern and Central  
9 California who primarily fish the coast, the bays, the delta,  
10 the rivers, you know, pretty much all over. You know, I  
11 think we've got a growing contingent -- we just started out  
12 as really a saltwater-based club -- a growing contingent of  
13 freshwater fishermen. So we've actually added a separate  
14 discussion board around freshwater fishing.

15 The foundation of the club is really entirely  
16 around, you know, our passion -- a common passion for  
17 pursuing recreational fishing. The club is basically run  
18 through a web site, exchanging vast amounts of information  
19 primarily fishing reports. I think that's what usually gets  
20 people most interested in the club. But pretty quickly  
21 people get turned on to the other bits of information they're  
22 sharing in terms of techniques, tackle, maintenance of  
23 equipment, boating safety, regulatory issues, such as this,  
24 and so on. We're entirely supported through donations of our  
25 members and our sponsors, which our sponsors tend to be local

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1 fishing- and boating-related businesses, although we do have  
2 some national interests at this point. And all of our -- all  
3 of our folks that go to these sort of meetings and our board  
4 members are all volunteers.

5 I put up a listing of the primary species. If you  
6 were to go to our fishing reports and see what's being  
7 reported on, these are the dominating species. You know,  
8 certainly, you know, again, moving into freshwater, we're  
9 starting to see more trout and bass and steel head, but this  
10 is really the bulk of it.

11 Understanding that we are a large club, we do spend  
12 a lot of time out on the water. There is growing emphasis on  
13 conservation and a growing realization that it really is  
14 necessary to conserve what we have in order to continue to be  
15 able to do this for ourselves and for future generations.  
16 And we're not ignorant of the fact that, you know, these are  
17 not inexhaustible resources.

18 Catch and release certainly is growing in  
19 popularity particularly for sturgeon. We're kind of forced  
20 to do a lot more catch and release this year than we probably  
21 would have liked with the emergency rules. But, you know, I  
22 think there's almost a badge of honor now, if you read  
23 through the fishing reports and somebody releases a  
24 legal-sized sturgeon. In the past it was kind of, you know,  
25 "What are you doing? You're crazy. Everybody likes

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1 sturgeon." Well, now, you know, catch and release is  
2 definitely something that we strongly support.

3           There were some -- you know, some issues -- you  
4 know, there were some points where some large fish were being  
5 caught and pictures were posted. A lot of concerns were  
6 really put out there in terms of making sure that we didn't  
7 harm those large gravid females, the ones that we really,  
8 really need to continue -- continue the species. And so  
9 there's been a lot of discussion about what are proper  
10 fish-handling techniques, and what do we do to ensure that we  
11 don't harm or kill any of these fish that we know are so  
12 important.

13           Moving into Coastside's interests real quickly, you  
14 know, we started out as just a fishing club, and we truly  
15 just -- we wanted to exchange information about how to catch  
16 fish and where did you catch them yesterday. There's been  
17 increasing threats to us in terms of our ability to continue  
18 enjoying our sport. And so we've been forced to become more  
19 and more involved in these sorts of issues, the regulatory  
20 and political. And a lot of these discussions and decisions  
21 are very, very political in nature, you know, particularly  
22 when we start talking about water resources.

23           We also want to make sure that -- you know, we  
24 understand and support conservative fisheries management, but  
25 we also want to make sure that all data sources that are out

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1 there are being considered. And, you know, we think that we  
2 have some -- some fairly valuable information through our  
3 club and through the experiences of our members that probably  
4 warrant at least some consideration, and that the results of  
5 the models, whatever projections are being put out there, are  
6 really being validated through common sense. We've faced  
7 a situation a couple years ago -- and I'll talk a little bit  
8 about this more, but where there were some catch estimates  
9 put out there for rockfish that stated we had exceeded our  
10 recreational allocation of fish during a portion of time when  
11 the season was actually closed. I mean obviously on face  
12 value it doesn't make any sense. We challenged those  
13 decisions, and we had some success with that.

14 A little bit of the activities that the club has  
15 been involved in: Salmon grow-out pens in San Francisco Bay;  
16 I think we've released something approaching two-and-a-half  
17 million smelts. Research on rockfish barrier trauma, and  
18 this is related to getting access to some deeper waters, and  
19 our kids and veterans fishing programs, which are proving to  
20 be extremely popular. We're participating in rockfish  
21 tagging studies off the Marin coast. And, in fact, I think  
22 just last week or the week before we had a recapture from a  
23 fish that was tagged in -- last fall that was recaptured off  
24 of Crescent City, which is several hundred miles north. And  
25 this is a species that was not really generally believed to



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1 travel long distances. The MRFSS methodology is the one I  
2 mentioned about the catch estimates of rockfish, and then  
3 very recently I think we overcame what we all thought was an  
4 inevitable closure of recreational salmon fishing related to  
5 the Klamath returns and were able to argue for a pretty good  
6 season for at least recreational fishermen.

7           Moving into what you all are interested in, so what  
8 do recreational anglers and green sturgeon have in common?  
9 You know, one of the things that you hear locally is  
10 references to golden sturgeon. Marty probably knows a lot  
11 more about this than I do. I think that a lot of times these  
12 terms are used interchangeably. I've seen some research that  
13 suggests that there may be a separate morpho type of green  
14 sturgeon and maybe it's just a different color variation.  
15 They're out there. I really don't know enough about them to  
16 comment other than when you hear "gold sturgeon," "green  
17 sturgeon," probably you should think the same things.

18           In general, at least in the bay -- the broader bay  
19 area, green sturgeon catches are incidental to pursuit of  
20 other species, primarily white sturgeon. They're -- we don't  
21 find them to be rare, although, you know, you certainly can't  
22 go out there and catch one of these fish if you decide to do  
23 that. I mean you're lucky if you can catch one every two or  
24 three years.

25           Green sturgeon are widely rumored to have inferior

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1 meat quality. I don't know from any personal experience  
2 whether that's true. I did speak to one person who has  
3 sampled it and said that it was okay. But I personally don't  
4 want to spread that. I certainly wouldn't state that on our  
5 club web site. I think it's fine to have this rumor out  
6 there. I do know that they have different meat color. They  
7 apparently have darker meat than white sturgeon, for whatever  
8 that's worth. They're generally not retained even when  
9 they're of legal size and legally retainable. We believe, as  
10 recreational fishermen, that we have very little impact on  
11 green sturgeon numbers. And, really, our primary concern is  
12 what sort of impact this process will have on our  
13 opportunities on other fisheries.

14 We believe that post-release mortality is likely to  
15 be very low. I saw -- in one of the NMFS documents, there  
16 was an estimate of 2.2 percent fishery-related mortality. I  
17 would tend to believe that that's a conservative estimate. I  
18 know that most of the fish that we see are small. Those fish  
19 can be brought in very quickly. They're generally very  
20 easily released. There's not a lot of struggle or trauma to  
21 the fish to release them. So, you know, the 2.2 percent, you  
22 know, take it for what it's worth, but I tend to believe that  
23 it's probably -- it's certainly no higher than that and  
24 probably lower.

25 Listed is a bunch of other issues that -- I don't

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1 think there's any surprises here in terms of what we would  
2 believe are probably broader impacts. I actually meant to  
3 add predation to this list and forgot. And what I mean by  
4 this is primarily sea lions. And I have no idea -- I didn't  
5 see any of the documents and even in the -- Melissa, your  
6 assessment where that might have been in there. But I  
7 personally have witnessed sea lions taking sturgeon in Suisun  
8 Bay at least half a dozen times over the last three or four  
9 years. I know several other people have seen the same thing.  
10 No idea what species they were. If I was to venture a guess,  
11 I would say they're white sturgeon, but I do know these  
12 animals are very smart. And if they can figure out a place  
13 where green sturgeon congregate and they have access to them,  
14 they'll take them out. So I think that's something that  
15 probably needs to be added to the discussion and to the list.

16           Uncertainty around green sturgeon, again, we've  
17 been talking a lot about that. There's a lack of real deep  
18 scientific study. You know, I don't want to downplay any of  
19 the work that Marty's doing, but in light of the emergency  
20 rule, white sturgeon -- you know, we're having a fantastic  
21 white sturgeon season. We're catching a lot of fish and  
22 releasing a ton of fish. We question whether or not there's  
23 really this catastrophic decline in legal-size fish. Maybe  
24 we're just all great fishermen and we're finding all the  
25 stupid ones. I don't know, but there seems to be a lot of

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1 fish out there. So we just -- we just question -- and,  
2 again, we talked here today about real questions about green  
3 sturgeon abundance, and certainly we have those questions,  
4 and we're interested in doing anything we can to further the  
5 science.

6           Coastside's position is that we really want to  
7 assist in any way to improve the science, better  
8 understanding of the movements of these fish, numbers of  
9 these fish, the population distributions. Again, you know,  
10 we have -- we have reports on the web site. We could  
11 facilitate reporting of green sturgeon catches if that would  
12 be helpful. And that was a little bit later into the  
13 presentation; I've summarized some of those. Any other ideas  
14 that you have in terms of our abilities to help the science,  
15 you know, whether it's participation in tagging studies that  
16 may or may not be a good idea, but those would be things that  
17 we'd certainly be happy to talk about and help with.

18           Just in the interest of improving the science, I  
19 just went back through our -- our web site and did a search  
20 on green and golden sturgeon reports. And, actually, I went  
21 through again last night and found that I was missing one.  
22 So there were actually 17 green sturgeon reported roughly in  
23 the first five months of the year -- of this year. None were  
24 retained even when they were allowable. The size ranges that  
25 I saw range from about 24 inches up to legal-keeper size. I



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1 believe there were 14 of those fish where I could actually  
2 determine the size of them. I think 10 out of the 14 were in  
3 that 24- to 36-inch size range. So I don't know what your  
4 class would be, but it seems to fall into your expectations  
5 in terms of the juveniles.

6           And then finally, the distribution of where those  
7 fish were caught, primarily in the San Pablo Bay and south of  
8 the Bay Bridge. The additional fish that I missed in my  
9 sampling was also in Suisun Bay. So three in Suisun Bay and  
10 the rest downstream.

11           I spoke with Susan as we were talking about what we  
12 might put together in our presentation, and I suggested that  
13 we might want to do a member survey. So we posted a survey  
14 on the web site. We got about 660 responses. The questions  
15 were focused on these issues. I have to say that, you know,  
16 I'm not a professional survey designer, so there's certainly  
17 a potential for bias in the questions. So take them for what  
18 they're worth.

19           The characteristics of our respondents, about 77  
20 percent reported fishing for sturgeon on the average of at  
21 least once a year. My guess is that this is a higher  
22 percentage than the Coastside Club as a whole and it's  
23 probably because the survey was put out there as a sturgeon  
24 survey. So I think it probably attracted people who would be  
25 most interested in sturgeon.

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1                   We asked a question of what times of year do you  
2 typically fish for sturgeon. We didn't ask for how many  
3 trips do you make in a month; we just asked what months are  
4 you doing your fishing. And it basically just said to  
5 checkmark every month that you would fish for sturgeon. So  
6 84 percent of that effort was in this November through April  
7 time period when really, you know, salmon is essentially  
8 closed, there's no halibut in the bay because it's too muddy,  
9 the weather outside the Golden Gate is too nasty to consider  
10 boating out further out of range and so forth. And this  
11 really becomes the fallback fishery in the winter months for  
12 a large number of people. I believe if you were to take into  
13 account actual sturgeon fishing trips, the percentage is  
14 probably higher because you have a higher concentration in  
15 those months than the 84 percent.

16                   On green sturgeon catches, we asked people if they  
17 would be able to identify a green sturgeon if they caught  
18 one. We had 83 percent of the people who said that they  
19 would. That's a pretty high number. There's still room in  
20 there to educate people on these fish. So we can certainly  
21 facilitate that within our own club, and, you know, maybe  
22 there's something that Fish & Game should be doing or could  
23 be doing to help get the word out. I think the guys that  
24 fish for sturgeon a lot, there's no question that they would

25 know the difference. It's the casual sturgeon fisherman

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1 where there may be more of a question.

2           And 42 percent reportedly reported catching at  
3 least one green sturgeon in the past ten years. The  
4 significance of that number, you know, just shows that there  
5 are fish out there, they are being caught.

6           Only 4 percent reported ever retaining a legal  
7 green sturgeon. I would guess that number, if you were to  
8 ask over the last two, three, four, five years, it's probably  
9 much, much lower. I do know in talking to the long, long  
10 time sturgeon fishermen, you know, guys that have 30 years or  
11 more on the water, they used to see a lot more of them and  
12 more in the legal-size range than they do now.

13           Only 10 percent said they'd ever caught a green  
14 sturgeon fishing for anything else. It's predominantly a  
15 bycatch to the white sturgeon fishery. You know, potentially  
16 I suppose that they could be caught while fishing down in the  
17 bay fishing for shark or fishing for striped bass or things  
18 like that. But predominantly it's a white-sturgeon-related  
19 issue.

20           We also asked what times of year green sturgeon  
21 were being encountered. And when I lined this up against  
22 what times of year do you fish for sturgeon, there was almost  
23 a perfect correlation. So I don't know if that's just a bias  
24 in the question, but they were essentially perfectly  
25 correlated at 97 percent. So there doesn't appear, at least

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1 from the answers to the questions, that there's any period of  
2 time when they're more likely to be encountered when you  
3 adjust for the effort.

4 We asked where were sturgeon typically caught. I  
5 don't think, again, this is too surprising in terms of the  
6 distribution since it fits in fairly closely with Marty's  
7 research and others.

8 We also asked about member attitudes on potential  
9 regulations. We didn't get into a lot of detail here. I  
10 think we just didn't want to confuse people. But you can see  
11 from the top question and the responses that there's a very,  
12 very high level of support for protection of green sturgeon.  
13 And if that means a continuation of the ban on retention,  
14 then the club, in general, and I believe the board members  
15 and our members would support that. Again, this is not a  
16 targeted species for us.

17 "Would you support gear restrictions?" I think the  
18 answers to this really say, you know, there's a lot of  
19 uncertainty. I was surprised, actually, that there was 30  
20 percent that would say that there are additional gear  
21 restrictions that they would support. I can't think off the  
22 top of my head what restrictions would make a lot of sense,  
23 particularly since similar gear is used for a number of  
24 species, not just white sturgeon, but stripers, the sharks in  
25 the bay, flounder and halibut can all be caught on the same



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1 rigs. So it makes gear restrictions a little bit  
2 complicated.

3           And then finally we asked about seasonal closures.  
4 And this was really a question focused around if we could  
5 determine where the spawning grounds were, with a degree of  
6 accuracy, would you support closures? And this is, you know,  
7 also related to sort of the white sturgeon issues. And I  
8 think when Marty was referring to kind of spreading the pain,  
9 there was some discussions about closing some of the up-river  
10 areas to white sturgeon fishing because those are essentially  
11 targeting some of the larger females which are the most  
12 important of the species. You know, I think, again, this  
13 shows that there's a fair amount of support if we can  
14 actually target closures to help the species. There's  
15 support for that, but there is a lot of uncertainty about  
16 what that really means without putting some parameters around  
17 it.

18           So in conclusion, from the Club's perspective, we  
19 don't believe that sport fishing has really a material impact  
20 on this fish. We do support continuation of the ban on  
21 retention but, in general, don't believe that additional  
22 regulations or restrictions on fishing will be effective. We  
23 believe that the real attention needs to be focused on some  
24 of these other issues. I know we're going to get into that a  
25 lot more tomorrow. And the Coastside is absolutely

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1 interested in doing what we can to improve the science around  
2 not only green sturgeon, but white sturgeon and any of the  
3 other species of concern. And to the extent that we can,  
4 we'll facilitate data collection and help in analysis. We  
5 have some pretty bright folks.

6 That is it. Any questions?

7 MR. McLAIN: I'm just wondering what -- what we  
8 have to do to get you to collect that information and get it  
9 on the internet. That sounds like a great --

10 MR. DAVIDSON: It is on the internet.

11 MR. McLAIN: I mean the --

12 MR. DAVIDSON: It's not summarized.

13 MR. McLAIN: -- green sturgeon catch.

14 MR. DAVIDSON: We just need to talk about this. I  
15 gleaned this really from just doing a search on the fishing  
16 reports.

17 MR. McLAIN: Yeah.

18 MR. DAVIDSON: You know, it's free to join the  
19 club. We know we have Fish & Game members who are members.  
20 We know we have NMFS folks that are members, you know, who at  
21 least go through the boards and read the reports. They may  
22 not contribute, but they read them. The information is out  
23 there. If it's important enough, we can certainly, you know,  
24 more formally collect the information. I didn't go through  
25 anything trying to estimate, you know, what the -- what the

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1 catch rates were for these fish or what the ratio of green to  
2 white sturgeon catches were. Frankly, we have a lot of  
3 reports of white sturgeon; it would take a lot of work to go  
4 through those and pull out that information. But it's there.  
5 It's there.

6 MR. ISRAEL: I'm interested in what's the --  
7 because I don't really know too much about like recreational  
8 fisheries sort of fishing, but what's the general attitude  
9 towards like report cards where you might be able to actually  
10 detail like effort and gear and catch? Because it seems  
11 like -- you know, I mean 12,000 people -- or 600 people  
12 fishing over the last ten years is a lot of effort compared  
13 to some of the organized research that's ongoing.

14 MR. DAVIDSON: Right. And, again, you know, with  
15 12,000 members, there's not 77 percent of those that are  
16 sturgeon fishing in any one year, you know. It's just --  
17 it's in the hundreds, I would guess.

18 Attitudes on report cards, you know, we've talked  
19 about putting together templates for fishing reports for  
20 collecting data on the web site. It really hasn't gone that  
21 far. I think some people are just -- you know, have negative  
22 attitudes towards forcing them to do anything or forcing them  
23 to report any particular way. I have spoken with some of the  
24 charter boat captains about their reporting, you know, some  
25 of the tags or, you know, having an annual limit and using

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1 tags to report catches. I think there's a reasonable amount  
2 of support for that. I grew up fishing up in Washington for  
3 salmon, so I'm used to report cards. They have a punch-card  
4 system up there, and they've had that in place for years.  
5 The issues that I have personally with report cards or punch  
6 cards are what happens when they're not being submitted, what  
7 assumptions are being made about catches that -- I know in  
8 Washington at least during the time that I was up there, an  
9 unsubmitted card was assumed to be full. You know, that was  
10 30 fish that were assumed to be caught. And, frankly, I  
11 think most of the time it was just laziness or somebody lost  
12 their card. But to assume that 30 fish were caught because  
13 that's how many slots are on the punch card is not  
14 reasonable. And that was really the objection I had to it.  
15 I didn't have any problem with filling it out other than, you  
16 know, you'd better have a pen that works at that moment, or  
17 otherwise you're liable to get a ticket. So those sorts of  
18 things, if we can work them out, I don't think there's any  
19 specific problems with it. And, again, you know, gathering  
20 information I think is critically important.

21 Yes.

22 MS. WINDHAM: I wanted to -- I'm actually  
23 responding to Josh's comment.

24 Diane Windham.

25 At the Fish & Game Commission meetings last March,



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1 I believe it was, there was a number of private fishing  
2 parties and guide services that expressed a lot of interest  
3 in a report-card system as opposed to large closures and  
4 further restriction on their fishing activities. So I think  
5 there was probably a mixed audience on the report-card  
6 system. But certainly at the Commission meetings there was a  
7 lot of interest being expressed.

8 MR. HOLT: Buford Holt, Reclamation. Just an  
9 observation. Years -- some years ago we had a problem at  
10 some of our (unintelligible) natural oil and gas. We had two  
11 industries, the oil and gas geophysical industry and the  
12 fishing industry which needed to share information, but each  
13 had a concern that their competitors not get the information.  
14 And in that case, they got around that by setting up a  
15 clearinghouse where each party would notify the clearinghouse  
16 of their plans so that people that might be in conflict in  
17 the different industries could be put in touch with each  
18 other to work out their thing. It seems like that principle  
19 might have some flexibility here. I could see where a  
20 fisherman would be reluctant to give you full and attendant  
21 information less it reveal some proprietary interest,  
22 basically. But if that information were being gathered by  
23 somebody who has absolutely no interest in fishing, then you  
24 might get a better response. So there might be some parallel  
25 between the oil and gas and fishing experience and try

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1 something like that.

2 MR. DAVIDSON: I can tell you that before Coastside  
3 Fishing Club, getting realtime information on fish catches  
4 was nearly impossible. You could get something that was a  
5 week or two late or see it in the paper or one of the rags.  
6 And it took a lot of -- a lot of effort to convince people,  
7 you know, this information is good to have out there. It's  
8 valuable not only for the folks that want to fish the next  
9 day or two, but also in terms of gathering information that  
10 will be used, you know. And we actually developed a separate  
11 survey, again, going back to one of my earlier comments, on  
12 our rockfish effort and rockfish catches that were used to  
13 essentially prove the invalidity of a model that was being  
14 used prior to then to decide our seasons and to help validate  
15 a new model that I believe Fish & Game came up with, the CRS  
16 model, and essentially validated the assumptions. And the  
17 results of that model ended up replacing this prior flawed  
18 model.

19 So, you know, we understand, you know, that we  
20 are -- the lack of data is only going to hurt us in the long  
21 term, that there really is a focus on conserving and  
22 sustaining these fisheries. And the decisions are going to  
23 be made without good information, and we would like to  
24 prevent that if at all possible. Again, if these populations  
25 are really in trouble and something that we're doing is

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1 having an impact on them, you know, we want to know about it.  
2 We'll modify our techniques or we'll do something  
3 differently. But ultimately, you know, this isn't about me  
4 going out fishing next week; it's about, you know, my kids  
5 going out and fishing, you know, 20 years from now and their  
6 kids 40 or 50 years from now. That's really where our focus  
7 is.

8 Okay. That's it.

9 MS. NEUMAN: Thank you.

10 Okay. We have one more presentation before we wrap  
11 up our morning session and break for lunch. Ellen Johnck is  
12 here from the Bay Planning Coalition. And you might think  
13 that Ellen's presentation, entitled "Dredging 101," is a  
14 little bit out of place because she's focusing on dredging  
15 not recreational fishing concerns, but we do have a huge  
16 response to our request for presentations from recreational  
17 fishers. I think Pete really covered a lot. And we realized  
18 that we had to limit our agenda, and Ellen was willing to  
19 talk about dredging issues in the bays. And we thought it  
20 was an important issue to bring to the forefront and  
21 incorporate it into today's discussion. And I'm sure it will  
22 be interesting.

23 MS. JOHNNCK: Good morning. I was talking to David  
24 Woodbury, a person who I've spent a lot of time with. I'm  
25 from the Santa Rosa office, and David is one of my cohorts

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1 among several other state and federal agencies and  
2 stakeholders in the San Francisco Bay and working on the Bay  
3 and its services to the county, the environment, and the  
4 people. And David was saying, "Ellen, the green sturgeon is  
5 coming up as a major topic for consideration and study, and I  
6 want you to know that at the moment we think the green  
7 sturgeon is everywhere and ubiquitous." And I said, "What?  
8 How can this be? Does this mean Windows is moot?" Well,  
9 this is our environmental Windows program, which some of you  
10 may know about Windows, and others who may not so much. So  
11 I'll tell you a little bit more what we're doing with  
12 Windows. The thing is he said, "Well, no, no, no. We're  
13 going to give you an opportunity to figure this out and, you  
14 know, work together on it." So that's how all of a sudden  
15 here I am invited today and -- because we have quite a  
16 program in the Bay.

17 My topic, "Dredging 101," is also entitled "Sharing  
18 the Waterways," because I want to raise everyone's  
19 consciousness to the fact that we do share the waterways.  
20 And, of course, the National Oceanic and Atmospheric  
21 Administration is a division of the Department of Commerce.  
22 So of course we're sharing the waterways with commerce, we're  
23 sharing it with the Fish & Wildlife that are dependent, which  
24 we, the people, are dependent for our health. Our estuaries  
25 are the crucible of life in our waterways. So we want to do



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1 the best we can of sharing and working together to support  
2 all activities.

3           So the Dredging 101 is a very important slide.  
4 Let's see if I can get this here. You'll recognize the  
5 San Francisco Bay-Delta estuary. And what is important about  
6 this particular map is this dark, darkish-green coloring as  
7 you go through the estuary. This is, of course, the sediment  
8 flow from the Sacramento and San Joaquin Rivers into  
9 San Pablo and Central San Francisco Bay.

10           When I first came to the Bay in 1966, I worked for  
11 a state senator on much of the environmental legislation  
12 developing that in the sixties, and then I worked for the  
13 Interior Department before I came into the Bay Planning. I  
14 was on the Coastal Commission for many years as an appointee  
15 of three governors. There was about 60 to 80 million cubic  
16 yards of sediment flowing into the Bay at that time. Now,  
17 it's been reduced to now we're about 45 million cubic yards  
18 annual flow. And what this means is dredging. The sediment  
19 eddies, and a lot of it goes out the Golden Gate and  
20 disperses, but much of it stays in our harbors and channel  
21 areas. And from the Maritime Industry's perspective, the Bay  
22 is all about trade and commerce. And so we must keep our  
23 channels and harbors deep enough and have a sufficient draft  
24 for all manner of ethyl from the largest container ships to  
25 cruise ships to ferries, et cetera.

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1           So another important point about this sediment  
2 flow -- of course, this flow is the equivalent of our annual  
3 dredging requirement. It's interesting, in addition to just  
4 the flow, there's about a two-inch sedimentation just from  
5 around the shoreline on an annual basis. And we once  
6 calculated that. If that accumulation were allowed to happen  
7 without any dredging, within about five to seven years we  
  
8 would have the Bay bedload built up enough so it would really  
9 mean the end of deep-draft shipping as we know it today, and  
10 we'd end up with about a 25-foot average channel depth around  
11 the Bay.

12           Two-thirds of the Bay is less than 18 feet deep.  
13 That's another piece of geological information as the Bay has  
14 evolved over the years. Of course, in the gold-mining days,  
15 particularly hydraulic gold mining ended up adding a good  
16 three or more foot of bedload to the bottom of the Bay as  
17 well. There's a lot more geology we could get into.

18           So, by the way, something about this material:  
19 This annual dredging requirement of about 45 million cubic  
20 yards, this material is tested and -- this is maintenance.  
21 We call it maintenance dredging versus new work. We have one  
22 major new-work project, which is deepening the Oakland  
23 Harbor, going on right now. This maintenance material is  
24 tested to determine suitability for relocation, which is our

25 disposal, the forgotten stepchild of our industry. And 96

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1 percent of it, according to the agencies with whom we work  
2 with, is clean, suitable for, as we say, aquatic disposal --  
3 although we're doing a lot with re-use of it, and I'll talk  
4 about that later.

5           So let's move on. Dredging benefits: Trade and  
6 commerce. It's about a \$6 billion industry. The Maritime  
7 Industry and all the different kinds of activities associated  
8 with it, from not only container shipping, to all kinds of  
9 boat products, petroleum, oil, distribution and influx into  
10 the Bay, the aggregate industry, and the cruise industry. Of  
11 course, San Francisco, which was once the bastion for trade,  
12 less so today. Oakland really is our bulkhead port for the  
13 Bay. Dredging in those -- in that 4 percent of our  
14 maintenance requirement where we do find a toxic hot spot  
15 here or there, we -- over in Richmond Harbor, you may know  
16 that we had a couple of chemical companies that were  
17 manufacturing DDT in the mid, you know, 19th century.  
18 There's still some residue of DDT that has -- most of that  
19 has been cleaned up. But when we clean it up, we dredge the  
20 Bay. So we think that is an important factor for people to  
21 remember and be reminded. Of course, post Katrina, as you  
22 look -- read the papers, of course, people are now getting a  
23 clear understanding of how important marine transport and  
24 dredging to the support of navigation channels for safety is.  
25 We are now talking about expanding -- we started out with

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1 expanding our ferry system a few years ago as an option -- a  
2 commuter option. Now we're even looking at it to -- more  
3 reliance on it for support of mobilizing people in the event  
4 of a disaster. So we have to keep our channels clear for  
5 that. And then infrastructure construction, what I have  
6 called BART and the Golden Gate Bridge District are working  
7 constantly around the tube, particularly we're now  
8 retrofitting the BART tube, the East Bay Bridge for seismic  
9 safety retrofitting, a lot of dredging around the piers and  
10 areas. So the Bay -- we've got to take care of it. It's a  
11 major program.

12           And here is -- let's see -- a container ship coming  
13 in. The Port of Oakland under Bay Planning, since I've been  
14 working with Bay Planning for 23 years, when Bay Planning was  
15 first formed, the Port of Oakland was not barely 32 feet.  
16 Over the years, the shipping industry has been expanding the  
17 size of the ships to build an efficiency of scale for  
18 bringing cargo in. And we've now just about completed the  
19 50-foot project. We went from 32 to 38 to 42 to 50 foot  
20 which is was authorized about six years ago. This is what we  
21 call new-work dredging. It goes through a separate  
22 Endangered Species consultation. And for our maintenance  
23 dredging, though, we have a program, and I can talk about  
24 that.

25           Here's again -- you recognize our ferry building



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1 and the expansion of the Ferry Program as well as the cruise  
2 industry is really becoming the -- we call it the primary  
3 revenue support for the Port of San Francisco.

4 Here again, the bridge, just a reminder that  
5 dredging is needed to support all kinds of maintenance of the  
6 bridge under the water.

7 Here again, disposal is also the forgotten  
8 stepchild of dredging. Over the years, what's really been  
9 happening, as sediment is picked up and taken down stream, at  
10 one point there was a levee disposal site for the Bay. That  
11 was reduced to (unintelligible) in the mid 1970s with the  
12 Alcatraz site -- right between Alcatraz and the Golden Gate  
13 Bridge as one of the primary sites. There's three others  
14 within the Bay.

15 Now, we are presently under a plan which we  
16 developed to reduce the amount of material in the Bay and  
17 expand the amount of material that goes to what we call  
18 beneficial reuse. I think that really the 21st century is  
19 all about re-engineering and recycling, as you all are aware.  
20 And so we're applying that principle to mud. Wetland  
21 restoration, flood management for our levees, of course, is  
22 becoming even more critical. People are understanding about  
23 the need to renovate and rehabilitate the levees,  
24 particularly in the Delta. We also have quite an extant of  
25 levee systems in the Bay -- South Bay. And we are using

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1 material in a vast wetland restoration, 15,000 acres of cargo  
2 salt mine.

3 Here we go, this is -- sorry about this very small  
4 picture of one of our major beneficial reuse projects. This  
5 is Hamilton Army Airfield, which is a couple-thousand-acre  
6 wetland restoration. And hopefully if we get some issues  
7 settled with the last phase of the Oakland Harbor Deepening  
8 Project, material will start going to Hamilton Army Airfield.  
9 That will become a regional site for dredging material  
10 relocation.

11 Here again, reuse on the Delta levee. And what is  
12 interesting is our program, as we -- as we start to really  
13 embrace the whole concept of sharing our waterway for the  
14 economy, the environment, and people, the 50-foot project has  
15 enabled us to really -- for Oakland has enabled us to really  
16 look at how we're organizing the marine terminals for the  
17 most efficient distribution of cargo. What we discovered  
18 over in Oakland is that we could actually take material in a  
19 marine terminal reconfiguration, reapply it to the  
20 development of neo grassbed habitat and now also take  
21 material and re-shape a shoreline park right next to it. So  
22 this here again -- and, of course, then we have to figure out  
23 how to make sure the uses are compatible. Here is a picture  
24 of Mill Harbor Shoreline Park, all, again, related to the  
25 project which needs to be built in the harbor -- what are we

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1 going to do with 12 million cubic yards of mud  
2 (unintelligible). Here's another example of how we're  
3 cohabitating.

4           So getting into more of the specifics about what  
5 we're facing here with the green sturgeon and other  
6 endangered and threatened species, what we did in 1990 is to  
7 develop a better planning process. The Bay Planning  
8 Coalition -- "planning" is our middle name -- is really  
9 emphasizing the most collaboration and coordination that can  
10 happen. And my goal, since I've been working with the  
11 Coalition since 1983, our founding, has been to bring the  
12 agencies and industry and environmental organizations and  
13 fishery organizations together to really look at the permit  
14 process and with the goal that we could get our dredging done  
15 and we take care of our environmental compliance, and  
16 hopefully it provides an environmental stewardship in the  
17 process.

18           Our long-term permit process, long-term management  
19 strategy includes -- what we organized was a Dredge Material  
20 Management Office. And in the office -- it's run out of the  
21 Army Corps of Engineers, and EPA is a member of the team.  
22 NOAA Fisheries, Fish & Wildlife Service, Department of Fish &  
23 Game, the (unintelligible) Regional Water Quality Control  
24 Board, they sit together and review all -- on a regular  
25 basis, review the testing strategies and make disposal

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1 decisions.

2           We completed a plan to expand our disposal options  
3 by -- a 12-year process. At that time, NOAA Fisheries and  
4 Fish & Wildlife Service, Fish & Game conducted a programmatic  
5 consultation on the whole program to move material around and  
6 concluded that -- out of it, the result was what we call our  
7 Environmental Windows Program. And the Bay Planning  
8 Coalition, when we first were looking at how the Windows --  
9 the result of it was, we were pretty nervous because -- what  
10 we were nervous about was looking at the list of species, the  
11 multiple listings and the multiple time periods with their  
12 restrictions based on migration and presence. And it looked  
13 like we were only going to be able to get our dredging and  
14 disposal done on -- the shortest amount of time would have  
15 been about three months out of the year. And we thought we  
16 can't do it. How are we going to move and dispose of  
17 500 cubic yards of material in three months? And we knew we  
18 couldn't do it. So we said, well, we'll try. And what we  
19 did was -- this trying process is our Environmental Windows  
20 Program -- here again, the same agencies that are in the  
21 long-term Management Strategy Dredging Group. And we said,  
22 well, let's sit around the table and come up with a program.  
23 And we looked at the fact that this is really not just an  
24 environmental -- it's not just dredging versus the fish.  
25 This is really a planning issue. So why don't we help them



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1 understand what this really means. We have -- most of the  
2 dredging in the Bay is conducted and sponsored by the federal  
3 government. It's cost shared by our local entities. And so  
4 (unintelligible) arrive -- through the congressional  
5 discussion process, arrive on the Army Corps of Engineer's  
6 desk and spend money on the project until February. Then we  
7 do testing, permitting. The window for most issues -- for  
8 most work opens up in June.

9           What we have really come down to in all our  
10 planning is, okay, we try to get everything done we can --  
11 the money, permit, testing -- so that we're good to go  
12 June 1. And all work must be done by the -- the next time  
13 the window closes is about the end of November. So what  
14 happens if we don't get the work done? What is very  
15 important and what has been helpful for the fishery agencies  
16 is we've worked out an informal consultation process where  
17 we, here again, collect splashes of information to determine  
18 whether we are having -- whether we're having an impact on  
19 this particular species. And I guess what a lot of you are  
20 recommending here on the sturgeon is that we -- we would be  
21 very interested in, of course, having more scientific  
22 information. I can tell you more about the studies that we  
23 have done to determine and identify whether there are  
24 potential impacts of dredging on a particular species. So  
25 how it would affect the sturgeon and whether we could roll

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1 some of that work in to improve the sturgeon and what we're  
2 doing now would be helpful.

3           And then also the other idea is the whole  
4 consultation process. What we would really recommend is that  
5 the sturgeon be included in a program -- I mean dredging is a  
6 program. We've been able to work things out with the other  
7 endangered species to make sure that we both are compliant as  
8 well as have a little flexibility to make sure we can get the  
9 work done when we need to. So we plan. We plan. We have an  
10 organization. We have what we call a Long-Term Solutions  
11 Work Group, Short-Term, we have a Science Group, which is  
12 very key. I go to congress every year and get money for our  
13 science studies. We are looking at what we call Best  
14 Management Practices for dredging, how can we conduct it in a  
15 way that minimizes any impact. We also have a group called  
16 Compounding Factors. These are -- this all is vagaries in  
17 the permit process, and we -- that's a -- kind of an  
18 intriguing thing.

19           The Short-Term group that I have, here again, same  
20 agencies, we put all dredging projects on a list, about 100  
21 maintenance dredging projects in the Bay we've identified per  
22 sponsor, for harbor area, for marina. And we look at these  
23 on a -- every six weeks, and how are we doing? Are we headed  
24 towards June 1? We're now June 1 tomorrow. How are we doing  
25 so far? Are our permits lined up? Do they have the money?

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1 And we follow that process throughout the year to make sure  
2 we can get all the work done when we need it.

3 Our goals right now on this Environmental Windows  
4 Program, which I -- here again, I would hope the green  
5 sturgeon is just -- somehow rolled into this and we can work  
6 this out so we can still get our work done. We were  
7 fortunate that the House of Representatives in our energy and  
8 water mark-up just a couple weeks approved \$2.5 million for  
9 2007. That is our long-term management strategy funding,  
10 which includes scientific studies for our Environmental  
11 Windows Program. And one of those studies, by the way, is a  
12 Salmon Tagging Study. We've also been looking at the impact  
13 of plumes from the dredging, and some of this is now being  
14 recorded. And we're trying now to incorporate and synthesize  
15 the information that we have from the studies into decision  
16 making.

17 So our achievements for the last three years, we've  
18 received congressional funding for studies. Bay Planning was  
19 selected for NOAA's Marine Transportation Partnership  
20 Program, our Best Management Practices. We've done quite a  
21 good job about getting the information out to all of the  
22 dredging sponsors on what -- on any consultation that has to  
23 be done in what we call a restricted period. And we've  
24 pretty much narrowed it down to a 30-day informal  
25 consultation, which would be really important not to have to

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1 have 135 days. So -- and what we've achieved here, too, is,  
2 again, collaboration among the agencies and the stakeholders.

3 From a baseline standpoint, my group with about 200  
4 members from Bay Planning. We're non-profit (unintelligible)  
5 representing a couple hundred employers in the Bay from the  
6 ports to the -- essentially most of the people with the docks  
7 and a major program of bringing cargo into the Bay. We have  
8 a number of recreational users as well, local governments  
9 that support their local marinas. And we really try to work  
10 in collaboration and coordination with everybody. And I  
11 think a key piece of our program now is we're really trying  
12 to get ahead of the curve to do more stewardship and to help  
13 build the scientific basis and foundation for any of our  
14 environmental work so we can do a better job of sharing the  
15 waterways.

16 And I'd like to thank the agency who contributed  
17 some of the photos for the program.

18 If you have any questions or if I missed anything,  
19 let me know. Thank you.

20 MS. NEUMAN: Thank you, Ellen.

21 Do we have any questions for Ellen?

22 Ellen, I guess we'll be getting into this a little  
23 bit later, but I am interested in hearing about what some of  
24 the direct and indirect impacts of dredging on sturgeon are.  
25 I think that that's a big question at least for me. And I'd



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1 also like to talk more maybe this afternoon about where  
2 exactly dredging activities are occurring. I'm assuming  
3 there's -- it's primarily Bay activity, but I don't know  
4 whether there's any in-river dredging that goes on as well.  
5 And so obviously we should talk about that and how -- how  
6 dredging and life history of green sturgeon are going to be  
7 coming together here where there's direct overlap and  
8 indirect overlap. I think that's going to be an important  
9 discussion maybe for this afternoon, maybe during a  
10 break-out.

11 MS. JOHNNCK: Good. Okay.

12 MS. NEUMAN: Okay. Thanks, everybody, who  
13 participated this morning. I think we have a lot of raw  
14 material for some good discussions this afternoon.

15 And, again, we -- Susan and I sort of left it up in  
16 the air as to what our format might be for this afternoon,  
17 whether we would break out into smaller groups and talk about  
18 those focus questions with regard to specific activities, or  
19 whether we should stay together -- we don't have a very large  
20 group, actually, in total -- and start generating ideas  
21 together as a group.

22 So does anybody have a strong opinion on that? I  
23 guess ultimately, you know, we NMFS folks can make a  
24 decision, but does anybody have a strong opinion on whether  
25 we stay together or break apart?

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1 UNIDENTIFIED SPEAKER: I suggest you make that  
2 decision after lunch after we see who comes back.

3 MS. NEUMAN: Okay.

4 MR. McLAIN: Just a thought, if we don't break out,  
5 then your reporter will be able to capture the one and only  
6 conversation.

7 MS. NEUMAN: Right. We did talk about that. And  
8 we talked about how if we did break out, we would have our  
9 NMFS -- whoever our NMFS leader for that break-out take  
10 notes, and then we would submit that to Sandy, and she would  
11 attach them to the report.

12 MR. McLAIN: She probably takes better notes than  
13 we do.

14 MS. NEUMAN: I'm sure she does.

15 Okay. Just a couple of other items. We have an  
16 hour for lunch. We'll take an hour from now, so let's say --  
17 it's 12:15, so we'll meet back here at about 1:15. I do  
18 encourage all of you to come back. We need your ideas. We  
19 need your input. The second half of this day is about your  
20 input. We're not going to do much talking at all. Okay?

21 There's a map at the back of the room of -- I guess  
22 it's the downtown area of Sacramento. And there are a  
23 variety of lunch options. I think there's a little blurb  
24 back there on one restaurant along the river front.

25 But, Jeff, do you have any recommendations for

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1 places where people can lunch? I think everybody's pretty  
2 local, so you probably know where you're going. I don't, but  
3 you do.

4 MR. McLAIN: Yeah, if anybody has any particular  
5 wants, we'll try and find where you should go.

6 MS. NEUMAN: See Jeff for a lunch recommendation.  
7 He'll direct you. There is a mall with a food court -- I  
8 don't know where -- L Street, K Street?

9 MR. McLAIN: By Macy's, yeah.

10 MS. NEUMAN: Okay.

11 (Lunch recess.)

12 MS. NEUMAN: Okay. So the point of this afternoon  
13 is to start generating lists of activities and ways to modify  
14 those activities if we feel that they affect green sturgeon  
15 in such a way to allow conservation of the species, identify  
16 those activities that are already providing some kind of  
17 conservation advantage to green sturgeon. And we're going to  
18 spend about 20 minutes or so on each of the questions. Okay?  
19 We're starting a little bit late. So instead of -- we may  
20 eliminate some of those breaks, too, depending on how much  
21 energy we all have. Cookies and M&Ms at the back of the  
22 room, so that should help.

23 Okay. So our first question is, "What activities  
24 or programs exist that might directly or indirectly affect  
25 the Southern DPS of green sturgeon?" Don't forget Josh's

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1 presentation. And there may be some things going on within  
2 the boundaries of the Northern DPS that are affecting the  
3 Southern DPS, so we are planning on having a workshop up in  
4 Astoria at one point. But we can start generating just our  
5 list of ideas here even if they cross boundaries. Okay?

6 Just, basically, Sandy, you need everybody to  
7 identify themselves if they shout an activity?

8 THE REPORTER: I really do.

9 MS. NEUMAN: Okay. And Susan's going to be  
10 recording those activities in front of us as we list them.  
11 These are Post-It pads, so as she fills them up, I'll find  
12 some area for her to put them, and we'll keep going. Okay?

13 MR. GINGRAS: Are we going to touch on all programs  
14 or just fishing-related programs or --

15 MS. NEUMAN: You know, I -- I feel like we should  
16 touch on all programs, because we might not maximize our time  
17 and knowledge in this room if we only focused on fishing  
18 activities at this point. So we can maybe make sure we cover  
19 the fishing activities base, but we can move beyond that.

20 Susan, did you want to create a parking lot maybe  
21 for any non-4(d)-rule related things that may come up.

22 MR. HOLT: I'll start with something. Buford Holt,  
23 Reclamation. One thing that's on my mind, I was kind of  
24 wondering about our gravel-injection programs that we have  
25 that are ongoing now. After all, reservoirs block downstream



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1 movement of spawning grounds. And we've been putting gravels  
2 in on a regular basis below Shasta and Whiskeytown Dams in  
3 this size to -- in the optimum size for chinook. I don't  
4 know, are we -- should we be thinking about a different-sized  
5 gravel or augmenting that in some way to accommodate green  
6 sturgeon? And it's just a question. I'm not looking for an  
7 immediate answer, but that was one that -- it might be worth  
8 looking at if we can benefit the sturgeon a bit further, or  
9 is there a need for that?

10 MS. WANG: Gravel injection?

11 MR. HOLT: Gravel injection. Or you could call it  
12 gravel replacement, however you want to.

13 MS. NEUMAN: Any responses or input on gravel  
14 injection?

15 MR. McLAIN: At this point my thought is that, that  
16 could impact the pools that we think may hold more indoor  
17 spawning if you're filling them or you're doing anything like  
18 that.

19 MR. HOLT: What we found works for us primarily is  
20 to back dump trucks up to the edge of a bluff or something  
21 and let the river move it. Fish & Game tried placing some  
22 gravel in the bedding area years ago, and it got quickly  
23 redistributed anyway. So we find it's the cheapest and  
24 probably the smartest way to do it and the simplest is to put  
25 a big pile there and let the river move it. So it would

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1 probably fill or not fill holes depending what the river  
2 does.

3 MS. NEUMAN: So there could be a conservation  
4 advantage there if the gravel size being placed there was  
5 appropriate for green sturgeon spawning.

6 MR. HOLT: If we need cobbles instead of -- more  
7 cobbles instead of gravel, we could take that into the  
8 treatment.

9 MS. NEUMAN: Right. But there could be a balance  
10 side of that.

11 MR. HOLT: Just something to think about.

12 MS. NEUMAN: Okay.

13 MR. GINGRAS: I sense, and Josh is probably more up  
14 on the literature than me, but I don't think we really know  
15 what the substrate requirements are for green sturgeon  
16 spawning: Flow load, successful incubation of the eggs.  
17 There's developing literature. A lot of these telemetry  
18 studies are, you know, trying to show, well, sturgeon go  
19 here. My notion is that we probably don't know enough to  
20 know whether that would be feasible, certainly. So we need  
21 to do some research along those lines.

22 MR. ISRAEL: Sorry, go ahead.

23 MR. HOLT: Well, there are certainly  
24 temperature-control problems that we have for the benefit of  
25 chinook judging from what was written in the Federal Registry

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1 Notices. It has fortunately benefited all, so it's working  
2 out for the green sturgeon.

3 MS. NEUMAN: Temperature-control devices.

4 MR. HOLT: Has the green sturgeon ever been found  
5 in the Trinity River very much, or is it mainly in the main  
6 stem of the Klamath?

7 MR. ISRAEL: The Trinity River also has spawning  
8 fish in it up to above Willow Creek.

9 MR. HOLT: Okay. (Unintelligible) the Southern  
10 Population, but we do, of course, have a larger program for  
11 restoration there that's focused on chinook at this point.  
12 But it might be prudent to think about maybe a proactive way  
13 (unintelligible) should be done for that -- for the sturgeon.

14 MS. NEUMAN: The angle of those restorational  
15 activities in the Klamath are to improve flow?

16 MR. HOLT: Well, they're augmenting -- restoring  
17 some of the flows and trying to mimic the natural habitat  
18 more. But they're also doing some in-stream work with the  
19 geomorphologic beds now. Because when we first put in Trinity  
20 Reservoir and started exporting water to the Sacramento  
21 Valley, the flows in the stream dropped enough that they were  
22 getting encroachment vegetation which changed the dynamics of  
23 things. So part of it was physically changing the stream  
24 plants (unintelligible) the program focused on salmonids.  
25 But if it would keep something going downhill, it's worth

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1 thinking about that. That's not a Southern Population issue,  
2 though. Do we have something there? We have -- I think  
3 (unintelligible) rapid growth. And I don't know whether that  
4 would increase the spawning -- access to spawning habitat for  
5 sturgeon or not. But, again, that (unintelligible) growing  
6 population.

7 THE REPORTER: Just a reminder, everyone please  
8 speak up. I'd really appreciate it. Thank you.

9 MR. GINGRAS: Jeff probably is familiar with -- I  
10 think it's in AFRP's list of actions -- recommended actions.  
11 I should have brought it. They've got a bunch. It's my  
12 recollection it's flow -- flow and temperature are a couple  
13 of the big ones. Do you remember?

14 MR. McLAIN: I think flow was a big one and --

15 MS. NEUMAN: And -- and -- and it's sort of this  
16 blanket activity, restoring flow to --

17 MR. McLAIN: They might have specific flow targets  
18 in there.

19 MS. NEUMAN: Okay.

20 MR. McLAIN: Maybe we want to just add AFRP  
21 doubling goals, and then you can refer to that at another  
22 point.

23 MS. NEUMAN: Okay.

24 MR. McLAIN: Because there are quite a few of them,  
25 I think.



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1 MR. GINGRAS: Right. Yeah.

2 MR. DAVIDSON: So is that related to just the  
3 volume of flow or the timing of it or both?

4 MR. McLAIN: Well, I think -- yeah -- and there's  
5 passage issues, temperature issues, contaminants.

6 MR. GINGRAS: Exotics, I think, are in there.

7 MR. McLAIN: Exotics. This was done in the mid  
8 nineties, and it was a pretty clear opening at the time.

9 MS. NEUMAN: Okay.

10 MR. GINGRAS: This came up recently, fishing  
11 passage associated with the bypasses on the Sacramento River.  
12 White sturgeon at least in fair numbers on a pretty much  
13 annual basis, maybe more than one time each year getting  
14 stuck there as the bypasses are de-watered. So to the extent  
15 that green sturgeon are in the same river reach during the  
16 bypass periods, they wouldn't be exposed to the same sort of  
17 risk. And there are actually -- Region 2, I think, and maybe  
18 Region 1, but for sure Region 2, they occasionally do fish  
19 rescues, including rescue of sturgeon. So they would need  
20 take at least, but this would be, you know, an incidental  
21 take authorization. They would go and physically corral  
22 sturgeon that seemed to be fairly vital still versus the ones  
23 that they found that are dying or dead. Corral them, pick  
24 them up, move them to a data-gathering station, and then move  
25 them into the river. This year, I think -- or it might have

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1       been very late in 2005, I think they got like 25 white  
2       sturgeon. I don't remember ever hearing about green  
3       sturgeon, but it's possible.

4                   MS. NEUMAN: Now, these kinds of issues are  
5       particularly important in wet years, correct? Is that  
6       when --

7                   MR. GINGRAS: Correct.

8                   MS. NEUMAN: -- these bypasses fill up and  
9       entrain --

10                  MR. GINGRAS: Right. Right.

11                  MR. HOLT: And there are passes (unintelligible)  
12       sort of things. When the water gets to a certain level, it  
13       overflows. The whole idea is to release the system. And to  
14       some degree, they were a natural sort of thing. The Sutter  
15       Bypass area, it's always been there. But if you need to know  
16       anything about that one, Paul Ward, Fish & Game, is the guy  
17       to talk to. He knows that area intricately. It's been our  
18       most successful chinook -- spring-run chinook restoration  
19       effort. And so there's been a lot of improvements. So it's  
20       probably less of a problem than it used to be.

21                  MR. GINGRAS: We don't even know -- we know that  
22       the fish are there, but we don't know whether they came from  
23       downstream to upstream and stopped or whether they went over  
24       heading downstream and became trapped. So, again, there's  
25       actually ongoing investigations into how those fish get there

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1 and what's their fate. We were going to tag as many as we  
2 got this last time, but as much bypass as there had been in  
3 this most recent big flow episode, they saw one fish.  
4 Strange.

5 MR. NEUMAN: But that's basically a dead end. I  
6 mean there's no way out?

7 MR. GINGRAS: It is when the flows are receding and  
8 the flows get to a certain point. Aside from that, it's just  
9 another waterway.

10 MR. HOLT: The salvation may be that the bypasses  
11 that are in use are functioning mainly in the wintertime,  
12 whereas these fish -- Jeff this morning stated that they'd be  
13 moving upstream more --

14 MR. ISRAEL: Right.

15 MR. HOLT: -- and after those winter floods have  
16 subsided some. So it may not be a terrible problem.

17 MR. GINGRAS: Just -- yeah, typically. But they do  
18 start coming up -- well, green sturgeon -- white sturgeon and  
19 green sturgeon are around in November, you know. So it  
20 potentially is a big -- and my point here is not just that  
21 it's, you know, fish passage (unintelligible), but there is a  
22 program to rescue these fish, and that would be coverage.

23 MR. McLAIN: Is there any information on the past  
24 catches, any written up on that, do you know?

25 MR. GINGRAS: DWR, you guys did something.

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1 MS. SEEHOLTZ: Yeah, I've been telling them  
2 (unintelligible) the Yolo Bypass.

3 MR. OPPENHEIM: I have a record of the last 10, 15  
4 years.

5 MR. McLAIN: Of rescues?

6 MR. OPPENHEIM: Rescues average --

7 MR. McLAIN: Oh, that's averaged. Could we get  
8 that?

9 MR. OPPENHEIM: Yeah, okay. It's usually done by  
10 Fish & Game when they put the ladder in or take it out. They  
11 rescue the fish at the same time, the ones that are stuck in  
12 there.

13 MR. McLAIN: Is that one particular bypass or all  
14 of them?

15 MR. OPPENHEIM: That's -- the only one I have is  
16 Fremont Weir. (unintelligible) Weir is just as bad. I don't  
17 have any records for that.

18 MS. SEEHOLTZ: And just recently within the past  
19 week or so, there has been discussion or tentative agreement  
20 that there's going to be fish passage put in the Fremont Weir  
21 where they're discussing ways to do it. I don't know if they  
22 were doing a study on the sturgeon passage and maybe  
23 (unintelligible).

24 MR. HOLT: And the fish-screening program where  
25 CalFed offered that, that was certainly one that would affect



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1 the salmon and be affected by -- potentially by salmonids.  
2 Whether the criteria for a screen -- it's like we've got two  
3 components here: One is the hazard where sturgeon are  
4 obviously in front of the screen, whether they could be  
5 adequately screened out or not, and secondly is -- a piece of  
6 it is exposure; are they likely to be there in the first  
7 place, in which case, if they're not, we don't have to worry  
8 about it.

9 MS. NEUMAN: So we're talking about the -- mostly  
10 the installation of screens at diversions? Is that the  
11 activity?

12 MR. HOLT: And the adequacy of existing ones.  
13 Something's come out this morning, the data was a long series  
14 of which the larvae forms of green sturgeon apparently are  
15 insensitive (unintelligible), the largest diversion on the  
16 river coming out, the cfs. It's appropriately screened now  
17 for chinook, and that doesn't work for sturgeons. We've got  
18 extra expense there.

19 MR. KEEJAN: Has anything come out of the 31680  
20 (unintelligible) studies, you know, the best available  
21 technology, you know, that's happened recently in the last  
22 few years, you know, with power plants -- take power plants,  
23 things like that? I'm just curious. I worked on those in  
24 the seventies, but I don't know what's happening now in  
25 particular with, you know, for instance, sturgeon eggs and

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1 larva in the Delta in particular. I don't know.

2 THE REPORTER: Could I just have your name?

3 MR. KEEJAN: Oh. Tom Keejan, ECORP Consulting.

4 Sorry.

5 THE REPORTER: Thank you.

6 MR. McLAIN: Could you mention the studies again  
7 for me?

8 MR. KEEJAN: Well, I mentioned entrainment studies,  
9 you know, that -- the power plants in particular --

10 MR. McLAIN: Okay. At (unintelligible).

11 MR. KEEJAN: Yeah.

12 MR. McLAIN: We're just getting back into that  
13 information right now.

14 MR. KEEJAN: That might be very valuable.

15 MR. McLAIN: Yeah.

16 MR. KEEJAN: (Unintelligible) sturgeon, you know,  
17 in the seventies.

18 MR. HOLT: Place those slats on the salt ways, so  
19 if the animals are (unintelligible) and you had salt ways, it  
20 would be maximum exposure.

21 MR. KEEJAN: You know, get the little flow, you  
22 know, summertime (unintelligible) anyway on the state and  
23 federal projects. Seems like the information you were  
24 providing we're not getting recruitment into smaller -- in  
25 the minimum length range of the slot, and that would kind of

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1 indicate that we do have a recruitment problem, some in the  
2 early life stage.

3 MR. DAVIDSON: And what we're seeing -- you know,  
4 at least in our bycatch is mostly smaller fish. So I don't  
5 know what -- a two-foot sturgeon is three years old, two  
6 years old?

7 MR. McLAIN: Three, four.

8 MR. KEEJAN: For all we know.

9 MS. LIU: I'm not too sure --

10 THE REPORTER: I'm sorry, you're going to have  
11 speak up.

12 MS. LIU: My name is Qinqin Liu.

13 THE REPORTER: And I can't really hear you, so can  
14 you move up closer?

15 MS. LIU: I'm from Fish & Game. My name is Qinqin  
16 Liu. Can you hear me?

17 THE REPORTER: Barely.

18 MS. NEUMAN: Come in closer.

19 MS. LIU: Yeah. So I'm from Fish & Game. My name  
20 is Qinqin Liu. And I know right now in Sacramento, you know,  
21 like watershed, there's a lot of flood control agenda,  
22 there's a lot of sturgeon there, and they need coordination  
23 that -- to see how that will impact this -- you know, for  
24 sturgeon -- also a lot of sturgeon. So how can we plug that  
25 into our software-planning process to prevent something --

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1 because flood control can be very big.

2 MS. NEUMAN: Qinqin, flood control, you're talking  
3 about, what, stabilizing river banks and --

4 (Multiple speakers.)

5 MS. LIU: River banks, all kind of program  
6 (unintelligible) will have more to say. But I know there's  
7 lot's going on, there's lots of money, there's lots of -- all  
8 these prior -- so I think I might also bring tomorrow.

9 MS. NEUMAN: So some future activities that we  
10 should be thinking about. There are some bank stabilization  
11 and riprap and --

12 MR. McLAIN: Yeah, is that what you're referring  
13 to?

14 MS. LIU: Yeah. There's also -- there's an agenda  
15 to build new dam or not, new channel or -- all different  
16 options is in the air.

17 MR. McLAIN: Okay.

18 MR. DAVIDSON: Also, Delta water exports and the  
19 pumps.

20 MS. NEUMAN: So the pumps themselves --

21 MR. DAVIDSON: Well, obviously they're exporting a  
22 lot of water, a huge volume of water. We're seeing  
23 documented saltwater intrusion farther and farther up the  
24 lower Delta. In fact, halibut even was caught last year up  
25 near Pittsburgh, you know. It's pretty far. In fact, there



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1 was a leopard shark caught in Sacramento last week. So just  
2 the exports in this one issue -- the pumps, that just chews  
3 them up, it's my understanding. Once they're pumped out, I  
4 don't know if we can even count them anymore. I'm not sure  
5 if they just go into the canals and those fish are gone.

6 MS. NEUMAN: Uh-huh.

7 MR. ISRAEL: This is really getting into No. 2,  
8 relating to the water exports. But as far as sort of the  
9 ecosystem impacts of the water divergence related to  
10 predation and foraging that could be an impact on juveniles  
11 not having enough food, that could be a limiting factor. I  
12 don't know. It's something to consider as far as if there's  
13 a limiting-factor analysis completed. Is foraging a limiting  
14 factor for the juveniles?

15 MR. DAVIDSON: What do we know about what they eat?

16 MR. ISRAEL: They're probably eating some kind  
17 of --

18 (Extraneous noise.)

19 THE REPORTER: Excuse me, they're probably eating  
20 some kind of -- what?

21 MR. ISRAEL: Invertebrates and possibly small fish.

22 (Extraneous noise.)

23 MR. DAVIDSON: We're seeing some of the  
24 (unintelligible) grass shrimp which is real popular as  
25 sturgeon bait becoming harder and harder to even find. And I

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1 don't know how much of it is (unintelligible) and planktons  
2 and things that they're eating, it's just not there. And  
3 we're hearing about the collapse of the food web, whether  
4 that's contributing to the grass shrimp to decline as well.

5 MS. NEUMAN: Josh, can you repeat that again and  
6 state it as an activity, if you could.

7 MR. ISRAEL: Well, they're interactive facts  
8 related to water exports. So it's more to what types of  
9 affects do these activities -- it's really --

10 MS. NEUMAN: Right. Okay. So let's hold off for a  
11 second because we'll come to this list when we get to  
12 question No. 2. Let's just -- I think -- yeah, we're sort of  
13 talking about what the effects of these activities are going  
14 to be. Let's just focus on the activities themselves. We'll  
15 get to --

16 MS. SEEHOLTZ: Alicia Seeholtz. Would Ellen's  
17 dredging fall into foraging?

18 (Extraneous noise.)

19 MS. SEEHOLTZ: Because I notice that she said that  
20 their free time to dredge was from June through November, but  
21 Marge is saying that they're going out and going to capture  
22 the green sturgeon in August, which happens to fall right in  
23 between their dredging time.

24 MS. NEUMAN: Right. So dredging.

25 MR. DAVIDSON: As far as I know, some of the dredge

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1 spills are dumped off shore. I have no idea what certain  
2 impact that might have. It certainly dirties the water.

3 MR. HOLT: Would tariffs be given to a distinction  
4 between dredging -- would there be a big difference between  
5 dredging in San Francisco Bay, which is way downstream, and  
6 perhaps -- or I expect it could be important at least, as  
7 opposed to the Stockton Ship Canal up near Sacramento or  
8 something? It's like the further upstream you are, the  
9 tighter the window might turn out to be. I don't know. Not  
10 all dredging is the same, timing and...

11 MR. GINGRAS: We have, of course, projects to  
12 research in monitoring on the status of green sturgeon  
13 populations.

14 MS. NEUMAN: So Cal Fish & Game research and  
15 monitoring.

16 MR. ISRAEL: I think some of the commercial bycatch  
17 activity in the northern area might be significant.

18 MR. DAVIDSON: I'm not even sure that it's that  
19 significant down here. We have a near-shore bottom trawler  
20 fishery --

21 MR. ISRAEL: Right off the coast.

22 MR. DAVIDSON: Right off San Francisco Bay for flat  
23 fish.

24 MR. ISRAEL: Within the 100 meter -- basically,  
25 fishing within the 100 meter bottom.

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1                   MS. NEUMAN: I didn't introduce Leslie to everyone  
2 here, but she works for Industrial Economics, and we are  
3 going to be working with Leslie on the economic-impact side  
4 of our 4(d) rule and critical habitat designations. And  
5 we're actually asking Industrial Economics to consider  
6 fisheries in coastal areas out to 100 meters. So we're  
7 making sure fishing that's occurring -- taking into  
8 consideration the economic side of things, but also we're  
9 thinking about it in terms of impacts to green sturgeon.

10                   MR. HOLT: Well, there's EPA Pollution Control  
11 Programs that could impact by doing their -- pulling away  
12 from things like trying to take iron out of mines, copper  
13 cadmium, zinc in the river. The years we've had of selenium  
14 and what do you do with the -- you have selenium coming out  
15 of the refineries there at Richmond and San Francisco Bay,  
16 but we've also been fussing for a long time on what we do  
17 with the stuff on the west side of San Joaquin Valley. We've  
18 got mercury concerns and programs trying to address mercury  
19 in the Sacramento Valley. And then the thing that strikes me  
20 that's interesting is you talk about the grass shrimp.  
21 There's something -- it seemed like the -- I was struck some  
22 years ago with what seemed like -- to the classes for the  
23 Delta fisheries seemed to sort of corresponded to, you know,  
24 some of these things in the last ten years ago, the  
25 imposition of the prohibitions on burning on the rice crops,



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1 that farmers, you know, now have to hold the water on the  
2 fields longer to try and let pesticides degrade before it  
3 gets into the river. We had to flood out and stuff and try  
4 and decompose (unintelligible) and try to solve an  
5 air-pollution problem and a pesticide problem, and it seems  
6 to me that we could have caused a fish food problem by  
7 changing or reducing the volume of small invertebrates and  
8 stuff coming off those rice fields. Remember, historically,  
9 the Central Valley used to flood every winter. There were  
10 vast marshes and wetlands there, and the fish could  
11 potentially be moving out foraging and stuff carrying off  
12 those things. And now we manage it differently, partly in  
13 response to regulations at a cost to the farmers -- this is  
14 just an economic thing, but it may just also be a cause to  
15 the fisheries, too. I don't know. That's speculative.

16 MS. NEUMAN: You haven't been introduced, but  
17 Leslie Genova.

18 MS. GENOVA: You're sort of bringing up issues of  
19 land-based activities. And I would just -- we hadn't really  
20 mentioned this, but I know our -- at least a concern for  
21 salmon like -- well, I mean I guess there isn't a whole lot  
22 of logging and things like that going on around here, but  
23 maybe there are other land-based things that are a concern  
24 that cause sedimentation like (unintelligible), I assume  
25 would be one and housing development stuff.

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1                   MR. HOLT: Fire suppression is one, too, because  
2 now it's a question of -- it's not really a question of  
3 whether you're going to have a fire, but how, when, how often  
4 and how big. And my understanding from talking with Charles  
5 Skinner, a fire specialist at the Forest Service up in  
6 Redding, that when he was working for (unintelligible) on the  
7 Smith thing, the program that -- we were talking one day  
8 about Mill and Deer Creek, two of our most nearly pristine  
9 streams in Sacramento. And now that I mentioned that, Carl  
10 said something about (unintelligible), it's interesting  
11 because it's nearly one of the most pristine with respect to  
12 the Fire District, too. And -- so in our attempts to protect  
13 forest and human exploitation, we've obviously turned them  
14 into enormous fire traps. And it also, I think, increases  
15 the risk of episodes of sedimentation. So I'm not sure if  
16 NMFS can do much about all those things, but looking  
17 societally there needs to be a discussion.

18                   MS. NEUMAN: We should be wrapping up responses to  
19 question No. 1. We're still on question No. 1.

20                   MS. GENOVA: What about, is there much interest in  
21 non-mining activity, like section dredging and the  
22 small-scale kind of stuff? Does that happen in Sacramento  
23 or --

24                   (Multiple speakers.)

25                   MR. HOLT: There's been gravel mining. And some of

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1 the trips, Fish & Game's been trying to suppress that by  
2 having (unintelligible).

3 (Discussion held off the record. Reporter  
4 reminded everyone to please speak up.)

5 MR. McLAIN: Just a clarification on that, then.  
6 In the tributaries, but not necessarily in the main stem  
7 Sacramento and --

8 (Multiple speakers.)

9 MR. McLAIN: What about in the Feather River, do  
10 you know?

11 MR. HOLT: I have no knowledge of that.

12 MS. SEEHOLTZ: Gravel mining?

13 MR. McLAIN: In the main stem.

14 MS. SEEHOLTZ: Well, there's granite like right  
15 out -- that's spread out in the low-flow channel. So...

16 MR. McLAIN: Okay.

17 MS. LIU: So one way you should probably be  
18 concerned (unintelligible) sturgeon in (unintelligible).

19 MS. NEUMAN: So introduction of exotics --

20 MS. LIU: Yeah, (unintelligible) California  
21 waterways, especially fisheries is very critical.

22 MS. GENOVA: Are there particular species that are  
23 most concerned for --

24 MS. LIU: There are lot of problems, big list of  
25 fisheries --

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1 (Multiple speakers.)

2 MR. DAVIDSON: One is clams -- one of the clams  
3 is --

4 (Multiple speakers.)

5 MS. LIU: It's the fish --

6 (Multiple speakers.)

7 MS. NEUMAN: Striped bass, apparently, like to eat  
8 little green sturgeon. I don't know. That's what I've  
9 heard.

10 MR. HOLT: Striped bass used to be a heavy --

11 (Multiple speakers.)

12 MR. HOLT: Chinook at the diversion dams.

13 MR. DAVIDSON: But striped bass have been around  
14 for 100 years. They didn't cause this. They may contribute,  
15 but they didn't cause it.

16 MS. NEUMAN: Right. And, remember, we're trying to  
17 focus on -- I know everybody's -- we're raising the issue of  
18 threats, what threatens the green sturgeon, but we really  
19 should focus in on activities and programs, things -- I mean  
20 we're not discounting what predation or disease may do with  
21 regard to green sturgeon, but let's try and focus on the  
22 activities that are causing the introduction, I guess, of the  
23 exotic or the disease because those are the things we'll be  
24 able to regulate better or --

25 MR. DAVIDSON: You should balance --



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1 (Multiple speakers.)

2 MS. NEUMAN: Balanced.

3 MR. OPPENHEIM: One more program, the waterways,  
4 herbicide spraying program.

5 MS. NEUMAN: Herbicide spraying?

6 MR. OPPENHEIM: That's one thing we regulate. But  
7 we've not looked at green sturgeon impacts. And it's  
8 something that we do every year. It's a fish that we could  
9 probably get information on, but I don't think it's included  
10 in the BOL.

11 MS. NEUMAN: Okay.

12 MR. GINGRAS: One more. The Fish & Game  
13 Commission's regulations on recreational harvesting sturgeon.

14 MS. WINDHAM: Melissa, I was going to add that --  
15 it actually kind of (unintelligible) in all of these that are  
16 being listed is water quality control, whether it's runoff  
17 plants from commercial development or outfalls, there's  
18 different avenues this might take, and much of it's  
19 controlled by the Regional Water Quality Control Board and  
20 State Water Control Board. So we have -- we have limited  
21 affect, the agency does, because it's controlled by the  
22 state, but we can at least provide information in hearing  
23 testimony and so forth.

24 MS. NEUMAN: Those are the state water contractors  
25 who --

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1 MS. WINDHAM: Water Quality Control Board.  
2 MS. NEUMAN: Water Quality Control Board.  
3 MS. WINDHAM: State water contractors --  
4 (Multiple speakers.)  
5 MR. McLAIN: Yeah, we'll talk to them tomorrow.  
6 MS. WINDHAM: It's a water quality issue.  
7 MR. McLAIN: Their attorneys will be here tomorrow.  
8 MS. NEUMAN: Do they have any biologists?  
9 (Multiple speakers.)  
10 MR. McLAIN: They will be here tomorrow.  
11 MS. WINDHAM: They'll be here tomorrow.  
12 MR. DAVIDSON: What about the Marine Mammal  
13 Protection Act as a program?  
14 MS. NEUMAN: The Marine Mammal Protection Act.  
15 MR. McLAIN: Can we add CalFed, too?  
16 MS. NEUMAN: CalFed.  
17 MR. HOLT: (unintelligible) goes along with CalFed.  
18 MR. McLAIN: I think we mentioned Dave Artie  
19 earlier  
20 MS. NEUMAN: Central Valley --  
21 MR. HOLT: Project Improvement Act.  
22 MS. NEUMAN: -- Project Improvement Act, which is  
23 sort of a subset under CalFed.  
24 MR. McLAIN: If CVPIA works, we'll know that --  
25 (Multiple speakers.)

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1 MS. NEUMAN: Okay. Sorry.

2 MR. HOLT: But the AFRP is a subset of CVPIA --

3 (Multiple speakers.)

4 MR. McLAIN: We'll get you all that.

5 (Multiple speakers.)

6 MR. DAVIDSON: What about the actual commercial  
7 sturgeon fisheries in the northern DPS?

8 MS. NEUMAN: I think we already have that.

9 (Multiple speakers.)

10 MR. GINGRAS: They just reduced the maximum length  
11 for commercial (unintelligible) green sturgeon. So,  
12 actually, technically it should be the recreational and  
13 commercial fishing regulations north --

14 MR. McLAIN: North --

15 MR. GINGRAS: -- North of the Eel River.

16 MS. NEUMAN: What did you say?

17 MR. GINGRAS: Well, it's also recreational fishing  
18 out there.

19 MS. WINDHAM: What about tribal fishing rights?

20 MR. McLAIN: Yeah, that's a good one.

21 MR. OPPENHEIM: Are there any in Sacramento?

22 MR. McLAIN: I don't think so --

23 (Multiple speakers.)

24 MR. McLAIN: There's plenty in the northern area.

25 MR. OPPENHEIM: You're concerned about green

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1 sturgeon that would be caught in the Klamath River that are  
2 from Sacramento.

3 MS. WINDHAM: (Inaudible.)

4 MS. NEUMAN: Hold on one second.

5 MS. WINDHAM: I don't know if it's an issue or not,  
6 but is there --

7 MR. HOLT: Technically they would be adults.

8 (Multiple speakers.)

9 (Extraneous noise.)

10 MR. ISRAEL: Technically, the (unintelligible) are  
11 delineated assuming that everything in the river north of  
12 that, but that might not be the case, I guess.

13 MR. DAVIDSON: What about illegal poaching?

14 MR. ISRAEL: Illegal poaching.

15 (Multiple speakers.)

16 MS. NEUMAN: Oh, yeah.

17 (Multiple speakers.)

18 MR. GINGRAS: Law enforcement.

19 (Multiple speakers.)

20 MS. NEUMAN: Maybe we should say lack of  
21 enforcement program for --

22 MR. GINGRAS: We've got a program; it's just  
23 under-funded.

24 MS. NEUMAN: Maybe --

25 MS. WINDHAM: Actually, the program is called --



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1 (Multiple speakers.)

2 MS. NEUMAN: Inadequate funding.

3 (Multiple speakers.)

4 MS. WINDHAM: -- "Delta Bay Enhanced Enforcement  
5 Program."

6 MR. DAVIDSON: I guess you could call CalFed, but  
7 it doesn't get you help in a hurry.

8 MS. WINDHAM: We've --

9 (Extraneous noise.)

10 MS. WINDHAM: -- (unintelligible) by the state  
11 water --

12 MR. OPPENHEIM: Yeah, it's still funded by the --  
13 fish taken at the state water project.

14 MR. GINGRAS: So what you're describing is the  
15 governor's budget is the program --

16 (Multiple speakers.)

17 MS. NEUMAN: George Bush's budget.

18 (Multiple speakers.)

19 MR. HOLT: I don't know if you can tell, but it  
20 seems upstream the Feather River (unintelligible) mine rather  
21 than the Sac River?

22 MS. NEUMAN: Which one?

23 MS. SEEHOLTZ: Are we talking about the Feather  
24 River?

25 MR. HOLT: Yeah, I think that's referring to the

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1 name of a mining company.

2 MS. LIU: I have one more, program funding, you  
3 know, like the program I'm working on is the whole state. We  
4 (unintelligible). So we don't have enough support. So the  
5 one time the director say we just push to minimum. Maybe we  
6 go out and do it. So that's the problem, long-term --

7 MS. NEUMAN: Inadequate long-term funding.

8 MS. LIU: That's for sure.

9 MR. McLAIN: I guess I have one more, a development  
10 of a fisheries management plan. That's an activity that  
11 would directly affect it.

12 MR. GINGRAS: It doesn't exist, unfortunately. It  
13 speaks --

14 (Multiple speakers.)

15 MS. NEUMAN: It doesn't feed into the Fish & Game  
16 Commission's program for --

17 MR. ISRAEL: Yeah.

18 MS. NEUMAN: -- the sturgeon fishery.

19 What about -- I know we've touched on this, but  
20 other large-scale habitat restoration programs? I don't know  
21 whether anything comes to mind or whether we already talked  
22 about that -- subsets of those things, like with gravel  
23 injection and --

24 MR. McLAIN: Maybe we should mention at least other  
25 than CalFed and AFRP like just other programs --

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1 MS. NEUMAN: Are there other programs?

2 MR. McLAIN: Yeah, there are. There's not a lot of  
3 them, but --

4 MS. LIU: We do have a coastal (unintelligible)  
5 program, but that may be (unintelligible) CalFed -- they most  
6 focus on coastal like coho and steel head.

7 MR. McLAIN: I'm thinking of the RCDs and the  
8 riparian joint venture type things and all those things that  
9 happen that sometimes they're included in CalFed and  
10 sometimes they're not. So we might as well just add it to  
11 the list.

12 MR. KEEJAN: Safe cut.

13 MR. McLAIN: Safe cut.

14 MS. WINDHAM: What about the Corps bank protection  
15 responsibilities -- Corps, DWR --

16 MS. NEUMAN: Are those all federal agencies you  
17 just mentioned or --

18 MS. WINDHAM: No. They're state, and then there's  
19 county. They all kind of work together.

20 MS. NEUMAN: So government agency bank  
21 stabilization?

22 MS. WINDHAM: It's really a bank protection. These  
23 days it's not so much stabilization as rock -- you know,  
24 stability. We're going through a huge consultation process  
25 on some of the emergency levee repairs at several dozen sites

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1 and actually doing --

2 MS. NEUMAN: What Qinqin mentioned.

3 MS. WINDHAM: There's some benefits to the program.

4 MS. NEUMAN: Okay.

5 MS. LIU: Also, you have some reports about  
6 (unintelligible) fishing regional program. I'm not recall  
7 that, but there is steel head and all do that program. So  
8 you have --

9 MR. McLAIN: So sport fish --

10 MS. LIU: Sport fishery restoration.

11 MR. McLAIN: Sport fish restoration.

12 MS. LIU: From the U.S. people.

13 MR. DAVIDSON: The Bay-Delta Enhancement Program.  
14 Where the money goes, who knows, but I know I pay for it.

15 MR. GINGRAS: So those are both funding sources  
16 that have a particular mission, limitations on how you can  
17 spend the money, and both of them ostensibly can do habitat  
18 restoration that might affect sturgeon. Both of them can do  
19 research and monitoring.

20 MS. WANG: Bay-Delta Enhancement --

21 MR. DAVIDSON: Enhancement.

22 MS. NEUMAN: What about dam repairs, installation,  
23 removal -- dams, just dams.

24 MR. McLAIN: Dams.

25 MS. WINDHAM: Damn dams.



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1 MS. NEUMAN: Dam maintenance.

2 MS. WINDHAM: I haven't seen a water removal.

3 MR. McLAIN: Yeah, some more of that.

4 MS. NEUMAN: Yeah. Oh, well, maybe in the future.

5 MR. HOLT: They've taken out some trips to Butte  
6 Creek and Clear Creek, took out some critical dams, taking  
7 out some on Battle creek.

8 MS. NEUMAN: Or even, you know, alteration of dam  
9 activities like what was done at Red Bluff.

10 MR. McLAIN: Yeah.

11 MR. HOLT: That's certainly a possibility.

12 MR. McLAIN: Dam removal land activities or  
13 something.

14 MS. SEEHOLTZ: We're just talking about things that  
15 exist at this point, not future --

16 MS. NEUMAN: Future repairs, perhaps, on dams or  
17 whatever maintenance is involved in the --

18 MS. WINDHAM: O&M. We could just call it O&M.

19 MS. NEUMAN: O&M?

20 MS. WINDHAM: Operations and maintenance.

21 MR. McLAIN: Operations and maintenance.

22 MS. NEUMAN: I don't know whether there are any  
23 future plans for installing -- there are?

24 MS. SEEHOLTZ: Yeah. With FERC Relicensing,  
25 there's going to be quite a few changes, but unfortunately I

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1 can't tell you what they are right now. There's ongoing  
2 negotiations. But there's different temperature regulations  
3 and stuff that will be coming out of that. And we're doing  
4 the evaluations to determine how that's going to be handled.  
5 So we're talking about possibly putting temperature control  
6 at the dam, possibly re-routing the water, having it come out  
7 of the outlet and a whole bunch of different things coming  
8 out of the water for temperature changes for the Feather  
9 River.

10 MS. WINDHAM: You probably could just list FERC  
11 Relicensing -- F-E-R-C -- as a program.

12 MS. NEUMAN: Uh-huh. Okay. I think we've spent a  
13 lot of time on activities. And we touched on a lot of these  
14 other aspects of the question as we've chatted about this.  
15 So maybe what we can do is re-visit our list here on the wall  
16 and move on to question No. 2. And Susan can just keep  
17 writing, and we'll see how far we get. It may be that when  
18 we list the types of affects that these activities, programs  
19 have on sturgeon that there's going to be a lot of repetition  
20 here. So what do you think would be best: Should we go  
21 through one by one or --

22 MR. GINGRAS: Yes.

23 MS. NEUMAN: -- should we just start -- okay.

24 MR. GINGRAS: One by one.

25 (Multiple speakers.)

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1 MS. NEUMAN: Okay. Gravel injection, what types of  
2 affects do we believe these types of programs have on the  
3 green sturgeon?

4 MR. HOLT: It maintains habitat.

5 MR. GINGRAS: Positive affect on them.

6 MR. ISRAEL: I just think it might be a  
7 (unintelligible) to habitat because you could basically  
8 accumulate gravel in deep pools and lose habitat.

9 MR. McLAIN: So habitat --

10 MS. NEUMAN: You may be losing deep cool pools.

11 MR. ISRAEL: I'm not too worried about the  
12 temperature. I was more worried about the depth of it -- if  
13 that's important. I don't even know --

14 MR. GINGRAS: So it's got to have range of  
15 potential -- absolute best -- one of them is increased  
16 habitat for forage items, better habitat for eggs to do their  
17 thing, but the only potential adverse affect I can imagine  
18 was that it might fill in some pools.

19 MR. ISRAEL: So, yeah --

20 (Multiple speakers.)

21 MR. GINGRAS: So it's --

22 MR. ISRAEL: -- related to the period and its  
23 different life-history stages, it would have different  
24 impacts and --

25 MR. GINGRAS: Right.

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1 MR. ISRAEL: -- different life-history stages.

2 MS. NEUMAN: But primarily just affecting egg --  
3 oh, no, well, it could be affecting --

4 (Multiple speakers.)

5 MR. HOLT: It's one of those kind of things, it's  
6 kind of like a vitamin. A vitamin is essential, but when you  
7 take too much, it sometimes could kill you. It's both good  
8 and bad depending on how we do it.

9 MS. NEUMAN: Well, if we could identify what the  
10 specific habitat requirement they're spawning on, the green  
11 sturgeon, I think we might be able to figure out which way it  
12 goes here.

13 Okay. Temperature --

14 Susan, are you caught up?

15 MS. WANG: Uh-huh.

16 MS. NEUMAN: Okay. Temperature-control devices.

17 MR. McLAIN: Cooler water.

18 MR. GINGRAS: I think that's how you define  
19 temperature-control devices, whether it's a device that  
20 injects relatively cool water into the stream -- that's how  
21 we're going to define it?

22 MR. HOLT: Basically, the device allows you to  
23 manage and control water temperature at some point. Now, at  
24 Shasta Dam, for example, that means that sometimes you might  
25 choose to draw water out of the warmer part of the reservoir



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1 or something. You can manage it -- it varies what we do.  
2 You can kind of maximize our long run availability of water.  
3 It helps you control water temperature.

4 MR. ISRAEL: The other thing that could do is alter  
5 developmental time of larvae and eggs. And I don't know how  
6 that would potentially -- if that's positive or negative.  
7 But it could alter developmental time.

8 MS. NEUMAN: So there could be a downside for the  
9 species if --

10 MR. ISRAEL: Well, if you're worried about  
11 predation of larvae and eggs, then that would be a downside.  
12 But if you're trying to slow down developments so that they  
13 can get through an area of high predation, maybe that's  
14 better. I don't know.

15 MR. McLAIN: Or speed up development to get them  
16 out faster.

17 MR. ISRAEL: Yeah.

18 (Multiple speakers.)

19 MR. ISRAEL: It's just altered development, I think  
20 is the thing that's necessary.

21 MR. GINGRAS: As a program, those things provide  
22 operational flexibility. I think we want that on our dams.  
23 Because if we're going to have dams, we want  
24 temperature-control devices.

25 MR. McLAIN: Yeah.

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1 MS. NEUMAN: When we install the  
2 temperature-control devices, we're using -- improving, where  
3 is the data for long-term water temperatures in the system  
4 coming from? Does it date back to pre-dam construction? Is  
5 that what we're trying to recreate here when we're putting in  
6 temperature-control devices, or are we talking about more --

7 UNIDENTIFIED SPEAKER: We would be replacing  
8 upstream habitat with downstream habitat. So you're not  
9 replacing conditions that occurred below the dams after the  
10 dam was built because -- what people were saying earlier,  
11 summertime flows in the Sacramento River were extremely low  
12 and hot. So the fish, ostensibly, were trying to get up to a  
13 cooler area where there were temperature-monitoring stations.  
14 So we're replicating what we think happened upstream to  
15 answer that.

16 MS. NEUMAN: So it's completely unnatural really  
17 almost.

18 UNIDENTIFIED SPEAKER: One of the things that makes  
19 it difficult is we -- in the Sacramento River, we're trying  
20 to accommodate four distinct runs of salmon that other hve  
21 life histories. They used to be in separate areas, and now  
22 we've got them all in one place, which means you have to keep  
23 the river cold year round; whereas, it might well be that  
24 some seasonal variation would be ideal for some kinds, but we  
25 sacrifice others in the process of trying to do that. So

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1 having the device is great; knowing how to use it is tougher  
2 probably.

3 MS. NEUMAN: Okay. Water flow, let's tackle  
4 alteration of volume and timing first.

5 MR. McLAIN: Survival -- sturgeon survival.

6 MS. NEUMAN: So positive.

7 MR. McLAIN: Well, it could be positive or  
8 negative. It's a range of --

9 MS. NEUMAN: Oh, okay. Right.

10 MR. GINGRAS: Is the project a reduction in volume  
11 and an alteration in timing? Is that how we're going to  
12 define it?

13 MS. NEUMAN: Let's do that first. Reduction in  
14 volume, alteration of timing first.

15 MR. McLAIN: It's kind of a complicated answer. If  
16 you just say a range of values from positive to negative,  
17 then it would affect all life stages in the river, everything  
18 from eggs to --

19 MR. ISRAEL: Increase the spawning period or  
20 decrease the spawning period. It could increase the rate of  
21 transfer of eggs and larvae or decrease the rate of  
22 transport.

23 MR. HOLT: It's a very complicated question and  
24 hard to say that -- the reservoirs in the valley as a whole  
25 are managed with some sophisticated computer models, and then

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1 you have your fine tuning with human judgment. But basically  
2 there's so many trade-offs involved, it's a really tough  
3 question. There's a lot more dealing with that. There will  
4 be a lot more coming on that tomorrow.

5 MR. McLAIN: Yeah.

6 MS. WINDHAM: You guys all coming back tomorrow  
7 just to watch?

8 MS. NEUMAN: Okay. I'd imagine for regulating  
9 water flow, again, the answer is the same: Positive to  
10 negative depending on the specific project.

11 Okay. Fish-passage issues at the bypasses. We  
12 specifically mentioned the fish rescue program, which would  
13 obviously be a positive thing.

14 MR. OPPENHEIM: Safety hazard for delays in  
15 spawning.

16 MS. NEUMAN: Sorry?

17 MR. OPPENHEIM: You have delays to spawning adults  
18 who can't get over the bypasses, the delay that the weirs --

19 MR. GINGRAS: So, those are actually two different  
20 things: Fish passage --

21 MS. NEUMAN: Fish passage itself --

22 MR. GINGRAS: -- at the bypasses --

23 MS. NEUMAN: -- is a negative --

24 MR. GINGRAS: -- and then the fish rescue.

25 MR. HOLT: It might be that -- the smartest thing



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1 about these weirs is getting gates or something there.  
2 But the -- if we had gates or flashboards or something like  
3 that, the upper end of the bypass, there might be the  
4 possibility there to allow the water to ramp down a bit more.  
5 Like when we vary operations of dams, we have to ramp down at  
6 a fairly slow rate to accommodate the needs of the fish and  
7 to encourage them to migrate out. And something -- it might  
8 be that one could modify the upstream end of the bypasses to  
9 allow us to -- for flood waters to subside and stop piling  
10 over on its own, but manage to divert some water deliberately  
11 in those bypasses for a while and see if you can manage --

12 MR. McLAIN: I'm thinking about downstream issues,  
13 also -- juvenile downstream issues. Because adults coming  
14 up, they could get trapped or delayed, and then there's the  
15 downstream issues, too. I don't know if that's an issue or  
16 not.

17 MR. GINGRAS: Also, one more, there's an -- that's  
18 a focal point for poaching.

19 MR. McLAIN: That's right.

20 MS. NEUMAN: I was just trying to find some notes I  
21 had taken during the meeting with Steve Lindley where we  
22 specifically talked about the Yolo Bypass. And he mentioned  
23 a couple of different ideas he had for solutions of that  
24 problem, which basically involved putting up some kind of  
25 barrier to keep adults out.

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1 MR. ISRAEL: I think it's too big.

2 MR. McLAIN: I think that's unpopular.

3 (Multiple speakers.)

4 UNIDENTIFIED SPEAKER: The Alaska Weir?

5 MS. NEUMAN: I'm trying to remember, actually, what  
6 specific -- you know, what weir he was talking about. I  
7 don't know.

8 MR. McLAIN: That's a huge spot to block. I mean  
9 it's -- the entrance to the bypass is gigantic. It's like a  
10 60-foot deep hole with just raging waters through there.

11 MS. NEUMAN: I think whatever Steve was  
12 recommending was something that was reasonable. So I'll have  
13 to take a look at my notes. I don't think he would have gone  
14 way out there --

15 MR. HOLT: It's about a mile wide.

16 (Multiple speakers.)

17 MS. WINDHAM: Part of that came from, I think, the  
18 fact that, gosh, a couple of years back Ted Sommer from DWR  
19 gave a presentation to the Salmon Technical Recovery Team  
20 about management of the overall bypasses and conflicts with  
21 flooding the area for water fowl. And so there was a little  
22 bit of irritation between Fish & Game and other uses of the  
23 area. And, basically, Ted was suggesting that rather than  
24 just diking things, that you can actually construct something  
25 that would be -- that would still allow some fish to pass and

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1 not be trapped, so it could function. But the area is  
2 predominantly managed for water fowl at the appropriate times  
3 of the year.

4 MS. NEUMAN: I understand.

5 MR. HOLT: They're doing something at the gun clubs  
6 that we've seen where they've redesigned -- in some cases  
7 they've redesigned some of the outfalls from some of the  
8 dikes and ponds for flooding for water fowl. But you can  
9 redesign it to make it less passable by adults when there's  
10 an attraction in there, but -- because the area overflows  
11 each winter. So it's for when some of the jump-out juveniles  
12 upstream. So...

13 MS. NEUMAN: Okay. Screening the diversions.

14 MR. McLAIN: Well --

15 MS. WINDHAM: This is the pink elephant.

16 MR. HOLT: The question is, how useful would it be?  
17 Like we have several hundred unscreened -- small unscreened  
18 diversions in the Sacramento River and about a thousand in  
19 the Delta. I mean it's just huge numbers -- 3,000? Okay. A  
20 lot.

21 MR. McLAIN: Or 3,001.

22 MR. HOLT: The big diversions on the Sacramento  
23 River many have been screened by now or are in the process of  
24 getting screened for chinook. But those -- would that be  
25 adequate for the sturgeon?

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1                   MR. McLAIN:  So adequacy -- or whatever you call  
2                   it -- of the existing screens.

3                   MR. HOLT:  Yeah, that's a tens-of-million-dollar  
4                   question.

5                   MR. GINGRAS:  Is it -- are we talking about the  
6                   criteria for the screens?  I would say the program is the  
7                   criteria.  Right?

8                   MR. McLAIN:  Yeah, right.  There's a Fish & Game's  
9                   Screening Program and there's a NMFS criteria.  There's two.

10                  MR. HOLT:  Well, there are programs to install  
11                  screens, isn't there?

12                  MS. NEUMAN:  But, again, I think when these  
13                  programs were first implemented for salmon, the idea was that  
14                  this would have a positive affect on salmon.  And now I'm  
15                  hearing -- who was it from Cal Fish & Game earlier, Marty,  
16                  who left this afternoon?

17                  MR. McLAIN:  Oh, Paul Ward.

18                  MS. NEUMAN:  Yeah.  He said that we'll probably be  
19                  hearing more tomorrow about some of the down sides of  
20                  installation of the salmon-safe screens.  But it may be  
21                  altering the habitat some of the fish.

22                  MR. ISRAEL:  It seems like -- it seems like basic  
23                  life history information about where the fish are would be  
24                  really -- it seems like the affects are sort of inconclusive  
25                  at this point.  But --



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1 MR. McLAIN: Right.

2 MR. ISRAEL: I guess some studies could be done,  
3 you know, to check on the fish tendrils. It seems like more  
4 and more investigation before you start putting up \$10  
5 million to retrofit for salmon.

6 MS. NEUMAN: Well, apparently there's information  
7 out there, according to -- a little bit, anyway, according to  
8 Gary Stern, our own agency and our Engineering Department in  
9 Santa Rosa. Apparently when they were developing criteria  
10 for salmon, there was also something done with the sturgeon.  
11 So we need to figure out where (unintelligible).

12 MR. McLAIN: I think -- I think -- I agree, we need  
13 to know the exposure to the screens because there's different  
14 types of screens. And so if we could just --

15 MR. ISRAEL: Yeah, I mean, Joel, putting fish in  
16 front of a screen is very different than fish in the wild  
17 which happens to be 50 feet below where the intake is, you  
18 know. So --

19 MS. WINDHAM: You've also got the issue of adults  
20 versus juveniles. I think everyone's pretty much in  
21 agreement that you can't screen for adult smelt, for example,  
22 because they're too small. We could have the same issue with  
23 green sturgeon doing that also, potentially. But I mean it's  
24 too -- this is just a, I don't know, pet peeve of mine  
25 personally, I think, is this we need to screen every

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1 diversion. I think we need to choose carefully where we  
2 screen and put the screen where it's going to do the most  
3 good under the circumstances.

4 MS. NEUMAN: Certainly not, you know, implement new  
5 screening criteria for green sturgeon before we understand  
6 what our salmon-safe screens are currently doing or not  
7 doing. It seems like, you know, NMFS needs to step up to the  
8 plate here and take a more active role in researching and  
9 monitoring.

10 MR. ISRAEL: It seems like the -- you know, it's  
11 sort of dependent on the activity around the screens, too,  
12 You know, if you have spawning going on and there's a lot of  
13 turbulent water, which seems to be (unintelligible) for  
14 spawning, you might have, you know, eggs or larvae at  
15 different parts of the water than just a screen on some oxbow  
16 bend, you know, where there's very stable --

17 (Multiple speakers.)

18 UNIDENTIFIED SPEAKER: Each one is site specific.

19 MR. ISRAEL: Each one is very site specific.

20 MS. NEUMAN: Uh-huh.

21 MR. ISRAEL: I mean its affects on salmon, I  
22 believe, are --

23 UNIDENTIFIED SPEAKER: By the time you get to the  
24 Delta, the (unintelligible) are of a large enough size where  
25 they could be screened effectively, even through the fish

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1 facilities.

2 MR. HOLT: Maybe the simplest way to address this  
3 is to make sure as many green sturgeon are as far upstream as  
4 possible because there's very little water diverted between  
5 basically Anderson/Cottonwood's diversion up there in the  
6 city of Redding and Red Bluff. Red Bluff down to, oh, about  
7 Hanford City is not an awful lot. I mean they should have  
8 some sediment contractors along there. But you're big  
9 diversions are ACID, Red Bluff, and GCID going north to  
10 south, and then you get some other big ones going to the  
11 south. GCID is another area at the upper end of the  
12 rice-growing area. And Red Bluff is (unintelligible). So  
13 you -- to the extent that you have fish spawning way up  
14 river, you aren't going to be exposed as much to anything,  
15 the young, early stages.

16 MS. NEUMAN: Power plant operations. How many  
17 power plants are there between -- I mean we -- are there any  
18 power plants on the river?

19 MR. ISRAEL: There's the Delta --

20 MR. McLAIN: Many of them.

21 (Multiple speakers.)

22 MR. McLAIN: The big one's in the Delta.

23 MS. LIU: I think the power plant of PG&E is  
24 probably (unintelligible) from there -- out of Sacramento,  
25 there's PG&E (unintelligible).

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1                   MR. KEEJAN: Any kind of -- whether it's EMS  
2                   (phonetic) or a water supply or it a chemical plant or a  
3                   power plant, it depends on where you have a water intake.

4                   MR. McLAIN: I think that what we were talking  
5                   about specifically were the two in the Suisun Bay --

6                   (Multiple speakers.)

7                   MR. McLAIN: Yeah, they use a lot of water to cool  
8                   the plants and have had some issues with taking other fish --  
9                   significant quantities of other fish. So that was the  
10                  possible idea of looking into sturgeons.

11                  MS. NEUMAN: Do they sample --

12                  MR. KEEJAN: Yes.

13                  MS. NEUMAN: -- their water? And do they  
14                  identify --

15                  MR. KEEJAN: That's the 316AMD Program  
16                  (unintelligible).

17                  MR. McLAIN: It's been tied up in the courts. I'm  
18                  not real familiar with how it went, but I think they're still  
19                  trying to get some of that data out of the process.

20                  MS. NEUMAN: We need to look (unintelligible) --

21                  (Extraneous noise.)

22                  MS. NEUMAN: -- the data that's impacting it and  
23                  whether they've been identifying -- you know, first of all --

24                  (Extraneous noise.)

25                  MS. NEUMAN: -- (unintelligible).



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1                   MR. McLAIN: Well, the other agency  
2 (unintelligible) --

3                   (Extraneous noise.)

4                   MS. NEUMAN: Okay. So there are people working on  
5 it.

6                   MR. McLAIN: Oh, yeah.

7                   (Extraneous noise.)

8                   MS. NEUMAN: Okay. So we don't know.

9                   MR. GINGRAS: It's not plausible.

10                  (Multiple speakers.)

11                  MR. HOLT: What you're really talking about there  
12 is your thermal power plants, co-fire, something else.  
13 That's different from the power plants associated with the  
14 hydro power --

15                  MR. McLAIN: Right.

16                  MR. HOLT: -- because they use heat and water in  
17 the thermal plants.

18                  MR. McLAIN: Right.

19                  MS. NEUMAN: Okay. So let's see, what's the  
20 next --

21                  MR. McLAIN: Flood-control programs.

22                  MR. GINGRAS: Are we phrasing these responses  
23 correct, now, to No. 2?

24                  MS. NEUMAN: Well, I think so. I mean, again, just  
25 to -- remind yourself of what the question is: What types of

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1 affects do these activities or programs have on green  
2 sturgeon. And it may be that all we can say at this point is  
3 positive, negative, no affect, don't know. I mean that's  
4 probably what we will be boiling this down to.

5 MR. GINGRAS: That's similar to No. 3, then. No. 3  
6 is just the positive half of that --

7 MS. NEUMAN: Yeah, we're probably covering 2 and 3  
8 together. And we're probably covering some of 5 because  
9 we've been talking about impacts to other species.

10 MR. McLAIN: So, then, let me take a shot this one  
11 and say --

12 MS. NEUMAN: Okay.

13 MR. McLAIN: -- likely both positive and negative  
14 ecosystem impacts. That's really as far as we get now. I  
15 mean -- in a sense it's altering the riparian system and the  
16 ecosystem. And how that would impact the different life  
17 stages is a little uncertain. But --

18 MS. LIU: Most importantly, because we don't know  
19 the (unintelligible) habitat for sturgeon, you know, so if  
20 there's conflict, interesting, at a certain critical point  
21 for big projects but happen to be that critical part of  
22 sturgeon habitat, that would be important, you know, issue at  
23 that time. But right now, you know, certainly not certain  
24 about that.

25 MS. NEUMAN: Anyone have anything to add?

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1                   Okay.  Water exports.

2                   UNIDENTIFIED SPEAKER:  Even I would agree that  
3  those are positives.

4                   (Multiple speakers.)

5                   MS. NEUMAN:  Okay.

6                   MR. HOLT:  You'll get a lot on that one tomorrow.

7                   MS. NEUMAN:  Okay.  All life stages.

8                   MR. McLAIN:  Yeah.

9                   MS. NEUMAN:  Operation of the pumps.

10                  MR. McLAIN:  So I'm assuming that means direct take  
11  at the pumps and the salvage programs associated with them  
12  and --

13                  MS. NEUMAN:  So -- I mean the salvage program is a  
14  positive aspect of what goes on there, correct?  But nobody  
15  ever follows the fate of those salmonids that are salvaged.

16                  MR. McLAIN:  There were some studies done that  
17  found that they were eaten --

18                  (Multiple speakers.)

19                  MS. NEUMAN:  Yes.  Are they always put back in the  
20  same location once they're salvaged?

21                  MR. McLAIN:  There's two locations?

22                  MS. SEEHOLTZ:  I think so.  And that's the dinner  
23  bell.

24                  MR. McLAIN:  Yeah.

25                  MS. SEEHOLTZ:  It's kind of like a dinner bell when

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1 the trap backs up.

2 MR. GINGRAS: Well, sometimes it is. But it's  
3 actually the subject of an ongoing very costly detailed  
4 research. But --

5 MR. HOLT: Like a fish hatchery operation where the  
6 fish learn to flock towards shadows and think somebody's  
7 coming around to feed them as opposed to the wild type that  
8 scatter.

9 MR. GINGRAS: So what are -- whoever said  
10 "operation of the pumps," what were they getting at? Was  
11 that different than water exports?

12 MR. DAVIDSON: Well, it's just that the damage that  
13 pumps are doing. I wasn't even talking about the salvage  
14 programs, a second issue, which seems to have mixed reviews,  
15 I guess is what I'm hearing.

16 MS. NEUMAN: So the direct mortality that results  
17 from a fish --

18 MR. DAVIDSON: Well, just that the actual pump --  
19 those fish are gone from the Delta until somebody decides to  
20 do something about the salvage operation. And then we don't  
21 really know after that what happens.

22 MR. GINGRAS: That's very similar to the previous  
23 one, which was screening. Because if you're only talking  
24 about what goes through the screens into the pumps, then it's



25 a screening issue. But if you're actually talking about the

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1 large-scale water diversions in the south Delta, then you're  
2 talking about the reverse hydrology and the reverse  
3 hydrograph and --

4 (Multiple speakers.)

5 MR. McLAIN: That's --

6 MR. GINGRAS: -- and saltwater intrusion and all  
7 that kind of stuff.

8 MR. McLAIN: Water exports, that's what I was  
9 thinking.

10 MR. GINGRAS: Right. So let's maybe modify that  
11 one a little bit. So, you know, operation of the pumps in  
12 the south Delta -- you know, state and federal pumps in the  
13 south Delta, something like that.

14 MR. HOLT: Like almost a subset of exports maybe.  
15 They kind of go together.

16 MR. GINGRAS: Right.

17 MR. ISRAEL: But I'm hearing -- are you guys aware  
18 you're talking there's habitat at that -- as well as  
19 population affects -- or there's different types -- there's  
20 different things going on there?

21 MR. GINGRAS: Right.

22 MR. McLAIN: Uh-huh.

23 MR. GINGRAS: I don't think any of them are  
24 positive.

25 MS. NEUMAN: Dredging -- sorry, did you have

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1 anything?

2 UNIDENTIFIED SPEAKER: No.

3 MS. WINDHAM: Suspension of contaminants.

4 MS. NEUMAN: One thing I didn't have time to ask  
5 Ellen about is whether or not these areas where DDT-latent  
6 sediments are -- whether they're cleared through those areas  
7 when dredging or whether some of that gets picked up during  
8 the dredging. Sounds like they cleaned up some of that on --

9 MR. PHILLIPS: She said they have to stir it up to  
10 get it out.

11 UNIDENTIFIED SPEAKER: Nice.

12 MR. KEEJAN: But just the physical effect of --  
13 (Multiple speakers.)

14 MR. DAVIDSON: And then dump it somewhere.

15 MR. KEEJAN: But, of course, its tested prior to  
16 that. They don't just go through and dredge it out and go  
17 "Oh, that wasn't a" --

18 (Multiple speakers.)

19 MR. KEEJAN: You know, dredging is a double-edged  
20 sword. You know, there's a lot of -- there's quite a bit of  
21 work that's being done right now that is trying to --  
22 intuitively you kind of think, "Oh, dredging, bad." But I  
23 don't know, we've done some work where we've looked at --  
24 done some hydrocoustics, looking at a hopper dredging,  
25 dropping its -- the dredged material (unintelligible), for

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1 example. And the hydrocoustics, we're looking at fish. The  
2 fish sense it coming down a pressure way, whatever moved out,  
3 the stuff settled, and the fish moved back in. Now,  
4 contaminants is an issue. But in terms of physical affects,  
5 I'm not -- you know, I think the jury's out, quite frankly,  
6 and especially the localized situation. We've looked at  
7 plume studies, we've looked at all sorts of things, and just  
8 haven't found that --

9 MS. WINDHAM: It's a life-cycle issue because it  
10 really depends on if the fish is staying in the area --

11 (Multiple speakers.)

12 MS. WINDHAM: -- (unintelligible) actually be  
13 absorbing those contaminants or feeding on other critters  
14 that are native (unintelligible) contaminants. The theory is  
15 that salmon, for instance, don't necessarily feed very much  
16 as they're heading out of the Bay to the ocean. We don't  
17 know for sure, but what little we do know suggests that  
18 they're not feeding very much. So their uptake might not be  
19 that significant. Other, you know, in-bay residents,  
20 halibut, are much more susceptible. So it's --

21 MR. KEEJAN: So localized affects.

22 MS. WINDHAM: -- somewhere in between.

23 MR. ISRAEL: I think that Serge Dorshoff (phonetic)  
24 has actually looked at white sturgeon biocumulation of  
25 (unintelligible), but potentially all their contaminants as

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1 well.

2 MS. NEUMAN: Mercury is (unintelligible) --

3 MR. ISRAEL: They might have. I'm not sure. But I  
4 know that there's been work done on -- there's a dissertation  
5 on contaminants and white sturgeon life stages --

6 MR. KEEJAN: There's other work on striped bass as  
7 well. But that's not dredging; that's --

8 MR. ISRAEL: Yeah. Right. That's still --

9 (Multiple speakers.)

10 MR. KEEJAN: Right.

11 MR. HOLT: It would seem like the dredging sort of  
12 thing, usually the fish move out of the way, that is, you  
13 might want to take some care not to put too thick a layer in  
14 one place which could affect -- might be interfering with the  
15 invertebrates or something at the bottom --

16 (Multiple speakers.)

17 MR. HOLT: -- (unintelligible) so deeply they can't  
18 excavate out. And they're part of the food chain for these  
19 critters. So dredging-spoil deposits might be no affect or  
20 it might be adverse depending on how you did it.

21 MR. KEEJAN: I'm sure there's localized affects,  
22 whether they're short term or --

23 MS. WINDHAM: Yeah. A lot of them are short term.

24 MR. KEEJAN: -- might be short term or not.

25 MS. WINDHAM: Some of the disposal sites are



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1 situated such that the currents help disperse the material  
2 out through the gates and into the ocean eventually. But  
3 there's some time factor (unintelligible).

4 MR. KEEJAN: Well, I'm not suggesting it's positive  
5 impacts, but I'm also suggesting that there's probably  
6 limited -- it depends. Like you've been saying, there's  
7 likely various affects depending on the location and the time  
8 of year.

9 MR. PHILLIPS: Well -- and Ellen's comment, I  
10 believe, was that they had negotiated the window of time that  
11 they could effectively do construction in the bay. And  
12 looking at that window that she's got there and matching that  
13 against green sturgeon migration up the Sacramento River, I'm  
14 foreseeing a potential problem in the Sacramento River with  
15 any kind of construction you want to do in or around the  
16 river. So you basically have an upstream migration from  
17 April through June, downstream migration of June through  
18 September. So you've effectively got a working time in the  
19 river of potentially between September and December.

20 MS. WINDHAM: Realistically, timing windows, work  
21 windows we're finding are not working. And we really need to  
22 get these folks -- the applicants, for lack of a better term,  
23 to work with those more creatively in finding ways of  
24 executing their projects in such a way that they're  
25 minimizing or reducing or eliminating the impacts altogether

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1 and (unintelligible) timing an issue. Because with you, you  
2 either have conflicts with other species or you end up  
3 with --

4 MR. PHILLIPS: Flood-control issues and --

5 MS. WINDHAM: Uh-huh. Or a month or two where you  
6 can do work and nobody can get the project done.

7 MR. PHILLIPS: That's right. I don't know, I --

8 MS. WINDHAM: That's --

9 (Multiple speakers.)

10 MR. DAVIDSON: I agree, sturgeon are there all year  
11 long.

12 (Multiple speakers.)

13 UNIDENTIFIED SPEAKER: Previously, June through  
14 August would be -- in the Sacramento River would be a real  
15 good time to do it because there's not a lot of other  
16 stuff --

17 MS. WINDHAM: There's salmon --

18 (Multiple speakers.)

19 MR. HOLT: But the question is, how much trouble is  
20 the construction cost.

21 MR. PHILLIPS: Well, that would be -- I would hate  
22 for, you know --

23 MS. WINDHAM: Well, I can't tell you how -- I mean  
24 I've seen more often than not those with construction windows  
25 for salmon are constantly asking for extensions on those

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1 windows. We're dealing with that on a constant basis. So  
2 even without green sturgeon, the work window concept isn't  
3 working.

4 MR. McLAIN: And I agree, though, I think -- I  
5 think the dredging issue is going to be a big one, and  
6 especially if you include that economic impact of all the  
7 associated shipping because as a result of the dredging.  
8 Because that's why they're doing the dredging.

9 MS. WINDHAM: It's not going to go away.

10 (Multiple speakers.)

11 MR. McLAIN: It's going to be big.

12 MS. NEUMAN: Again, though, I don't want to -- I  
13 don't think that anyone should be -- I mean we certainly  
14 should be working with her. But when we've done our threat  
15 assessment, it's really -- and I guess one might consider  
16 dredging activity to be a subset of habitat curtailment,  
17 modification, alteration. But it's not one of the major  
18 threats we identified to the species. And when we sit down  
19 and prioritize what those major threats are -- I'm not saying  
20 that we don't want to work with Ellen to try and minimize the  
21 impacts of dredging because there is an issue, but I think  
22 we've got a lot of other more perhaps things --

23 MR. KEEJAN: I think Ellen's --

24 (Multiple speakers.)

25 MR. KEEJAN: -- suggestion of let's go out and

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1 collect realtime data in realtime situations rather than  
2 trying to manage things on windows -- and the only reason  
3 they're (unintelligible) is from lack of information.

4 (Multiple speakers.)

5 MR. PHILLIPS: I understand that that would be  
6 good. But it seems like you try to do these things on a  
7 realtime basis but every year is different. You can't  
8 schedule a construction crew like that. And you can't -- you  
9 can't time out a project like that. So you fall back and  
10 say, well, you know, September 15th to, you know, March 15th.  
11 And so the problem is, I think you can alleviate some of that  
12 with best management practices and say, okay, well, we agree  
13 we're going to do all these things first, and then we'll try  
14 to get in as early as we can to get out of there.

15 MS. WINDHAM: Yeah, try.

16 MS. NEUMAN: Let's move on. The Cal

17 (unintelligible) Research & Monitoring.

18 MR. GINGRAS: Actually, I would strike that to be  
19 the (unintelligible) everyone here.

20 (Multiple speakers.)

21 MS. NEUMAN: Okay. Sure.

22 MR. McLAIN: Negative affect.

23 MR. GINGRAS: Killed by the Bureau.

24 MS. SEEHOLTZ: You've added us to yours?

25 (Inaudible discussion between audience members.)



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1 MS. NEUMAN: Fish & Wildlife Service?

2 MR. McLAIN: Yeah.

3 MS. NEUMAN: I'll just say "others."

4 MR. URKOV: They'll appreciate that.

5 MR. McLAIN: I mean obviously that has a lot of  
6 beneficial affect. We could talk a lot about that, but I  
7 don't know how much detail you want to go into.

8 MS. NEUMAN: I think we can just limit it to most  
9 of this research, there's programs that we hope to  
10 incorporate into 4(d) program that are given a permit under  
11 Section 10(a)(1) -- scientific research (unintelligible),  
12 there I'll just say it. That we're going to view those  
13 activities as being -- that's something that's positive and  
14 contributing to conservation.

15 MR. McLAIN: I mean does it seem like that's really  
16 the only one that we're thinking about? Well, I guess we've  
17 got screening and stuff like that. But that seems like the  
18 biggest, most -- I guess -- obviously we're going to have a  
19 4(d) for that -- a program -- some sort of program for  
20 research and monitoring, obviously. But are there other  
21 issues -- there's a lot of stuff on this list, but I just --  
22 so far I don't see any that really qualify as --

23 MS. NEUMAN: As a 4(d) program exemption?

24 MR. McLAIN: Yeah.

25 MS. LIU: What about restoration?

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1 MR. McLAIN: Okay. That would --

2 MS. LIU: That's not research. That's different.

3 MR. ISRAEL: The CalFed program.

4 MR. McLAIN: Yeah. I'm just trying to get a feel  
5 for...

6 MS. NEUMAN: I think it's still up in the air a  
7 little bit, too, with regards to a captive program. I don't  
8 know whether we would want to create a whole program for  
9 captive propagating sturgeon or whether that would serve just  
10 to be a one-time thing or a permanent thing.

11 Okay. Commercial fishing and harvesting bycatch  
12 and (unintelligible) DPS.

13 MR. ISRAEL: It seems to have a negative affect,  
14 but it could be minimized effectively, but it would require  
15 users monitoring it.

16 MR. KEEJAN: (Unintelligible) fisheries, for  
17 example, for bait -- you know, those are during -- of course,  
18 they're small little smelts, for example, but nonetheless  
19 they certainly add up, and there's everything in those  
20 (unintelligible).

21 (Multiple speakers.)

22 MR. KEEJAN: They're down now, aren't they?

23 MR. ISRAEL: So there's --

24 (Multiple speakers.)

25 (Inaudible audience discussion.)

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1                   MS. NEUMAN: I actually had an observer at NMFS  
2                   contact me through -- after publication of our final rule,  
3                   basically, for instance -- I don't know, I guess she's an  
4                   observer. And she had contacted me because I had information  
5                   that I'd collected on commercial fishing vessels on the  
6                   coast. So I contacted with her, yeah. But maybe  
7                   (unintelligible) some information through our  
8                   (unintelligible).

9                   MR. DAVIDSON: I can virtually guarantee that  
10                  there's white sturgeon bycatch in that because they -- the  
11                  sturgeon flock. They all flock down the Delta to  
12                  (unintelligible). And every year it's like clockwork, the  
13                  sturgeon are gone from upstream and they're in the Bay. And  
14                  there's some closure for the white sturgeon (unintelligible)  
15                  where you can't fish. I don't know about the green sturgeon.  
16                  I don't know (unintelligible).

17                  MR. GINGRAS: I'd say the fact that all those  
18                  commercial fisheries have reporting requirements is actually  
19                  a positive thing.

20                  MS. NEUMAN: Right.

21                  MR. GINGRAS: You know, we learn about the  
22                  (unintelligible) distribution, therefore the age  
23                  distribution, distribution of -- you know, geographic  
24                  distribution, that sort of thing. So in the absence of  
25                  sufficient funding for fisheries and independent stuff, at

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1 least we've got some big-time sampling going on.

2 MS. NEUMAN: And we need to do more research and  
3 monitoring to figure out what kind of impact these northern  
4 DPS fisheries have had on southern DPS fish. They're aging a  
5 lot more than we thought previously when we first divided  
6 them into two different DPSs.

7 Okay. EPA pollution-control programs.

8 MR. HOLT: Some are fairly beneficial.

9 (Multiple speakers.)

10 MS. NEUMAN: Marty, is there a positive side and a  
11 negative side?

12 MR. HOLT: For some. Some are just pure positive.

13 UNIDENTIFIED SPEAKER: For the Bush Administration,  
14 I would say it's probably a negative.

15 MR. ISRAEL: Seems like it would be worth just --  
16 you know, whoever's doing that kind of thing and reviewing  
17 it -- you know, reviewing in light of the green sturgeon --  
18 right? Because that would be the sort of thing  
19 (unintelligible).

20 (Multiple speakers.)

21 MR. HOLT: Yeah, just --

22 (Multiple speakers.)

23 MR. HOLT: It may be that we're doing the best we  
24 could possibly do overall, but there is a -- you know, we all  
25 have our specific missions, and there's always a danger



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1 somewhat -- or get a different perspective at least. I  
2 know --

3 MS. NEUMAN: I mean isn't one of the downsides,  
4 though, that you suggested was --

5 (Multiple speakers.)

6 MR. HOLT: You might --

7 MS. NEUMAN: -- tampering with the food web here?

8 MR. HOLT: Yeah. An inadvertent change in the flow  
9 of invertebrates and stuff out of the rice fields since the  
10 artificial marshes in the -- in the -- in the river bed. I  
11 don't know if that's the case or not, but it could be.

12 MS. NEUMAN: Okay. Development: Roads, houses. I  
13 think, if I recall, what we were talking about here was  
14 causing --

15 MR. HOLT: Sediment.

16 MS. NEUMAN: Right.

17 MR. McLAIN: And toxicity (unintelligible).

18 MS. NEUMAN: Okay. So negative.

19 MR. McLAIN: Yeah, they're negative. All negative.

20 MR. ISRAEL: Seems like if it's in areas where  
21 they're spawning, it could potentially be -- you know,  
22 that's -- again, like spacially have an influence on them.

23 MS. NEUMAN: Uh-huh.

24 MR. ISRAEL: Yeah.

25 MS. NEUMAN: So ditto for fire suppression.

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1 Gravel mining?

2 MR. HOLT: Probably a minor activity. Something  
3 going after usually the smaller gravel or something. They  
4 have more affect on the salmonids than green sturgeon, but it  
5 doesn't seem to affect (unintelligible).

6 MS. NEUMAN: Hold on for one second. Introduction  
7 of exotics.

8 MS. LIU: I -- I think if you keep it intact  
9 (unintelligible) which cause habitat impact (unintelligible)  
10 and our food chain, you know. So, for example,  
11 (unintelligible) and, you know -- it's more than the food web  
12 change. I think, you know, that's potentially a food chain  
13 and habitat issue. And, of course, (unintelligible)  
14 competition.

15 MS. NEUMAN: Any other ballast water -- or release  
16 of ballast water was actually the activity that leads to the  
17 introduction of these exotic species?

18 So we'll go into herbicide spraying.

19 MR. McLAIN: One thought about the ballast water.  
20 Isn't there legislation and a program associated with that  
21 that limits that?

22 MR. DAVIDSON: Yes, several miles off shore they're  
23 supposed to exchange all their water.

24 MR. McLAIN: Yeah. That could be a beneficial  
25 program.

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1           MR. DAVIDSON:  If it's being done consistently,  
2           which it's not.

3           MS. LIU:  Also, the DFG (unintelligible) program.  
4           There is new staff, a lot new coordination.  I'm not involved  
5           specifically in that program, but it would be interesting to  
6           keep track on that.

7           MS. NEUMAN:  Who is -- Qinqin, who is the person at  
8           Cal Fish & Game --

9           MS. LIU:  You know, Habitat Conservation Planning  
10          Division.

11          MS. NEUMAN:  Is there a specific person?

12          MS. LIU:  Yeah.  I can give you the name, and you  
13          can contact that person.

14          MS. NEUMAN:  Okay.  Herbicide spraying?  Sort of  
15          touch upon -- we were talking about here the EPA Pollution  
16          Control Program.

17          MR. GINGRAS:  The thing about that one, that's a  
18          program where they're introducing massive stuff:  The EPA  
19          Pollution Control --

20          (Multiple speakers.)

21          MS. NEUMAN:  It was meant to do a good thing.  So  
22          herbicide spraying is pretty much a negative.  Okay.  
23          Probably through all life stages, but we'll just assume that  
24          all life stages are probably sensitive.

25          Fish & Game regulations at the recreational

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1 fisheries. That's going to be a positive.

2 Water quality control and the State Water Quality  
3 Control Board. Again, could somebody remind me, they are --  
4 are they going to be the ones who are sort of regulating the  
5 flood control program? Qinqin?

6 MS. LIU: Only through -- relayed through Water  
7 Quality, like they have wetlands, you know, Coastal Permit  
8 program or water resources. So they are permitting -- state  
9 permitting for water quality -- water-quality issues.

10 MR. McLAIN: Well, the Water Quality Control Board  
11 is kind of the over-arching -- they set the standards in  
12 inland waters for -- they set flow standards. So the '95  
13 Water Quality Control Plans (inaudible) that we talked about,  
14 the Rio Vista standards --

15 MS. NEUMAN: So this is a division -- it is a state  
16 department.

17 MR. McLAIN: Right.

18 MR. ISRAEL: (Unintelligible.)

19 MR. HOLT: State Water is sort of --

20 (Multiple speakers.)

21 MR. HOLT: -- controls water --

22 Multiple speakers.)

23 MR. ISRAEL: They're in charge of basically basing  
24 plans which oversee impaired water bodies. And I don't know  
25 if the Sacramento --



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1                   MR. HOLT:  Water -- but if they divert water, it's  
2 going to make (unintelligible)

3                   (Multiple speakers.)

4                   MR. ISRAEL:  They oversee water --

5                   MR. McLAIN:  So it's a program that would -- we  
6 want to at least talk about.

7                   MS. NEUMAN:  Okay.  So the EPA Pollution Control  
8 Program and the State Water Quality Control Board, these two  
9 programs are somewhat redundant; it's just that one is better  
10 than --

11                  MR. McLAIN:  They're quite a bit separate in one  
12 big --

13                  MS. NEUMAN:  Right.  But the activities that they  
14 are carrying out might be the same, and they might be  
15 operating under similar --

16                  (Multiple speakers.)

17                  MR. HOLT:  The Clean Water Act allows for  
18 (unintelligible) to delegate to the state.  That's why  
19 there's federal agencies we have to get on there, a 401  
20 permit and all those issues about the Water Quality Control  
21 Board.  Because the authority traces back to a federal law.  
22 It's been delegated to the state, both the Clean Water Act,  
23 Clean Air Act allow for delegation direct to the feds.  So  
24 the EPA has delegated a lot of authority to the Freshwater  
25 Resources Control Board.  In California, the Water Quality

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1 Control Boards are under the oversight of the Water Resources  
2 Control Board which also is the one that so says what water  
3 you can use and when and how much and in what ways and all  
4 those permits. So --

5 (Multiple speakers.)

6 MR. McLAIN: I would keep them separate at this  
7 point.

8 MS. LIU: Yeah, because they're execute a lot of  
9 permit. For example, if you want to dredging, you know,  
10 water quality -- water quality, you got to get permit from  
11 them. And -- so they're basically under the Water Quality --  
12 all the projects, even restoration projects.

13 MS. NEUMAN: So are they doing -- I mean what's the  
14 affect here of the program: Positive --

15 MR. HOLT: As to water quality for the most part.

16 MS. LIU: Yeah, mostly (unintelligible).

17 MS. NEUMAN: So they're allowing projects to move  
18 forward. They won't permit projects to move forward if they  
19 don't meet the standards --

20 MS. LIU: Yeah, to make sure they maximize it.

21 (Multiple speakers.)

22 MS. NEUMAN: So it's safe.

23 MR. HOLT: And the Corps of Engineers for the State  
24 Reclamation Board are the ones that are more -- determine  
25 flood control measures.

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1                   MR. McLAIN: But they're making decisions, say,  
2 this is how much water you're going to get to take. So  
3 they're making some pretty big decisions.

4                   MS. NEUMAN: Are they governed by (unintelligible)  
5 people who are (unintelligible).

6                   MR. McLAIN: Well, they're governed by the EPA.  
7 (Multiple speakers.)

8                   MR. McLAIN: Yeah.

9                   MR. HOLT: Well, the Water Quality Control Board  
10 certainly is.

11                   MS. NEUMAN: Okay.

12                   MR. URKOV: Well, these potential regulations  
13 affect operations in the Delta, meaning export. Tomorrow  
14 we'll talk about that. I mean the export ratios in the Delta  
15 are, in my mind, fundamentally linked to water quality. So  
16 you have a linkage in the Delta between water quantity and  
17 water quality because you can only export at certain times  
18 when the quality is at certain levels in the Delta. So  
19 that's what the folks tomorrow are going to be very concerned  
20 about. Now, one of the next bullets up there, CalFed, CalFed  
21 came into existence because State Water Quality Control Board  
22 which had federal responsibilities for the Clean Water Act  
23 could not promulgate standards in the Delta because water  
24 quality and water quantity were linked. And so they were  
25 going to have to go in and try to change the amount of water

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1 that people could take under their water rights in order to  
2 put more water quantity into the Delta to improve the quality  
3 of the Delta to meet Clean Water Act -- federal Clean Water  
4 Act standards. CalFed came back and said, hey, the EPA said  
5 you're not meeting our standards, so we're going to take over  
6 water quality control in the state, which meant that they  
7 were going to impact state water rights, which was going to  
8 cause civil war, literally. So CalFed happened, and CalFed's  
9 now gone on.

10 So if water quality and water quantity for green  
11 sturgeon are going to be impacted in the Delta through this  
12 ruling, it's delicate territory because -- because water  
13 quality in the Delta -- and, again, maybe you all have  
14 differing opinions, but in my mind is tied to water quantity,  
15 which means water rights.

16 MR. McLAIN: Which is what they do.

17 MR. HOLT: And part of that also ties back into  
18 other water quality public health centers to it because all  
19 these old levees in the Delta are, you know, peaked. And you  
20 don't want to get saltwater in there. You get trace  
21 quantities of alginated organics, and the threshold, the  
22 standards are in the part-per-trillion range, which is -- I  
23 can't -- I think a Martini drinker came up with this: A  
24 jigger of gin in a swimming pool and vermouth and jiggle it  
25 around; thus the ultimate dry Martini, I guess. A part per



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1 trillion is an extremely tiny quantity. And so there's a  
2 great effort going on to keep -- let the saltwater push far  
3 enough west so that you -- west of the intakes for the state  
4 pumps, so west of those -- which is water south to the City  
5 of L.A., among other things, but primarily south of the  
6 Tehachapis. And so kill a lot of people with health risks.  
7 And so there's a whole mass of issues (unintelligible) all  
8 the way around with water quality.

9 MR. McLAIN: So when it comes down to it, though,  
10 we have a 4(d) exemption or something for the State Water  
11 Resources Control Boards to do their job. I mean I'm just  
12 trying to figure why we're talking about this.

13 MR. GINGRAS: You guys need to do that for steel  
14 head or anything out on the coast. You could have. It's the  
15 same exact issue. They don't have a program or something --  
16 their regulatory (unintelligible).

17 MS. NEUMAN: I'm sorry, what --

18 MR. GINGRAS: There's no program exempting -- no  
19 4(d) program exempting the State Water Resources Control  
20 Board regulatory process on the coast for steel head. I  
21 would say it's not feasible here. It's probably not germane  
22 to this discussion.

23 MS. NEUMAN: It's kind of interesting because for  
24 the 4(d) -- for the -- in the county 4(d) rule, all of the  
25 take prohibitions were invoked, and then there were basically

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1 limits. And so --

2 MR. GINGRAS: Uh-huh.

3 MR. McLAIN: There was no limit for anything like  
4 that, I don't think.

5 MS. NEUMAN: Well, there's -- it's a state program.  
6 It requires federal -- does it require -- I mean they're the  
7 ones issuing the permit.

8 MR. GINGRAS: That's it, there's probably no nexus.

9 MS. NEUMAN: There's probably --

10 MR. McLAIN: There's an EPA nexus.

11 MR. GINGRAS: Is there?

12 MS. NEUMAN: Yeah.

13 MR. McLAIN: Oh, yeah.

14 (Multiple speakers.)

15 MR. GINGRAS: With a regional --

16 MS. NEUMAN: If the EPA said to the state, you take  
17 it over in your Cal EPA program, then there is no federal  
18 nexus there. But that doesn't -- I mean if salmonids are  
19 being taken, that's illegal.

20 MR. GINGRAS: Oh, yeah. But how many federal  
21 enforcement guys do you see go down to the State Board  
22 appointees for killing steel head? You just don't see it.

23 MS. NEUMAN: Yeah. I mean -- I'm assuming that  
24 they probably thought this when they --

25 (Multiple speakers.)

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1 MS. NEUMAN: -- were writing this about the  
2 salmonids. I don't --

3 MR. HOLT: I guess it's --

4 (Multiple speakers.)

5 MR. URKOV: You're touching the export stuff. I  
6 mean, again, the Water Quality Control standards were dealt  
7 with and went back to experts, which --

8 MS. NEUMAN: Well -- yeah. And I think -- I  
9 think --

10 (Multiple speakers.)

11 MS. NEUMAN: The purpose of the workshop is to  
12 really try and understand what's going on here and what  
13 affects green sturgeon. And just because somebody mentions  
14 an activity that's going on, that doesn't mean that we're  
15 going to deal with it.

16 MR. URKOV: Well, in the -- in the -- in the  
17 listing, in the Federal Registry, one of the correlations was  
18 with increased daily outflow. So that --

19 MR. HOLT: Well, it's not due process. There's --  
20 it's -- take the chinook salmon, for example, and there the  
21 take has been set in terms of how many fish are killed at the  
22 screens, the point at which you're exporting water. And that  
23 kind of seems to address the problem.

24 MR. URKOV: That's right. The real --

25 (Multiple speakers.)

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1 MR. HOLT: That's pretty much --

2 (Multiple speakers.)

3 MR. URKOV: -- issue is can you guys prove the  
4 literal taking of a green sturgeon attributable to a State  
5 Water Resources Control Board decision on water allocations,  
6 and probably the answer is no.

7 MS. NEUMAN: Right.

8 MR. GINGRAS: That's right.

9 MR. HOLT: It all collapses down to that point, is  
10 it a doable place. So all the rest is kind of academic.

11 MS. NEUMAN: Uh-huh.

12 (Multiple speakers.)

13 MS. NEUMAN: Okay. Where are we. Ah, the Marine  
14 Mammal Protection Act. Is that where we are?

15 (Multiple speakers.)

16 MS. NEUMAN: Well, it's pretty interesting, very  
17 often we've got one species pitted against another in the  
18 some of the issues we deal with. For example, in our White  
19 Abalone Recovery Plan, we had to think very carefully about  
20 what was going on with sea otters. And this is something  
21 that's still ongoing. We're next trying to coordinate with  
22 Fish & Wildlife Service on how we bring back endangered white  
23 abalone without, you know, physically removing southern sea  
24 otters as they expand into southern California.

25 So here, you know -- again, I don't know and I can



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1 talk to our marine mammal folks and find out whether anybody  
2 has ever looked at deaths of California sea lions as they're  
3 washing up on shore and look at the gut contents and see  
4 whether they have any estimates of -- of, you know --

5 MR. McLAIN: Wasn't that a big issue with  
6 salmonids?

7 (Multiple speakers.)

8 MS. NEUMAN: It's one component --

9 (Multiple speakers.)

10 MR. DAVIDSON: It's a huge issue. And it's not  
11 just the -- you know, basically, the Klamath right now, we've  
12 had major issues with the salmon. The sea lions are staging  
13 right at the river. And anywhere there's a funnel point,  
14 they'll figure it out. And I don't know, I think the Klamath  
15 would probably be a pretty good study area because we've  
16 got -- we know we have a lot of sea lions and we know that  
17 we've got green sturgeon there. And whether there's been any  
18 observations of predation on the sturgeon there, I don't know  
19 if there's white sturgeon in the Klamath, but --

20 MS. NEUMAN: Did we get -- Pete, was it you that  
21 sent us the video of sea lions taking down --

22 MR. DAVIDSON: No, it wasn't me. But I've seen it  
23 several times.

24 MS. NEUMAN: Yeah, we've received a couple of  
25 videos, actually. Again, this is an area where we need more

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1 research and monitoring before we say, hey, this is a  
2 negative or a positive.

3 MR. DAVIDSON: But we know -- I mean there's no  
4 shortage of sea -- California sea lions. They're not  
5 threatened; they're not in danger. Their population is  
6 exploding, and they are -- they certainly target species that  
7 we know we want to protect. And it seems like there should  
8 be some exemptions from the Act that would allow the removal  
9 of problem animals. We're not talking about wholesale  
10 slaughter of all the sea lions stationed at the Klamath.  
11 But, you know, at the Ballard Locks in Seattle, we know that  
12 there's a few animals that come back over and over again.  
13 There's the animal that's at the bottom of the dam that parks  
14 himself there.

15 MS. DRAUCH: (Unintelligible.) I was saying that I  
16 was at a white sturgeon meeting not too long ago, and they're  
17 actually going to align with a number of large brood stock  
18 that they're losing to the sea lions. I think there's a  
19 stretch of -- just several miles where they see the loss of  
20 brood, several per day. So they don't really know what to do  
21 about it. But management -- state management agencies --

22 MR. DAVIDSON: They love to eat the bellies out of  
23 these fish, especially the females. They'll just eat the  
24 eggs and leave the rest.

25 MS. NEUMAN: One of the topics on our Protected

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1 User (unintelligible) Workshops at the last retreat, which is  
2 supposed to be happening in September, was supposed to be how  
3 to implement the Marine Mammal Protection Act in specifically  
4 California, and California where the numbers of some marine  
5 mammals are expanding, and how perhaps the implementation of  
6 the Act should be modified given the expansion of certain  
7 species of marine mammals. I think it got -- I think it got  
8 flushed from the discussion because other issues were more  
9 important. But I think it's something that Jim Lindley, who  
10 used to be our Regional Administrator of the Southwest  
11 (unintelligible) is now thinking about and has been thinking  
12 about. And he's back in Silver Spring now at our  
13 headquarters office.

14 So I don't really know how we would tackle this one  
15 except to say that here's a place where I think you could  
16 quite easily funnel more money into research and  
17 monitoring -- more monitoring because we know that our Marine  
18 Mammal Program has lots of dollar. And we could talk to our  
19 Marine Mammal folks and see whether we could shuttle some of  
20 that money into some directed studies on the feeding habits.

21 MR. HOLT: You might be able to team with Mineral  
22 (unintelligible) Services, too, because I remember when I was  
23 with them they did a large studies program offshore and  
24 worked a number of marine mammal affects of the growing  
25 operations (unintelligible) and migration of sea birds and --

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1 MS. NEUMAN: We've got a similar thing happening  
2 right now with this huge (unintelligible).

3 MR. DAVIDSON: And the harbor seals.

4 MS. NEUMAN: And the harbor seals, right. They're  
5 too small.

6 MR. DAVIDSON: And they smell like skunk.

7 MS. NEUMAN: So -- okay. Well, let's see what we  
8 could do about that.

9 CalFed and CPIA.

10 MR. HOLT: Their intention is positive, but that's  
11 all you can say for them.

12 MR. McLAIN: Yeah. You're saying they're a  
13 positive?

14 MR. HOLT: Their intent is positive.

15 MR. McLAIN: Yeah. Beneficial restoration.

16 MR. GINGRAS: They also do physical projects:  
17 Alteration of habitat, and that sort of thing.

18 MR. McLAIN: Special studies, too, that find out  
19 more information about, you know, fish and stuff.

20 MS. NEUMAN: Commercial sturgeon fishing. Didn't  
21 we cover this? We covered that.

22 Tribal fishing? I mean they've been sharing  
23 information with us for the last -- I don't know how many  
24 years, and their numbers just chug along in a straight line.

25 MR. McLAIN: Yeah. In the update -- or the Status



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1 Review, they listed the tribe will take up more -- they're in  
2 the thousands, so...

3 MS. NEUMAN: Yeah, but the numbers have remained  
4 steady.

5 MR. McLAIN: Which is interesting. I'm just  
6 curious to know what percentage of the Southern DPS fish are  
7 in those thousands every year. If they're taking a thousand  
8 every year of Southern DPS fish, it's got to have an impact.

9 MS. SEEHOLTZ: Aren't they taking them from the  
10 rivers?

11 MR. McLAIN: I'm not sure where. That's kind of  
12 what I assume. It's below spawning grounds on the way --

13 MR. ISRAEL: You know, we do see like a moderate to  
14 large degree of differentiation between the Klamath  
15 population and the south (unintelligible) River fish. And so  
16 while there might be some migration going on, it seems like  
17 that there's some moderate genetic isolation. And so it  
18 means that there's probably not a lot of spawning of Southern  
19 population fish and northern population fish going on in the  
20 same population in the same stock in the same river.

21 Otherwise we'd see -- you wouldn't see as much  
22 differentiation as we do. So there -- you know, there might  
23 be fish up there that are migrating into the river that are  
24 spawning, but I think most people -- I -- I was under the  
25 belief that if you saw a fish in the river, people tended to

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1 believe that any fish in the river was a spawning fish. I  
2 don't know if that's correct or not. We don't know if that,  
3 in fact, is true of -- you know, if there's a proportion.  
4 of the fish that are in the river that are actually spawning.

5 MR. DAVIDSON: Do we know how far up river they're  
6 getting, these fish?

7 MR. ISRAEL: So -- so salmon on the Klamath River  
8 go up as far as -- if she follows on the main stem, and then  
9 they go up the Salmon River five or ten miles.

10 MR. DAVIDSON: But where -- where are the tribes  
11 setting their nets?

12 MR. ISRAEL: Oh. The Urok fish only on the lower  
13 50 miles. So there's about 50 miles upstream of tribal  
14 fishery. And then on the Trinity side, they catch a small  
15 number of fish, much like -- and they're -- we just don't  
16 really have a good sense for the stock on the Trinity. We  
17 don't know if it's different or the same.

18 MS. NEUMAN: Illegal poaching, bad. We just don't  
19 know what the relative importance of it is.

20 MS. SEEHOLTZ: Well, I must say, on our river where  
21 the greens are kind of just a little -- I mean we have  
22 fishermen all the time, but we have a lot of poaching. I  
23 mean I hear about that just as often as I do about catching  
24 fish. So, you know, in our case, I would say it's more on  
25 the major side.

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1 MR. DAVIDSON: They're taking spawners?

2 MS. SEEHOLTZ: Yeah.

3 MS. NEUMAN: They're piling up in front of --

4 MS. SEEHOLTZ: No, actually it's further down --  
5 down river.

6 MR. McLAIN: Of salmon?

7 MS. SEEHOLTZ: No, they're not poaching --

8 (Multiple speakers.)

9 MR. ISRAEL: Just to get sort of -- I know we're  
10 not on No. 4, but I know we're doing two things. It seems  
11 like if there was ways to, you know, have no in-river harvest  
12 of sturgeon, period, that would be an easy way to delineate  
13 poaching and illegal harvest -- I know that would like  
14 deprive some stakeholders potentially of their livelihood and  
15 guides, but, you know, regardless of whether they're white or  
16 green sturgeon, just thinking in-river harvest, you know, is  
17 illegal because you're assuming that all in-river fish are  
18 spawners regardless of their species. But, you know, that  
19 might be one modification of activity. And I don't know how  
20 much communication there is between protected resource people  
21 and folks who are working on the Fish & Game Commission  
22 retrofitting of the sturgeon, you know, regulations, but it's  
23 something to consider.

24 MS. NEUMAN: I don't even know anybody on the Fish  
25 & Game Commission.

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1                   MR. GINGRAS: They're lovely people. They make  
2 really hard decisions. That's the truth. I would say we  
3 might want to consider further defining "poaching," because  
4 with sturgeon, there's some illegal commercialization of body  
5 parts, and then there's the guy who catches the fish that's  
6 one inch too short or one inch too long. Those are both  
7 instances of poaching, but they have much different impact  
8 than illegal commercial fishing.

9                   (Multiple speakers.)

10                  MR. GINGRAS: So when I look at that, I think  
11 illegal commercialization just because of how I've been  
12 trained.

13                  MS. NEUMAN: I'm wondering what type of poaching --

14                  MS. SEEHOLTZ: To tell you the truth, I don't know.  
15 I just know that there have been -- that's reported, there  
16 have been set vines in the river that they try to -- people  
17 will be going down the river and look to see if sturgeon  
18 (unintelligible) the same, and then they'll go out and check  
19 it out and realize that it's attached to its head line, and  
20 they'll cut them free.

21                  MR. GINGRAS: Probably illegal commercialization.

22                  MR. DAVIDSON: Yeah.

23                  MS. NEUMAN: So --

24                  MR. GINGRAS: Unless you're going to go towards  
25 funding of enforcement, it's not -- it's just not something



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1 we can -- you can deal with a 4(d) rule -- unless you want to  
2 talk about the governor's budget, which I think you should.  
3 That would be a novel thing for this program to go over the  
4 governor's budget.

5 MR. McLAIN: You'll get us in trouble quickly.

6 MS. NEUMAN: Okay. How many enforcement agents  
7 have been seen at the Feather River?

8 MS. SEEHOLTZ: I think we have one assigned to us  
9 occasionally.

10 MS. NEUMAN: At DWR?

11 MS. SEEHOLTZ: No. No, we have -- they  
12 occasionally set up office at the hatchery, and generally  
13 it's when the salmon first come in. They're there a lot to  
14 kind of get the guys that are positioned off the apron.

15 MS. NEUMAN: So they're wardens.

16 MS. SEEHOLTZ: Yeah.

17 MS. NEUMAN: Have you ever seen a NMFS enforcement  
18 person?

19 MS. SEEHOLTZ: Never.

20 MS. NEUMAN: I'm sure the NMFS folks will say,  
21 "Freshwater. I don't work there."

22 MS. SEEHOLTZ: Yeah. No, not that -- I mean we  
23 definitely have -- we have some, so if we see anything, we  
24 can give them -- I mean there's DFG wardens, but I have no  
25 contact with them.

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1                   MR. GINGRAS: It's a huge problem. I think you've  
2 probably heard, at our sturgeon workshops, I mean we had  
3 Nancy Foley, the Chief of Enforcement, show up, and people  
4 always said, "Well, don't make new rules if you're not going  
5 to enforce your old rules." She said, "Well, we do enforce  
6 them, but we've got" -- at that time, so say a month and a  
7 half ago, "We had like 180 wardens, field people for the  
8 entire state. That's all of the ocean stuff, all of the  
9 terrestrial stuff, all of the aquatic stuff." So it's a  
10 giant problem. It's a giant problem. But I don't know how  
11 you deal with it.

12                   MR. McLAIN: NMFS is even worse. I mean we have  
13 three agents here to cover the whole Central Valley.

14                   MS. SEEHOLTZ: Actually, part of our FERC  
15 Relicensing is -- they're talking about us funding more  
16 positions, the wardens and...

17                   MS. NEUMAN: So Delta-Bay Enforcement Program. Oh,  
18 this is -- what was that?

19                   MR. McLAIN: What was that? Oh, that was what  
20 Diane mentioned.

21                   MR. GINGRAS: Fish & Game wardens who have a  
22 dedicated task of focusing on the Bay-Delta issue.

23                   MS. NEUMAN: Okay. Inadequate long-term funding.

24                   MR. GINGRAS: Same thing.

25                   MS. NEUMAN: Yeah, I mean the listing of green

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1 sturgeon -- the actual listing of the species itself, I mean  
2 there's a certain amount of -- hopefully, it's based on  
3 what's coming into the Southwest Regional Office. We'll have  
4 to see what happens there. But typically when we list a  
5 species, we have a certain amount of money that comes to us  
6 in base, and then very typically we will either, you know --  
7 I would think that that money at least at the Regional Office  
8 is going to be used primarily by us to carry out some of  
9 these regulatory things we need to do, the 4(d) rules or  
10 critical habitat for the recovery planning. There's probably  
11 not going to be a whole lot after that. But once some of  
12 these regulatory things are done, there could be a balance  
13 there, and that's sort of the place where we are with white  
14 abalone right now. And we actually have a competitive  
15 program every year where proposals are submitted to us and we  
16 review those proposals, and we get small grants, maybe 5 to 6  
17 to -- I think it was at 12,000. So we're not talking about  
18 large amounts of money. We are talking about for native  
19 species. For white abalone, for example, we had base funding  
20 of 150K that runs through our Regional Office. We have money  
21 for whatever (inaudible), but also comes into our science and  
22 research that's probably a little bit more. And they use it  
23 pretty much all for research and monitoring and what they do  
24 on white abalone. So none of that money --

25 MR. GINGRAS: But let me suggest, the problems with

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1 green sturgeon are of such a gigantic magnitude that little  
2 piddley tens of millions of dollars isn't going to hack it.

3 MS. NEUMAN: Tens of millions?

4 MR. GINGRAS: Little piddley tens of millions is  
5 not going to hack it. If you want to do something for green  
6 sturgeon --

7 (Multiple speakers.)

8 MR. GINGRAS: -- hire enforcement people and put  
9 them in the rivers during the spawning season and put them on  
10 the locations where people know they can go to get green  
11 sturgeon. That will be, I promise you, your best thing for  
12 the problem. I don't know how you do that, but that would be  
13 a good thing.

14 MS. NEUMAN: Well --

15 MR. ISRAEL: Just a caveat, though, the problem's  
16 not with reproduction; the problem, in fact, is getting  
17 juveniles to be sub-adults or something like that. You know,  
18 like if there's a bottleneck in production somewhere, you  
19 know, that can maybe trump your notion of throwing police on  
20 spawning areas, which they do in some places where there's,  
21 you know, people assigned to watching the forest roads or  
22 something like that. They might even have people who watch  
23 the spawning areas for some of the Russian sturgeon or  
24 something like that.

25 MS. DRAUCH: They do for the white sturgeon. They



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1 have volunteers watching --

2 (Multiple speakers.)

3 MR. GINGRAS: I don't mean to suggest that by  
4 putting wardens on the spawning grounds it would make  
5 (unintelligible) every year. But if you don't put wardens on  
6 the spawning grounds, you will lose --

7 MR. ISRAEL: Right.

8 MR. GINGRAS: -- seventy-, eighty-year-old fish.  
9 And that's a problem. You'll also lose fifteen- to  
10 twenty-year-old fish. So sturgeon --

11 MS. NEUMAN: Has there been any attempt by Cal Fish  
12 & Game to organize volunteer watchdog groups? I mean that's  
13 sort of a grass-roots program, I would think.

14 MR. GINGRAS: Well, the whole exercise of  
15 (unintelligible), I think, mobilized a lot of caring people.  
16 So I think we didn't intend it, but it happened. There are  
17 lots of people reporting people poaching sturgeon now, many  
18 more than there were before.

19 MS. NEUMAN: Okay. Well, our enforcement folks are  
20 right down the hall, right next to the marine mammal folks.

21 MR. McLAIN: I think we should get a whole bunch of  
22 attorneys, too.

23 MS. NEUMAN: No. No, no, no.

24 (Multiple speakers.)

25 MS. NEUMAN: Development of fishery management

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1 programs.

2 (Multiple speakers.)

3 MR. McLAIN: But that could be a good limit.

4 MR. ISRAEL: It could be a good step in identifying  
5 where the limiting factors might be and then, you know,  
6 determining the course of action on the (unintelligible) or  
7 we could manage for abundance or -- you know, what is the  
8 goal?

9 MS. NEUMAN: Are we talking about (unintelligible).

10 (Multiple speakers.)

11 MR. McLAIN: You could say we'll exempt a  
12 NMFS-approved FMEP penalty. Right?

13 MS. NEUMAN: Right.

14 MR. McLAIN: We could exempt a NMFS-approved  
15 FMEP -- that could be one of the limits in a 4(d). It could  
16 become some sort of fishery management plan. So if the  
17 fisheries in the Northwest Region follow some sort of  
18 management plan, we could exempt them. Right?

19 MR. ISRAEL: You could exempt our activities --

20 (Multiple speakers.)

21 MR. ISRAEL: -- or the bycatches even.

22 MR. GINGRAS: Isn't that what an FMEP does by  
23 definition? I don't know the mechanism whereby you go from a  
24 piece of paper FMEP to taking an exemption.

25 MR. McLAIN: They tried that with salmon, didn't

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1 they?

2 MS. NEUMAN: Yeah. I mean there's some question as  
3 to whether or not the limit concept that was used in the  
4 salmon 4(d) rule is going to be used for green sturgeon. A  
5 lot of people at NMFS said that they don't think that that  
6 constituted a 4(d) rule or works. So I'm not sure what we're  
7 going to be doing, but -- there may not be a limit, but there  
8 could -- I think it's just a language thing. We may not be  
9 using the term with it, let's just put it that way. But,  
10 yeah, FMEP is probably something that we could look into.

11 MR. ISRAEL: Just to understand, that would be an  
12 action like a state take, right, like a state files an FMEP,  
13 right?

14 MR. GINGRAS: Right.

15 MR. McLAIN: Right.

16 MR. ISRAEL: Okay. That's what I thought.

17 MS. NEUMAN: All right.

18 MR. McLAIN: We could put that under the CalFed or  
19 other restoration items, FRCD, something like that,  
20 restoration.

21 MS. NEUMAN: Okay. Bank protection by government  
22 agencies.

23 MR. McLAIN: We did talk about that.

24 MS. NEUMAN: We did talk about that.

25 MR. HOLT: Flood Control area, the same thing.

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1 MR. McLAIN: Right.

2 MS. NEUMAN: Sport Fish Restoration Program.

3 MR. GINGRAS: That's a funding program that does  
4 projects on -- a range of projects, goes to research and  
5 monitoring to education, outreach, and fiscal habitat  
6 modification. I don't know whether you want that one in  
7 there. Same thing with the Bay-Delta Enhancement --

8 MR. DAVIDSON: I'll bet there's some way to  
9 influence where that money is spent in a way that it helps  
10 green sturgeon.

11 (Multiple speakers.)

12 MR. DAVIDSON: Otherwise it's probably neutral.

13 MS. NEUMAN: And FERC Relicensing.

14 MS. SEEHOLTZ: And that (unintelligible).

15 MS. NEUMAN: Okay. And when --

16 (Multiple speakers.)

17 MS. SEEHOLTZ: Well, it depends on --

18 (Multiple speakers.)

19 MR. McLAIN: It depends on the project.

20 MS. NEUMAN: Well, let's talk about it from the  
21 species perspective. When, Alicia, will we know more about  
22 the -- when will the information be released to the public,  
23 do we know?

24 MS. SEEHOLTZ: That's when the actual -- probably  
25 when the actual license gets issued.



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1 MS. NEUMAN: Okay.

2 MS. SEEHOLTZ: And then --

3 MS. NEUMAN: Is there a deadline for that?

4 MS. SEEHOLTZ: There is. And then the -- they're  
5 giving us like the first year after the issuance to develop  
6 plans for it. And so it will be after that. So that's going  
7 to kind of depend on when we actually get the license. So if  
8 we get it next year, within a year we'll have some answers.  
9 If it's five years, we won't know. So that's the thing  
10 that's kind of iffy. We're kind of in a -- in a -- just  
11 hanging out, waiting to see what happens.

12 MS. NEUMAN: Okay.

13 MS. SEEHOLTZ: Because we've started to push  
14 forward and we were told to wait. So we're kind of sitting  
15 on stuff right now.

16 MS. NEUMAN: Okay. Just sort of an aside, is there  
17 funding for DWR to continue the monitoring that you have been  
18 doing in the Feather River?

19 MS. SEEHOLTZ: Yes, because a lot of that is based  
20 on -- a good portion of that is based on (unintelligible).

21 MS. NEUMAN: Okay.

22 MS. SEEHOLTZ: So a good portion of that is -- that  
23 is --

24 (Multiple speakers.)

25 MS. NEUMAN: Okay.

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1 MS. SEEHOLTZ: The thing with the screw traps,  
2 though, that provides information like at the Red Bluff  
3 Diversion Dam. But talking amongst the people who are  
4 working with screw traps and green sturgeon, it seems like  
5 that's an ideal situation because of the turbulence that the  
6 fish can't orient themselves. So we have been locating in  
7 the river (unintelligible) and sturgeon probably. The only  
8 way I could see us getting anything is if we were to  
9 (unintelligible) trap down at the outlet. And fishing  
10 pressure that's going on down there, it probably would be  
11 destroyed. So chances are of that ever happening are slim.

12 (Multiple speakers.)

13 MS. SEEHOLTZ: Effectively, I'm not so sure about  
14 that.

15 (Unintelligible audience discussion.)

16 MS. SEEHOLTZ: Yeah, I've done that before. But  
17 unfortunately it wasn't this year. This year is different.  
18 And so I'm going to see if I can push to get some people out  
19 there to help me out, because they're there now. It's just  
20 getting things into place and hoping that -- because I have  
21 some artificial substrates. Hopefully we can get them to  
22 stay there without somebody finding them and moving them or  
23 pulling them out or whatever. And the larvae nets, at least  
24 that can take care of that.

25 MS. NEUMAN: Okay. We're at 3:45. Who's

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1 exhausted? Who needs a break? Anybody?

2 MR. McLAIN: I need to get going pretty soon.

3 MS. NEUMAN: Okay. Let's talk about, I guess, what  
4 have we -- you know, we've covered a lot of these questions  
5 in our discussions.

6 No. 4 is perhaps the question that we didn't  
7 really -- we kind of got into it a little bit, talking about  
8 ways that some of these activities might be modified --  
9 sorry.

10 MR. McLAIN: I think you're right, we have.

11 MS. NEUMAN: I'm just looking at what I have  
12 written there. There's a lot of negatives -- wait, only one.  
13 Okay. Ways that we can modify activities or programs that do  
14 not contribute to the conservation of green sturgeon to  
15 minimize their affects. It's basically, what can we do or  
16 what kinds of suggestions can we make or how can we regulate  
17 through our 4(d) rule some of these activities to make them  
18 more green sturgeon friendly. And if you'd like to take a  
19 break and come back and tackle that one -- I think we've  
20 already covered question No. 5.

21 MR. GINGRAS: Cool.

22 MS. NEUMAN: Do you want to take a break?

23 MR. McLAIN: You know what we could do, do you want  
24 to limit it to just those items we think are --

25 MS. NEUMAN: Just the negatives?

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1                   MR. McLAIN:  -- applicable to 4(d), the whole 4(d)  
2                   situation, like if we just circled them so we -- because I  
3                   have a feeling we could cut out a lot of the ones that -- you  
4                   know?

5                   MS. NEUMAN:  Okay.

6                   MR. McLAIN:  Would that -- would that save time?

7                   MS. NEUMAN:  Yeah.  I was trying to get a sense of  
8                   how many negatives we have here, too.  If we could just focus  
9                   in on the negatives.  Let's put these up, too.

10                  We could take a break for five minutes.  Let's take  
11                  five.

12                  (Brief recess.)

13                  MR. GINGRAS:  I have a parking lot one.  Green  
14                  sturgeon are at the extreme southern end of their range here.  
15                  You have to recognize that somehow.  I don't know how.

16                  MS. NEUMAN:  They're at the extreme southern end of  
17                  their range, even though historically we believe that they're  
18                  southern -- southern extent of their range.

19                  MR. GINGRAS:  Well, the --

20                  MS. NEUMAN:  Well --

21                  MR. GINGRAS:  -- San Joaquin?

22                  MS. NEUMAN:  I guess you're talking about spawning  
23                  rivers.

24                  MR. GINGRAS:  Yes.  Yeah, not their foraging zone  
25                  or something like that.  The extreme southern end of their



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1 range. And, you know, fishes and other animals that are at  
2 the extreme ends of their range do tend to fluctuate in  
3 abundance over time. And I just want everybody to know that  
4 we recognize that. And I think you guys recognize that. But  
5 when you're factoring in the thumb screws, you know, I hope  
6 you -- I hope you remember that, too.

7 MS. NEUMAN: Right.

8 MR. GINGRAS: Parking lot, as I said.

9 MS. NEUMAN: Yeah, that's interesting, because  
10 Steve and Mary at NMFS are thinking about expanding their  
11 coastal array so that they actually put some sensors in south  
12 of -- of -- I'm trying to remember, you know, what the  
13 southernmost location is. But basically their array extends  
14 out of the San Francisco Bay and to the north. But they're  
15 thinking about putting some sensors I think as far south as  
16 Cornell. And I don't think we know what proportion of  
17 Southern DPS fish may be moving into the bays and estuaries  
18 to the south of the San Francisco Bay.

19 MR. DAVIDSON: I can tell you at least some of the  
20 anecdotal information that I have -- this is going back into  
21 the seventies -- about large bycatches of green sturgeon off  
22 the Mahar River in Monterey Bays, Moss Landing area,  
23 hundreds, hundreds of fish.

24 MR. GINGRAS: We just had a fish impinged on a PG&E  
25 Power Plant -- a green sturgeon impinged on the PG&E Power

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1 Plant at Moss Landing. So they do get around, yeah. But in  
2 terms --

3 MS. NEUMAN: And, again -- right. In terms of  
4 spawning rivers, yeah -- I mean it is the southernmost extent  
5 of the range. Coastally they may travel much further to the  
6 south. And this is where long-term data would be really,  
7 really more valuable, because we certainly know that the  
8 larvae are temperature sensitive. I'm sure that somebody out  
9 there knows, and I don't know, at what rate -- well, I don't  
10 know whether we have a good feel for how in-river  
11 temperatures have changed over time because we have so many  
12 operations going on as well. I don't know whether anybody at  
13 the river picked apart what's happening naturally -- I  
14 shouldn't say "naturally," but what's happening without  
15 obvious anthropogenic alteration of habitat versus changes in  
16 the environmental conditions -- global conditions. So I  
17 don't -- does that -- I don't -- I don't know, and I don't  
18 know whether we would be able to attribute declines in the  
19 species to something that we really have very little control  
20 over or something that we could consider occurring naturally  
21 because the species is at the southern end of their range  
22 versus -- versus other things that we are doing that we may  
23 be able to control --

24 MR. GINGRAS: Right.

25 MS. NEUMAN: -- in some way. And I'm sure that

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1 other people who dealt with endangered species listings have  
2 had to tackle this issue as well.

3 MR. GINGRAS: Uh-huh.

4 MS. NEUMAN: In fact, I'm trying to think --

5 MR. GINGRAS: You'll hear about that tomorrow, I'm  
6 sure.

7 MS. NEUMAN: I'm trying to think of whether or not  
8 some of our East Coast sturgeon species are in the same --  
9 are in the same boat. And Atlantic sturgeon, for example --  
10 gosh, I'm trying to remember now what the -- oh, gosh, how  
11 far south are they?

12 MS. DRAUCH: Georgia.

13 MS. NEUMAN: Maybe Georgia.

14 MS. DRAUCH: Uh-huh, at least, I know.

15 MS. NEUMAN: Anyway --

16 MR. GINGRAS: Part of the reason I mentioned this  
17 is because I always have worked with stakeholders, and it's a  
18 matter of crisis of expectation. You know, if you implement  
19 a whole bunch of rules here and really crack down on things,  
20 it's still because they're at the extreme southern end of  
21 their range, still because we know that they have cycles of  
22 good recruitment and not good enough recruitment. You may  
23 have a crisis of expectation, you know, because you might go  
24 20 or 30 years without a noticeable change in the abutments  
25 or something like that. But it's always something that I

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1 talk about when I talk with stakeholders. Like you may not  
2 see this, but recognize processwise, systemwise, you know,  
3 we're doing the right thing. So keep the nose to the grind  
4 stone for the next 30 years and know you're doing a good  
5 thing.

6 MS. NEUMAN: Okay. Let's tackle question No. 4.  
7 We just boxed a couple of these activities in red thinking  
8 that maybe we could just focus in on these things and maybe  
9 brainstorm and come up with some suggestions of how we might  
10 be able to lessen the negative affects that some of these  
11 activities have through our 4(d) rule process. We also  
12 recognize that many -- and don't -- this box is gone. Okay?  
13 That squiggly line means we didn't mean to include that one.  
14 And I also just wanted to point out here that lots of these  
15 ideas that have been generated, if they don't come into play  
16 in the 4(d) rule realm, I'm sure that our Section 7  
17 biologists when they start dealing with consultations on  
18 green sturgeon are going to be thinking about a lot of these  
19 ideas that we've generated here and might be thinking about,  
20 you know, including a reasonable and prudent alternative that  
21 involves installing a temperature-control device to new dams  
22 that's being proposed for construction or something like that  
23 down the line. So these ideas won't go to waste. They'll be  
24 condensed and circulated among all the folks involved with  
25 the green sturgeon. Okay?



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1                   So fish passage at bypasses. Again, some ways  
2                   that -- some ways that this particular activity -- I guess  
3                   we'll call it the activity --

4                   MR. ISRAEL: That's a negative activity.

5                   MS. NEUMAN: It is. It is.

6                   (Multiple speakers.)

7                   MS NEUMAN: How we can turn that around.

8                   MR. GINGRAS: You can provide upstream fishing  
9                   passage for adults, assuming the criteria exists and is  
10                  feasible. And then there's the downstream aspect, also, and  
11                  you could, you know, require that the topography is such that  
12                  it brings, you know, whatever, a reasonable pace, something  
13                  like that.

14                  MR. ISRAEL: I think you mentioned, too, like  
15                  ramping down at a reasonable rate is crucial.

16                  MR. HOLT: Or find head works or something for the  
17                  bypass to allow you to do that.

18                  MS. WANG: Could you repeat that? Modifying --

19                  MR. HOLT: Modifying head works, dams, stop walls  
20                  or something.

21                  MR. ISRAEL: If poaching is a problem on the  
22                  bypasses, perhaps increasing times we think there might be  
23                  stranding or increased poaching.

24                  MR. GINGRAS: If we were to implement the upstream  
25                  passage and the downstream modifications, you would not

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1 strand those fish, and then there wouldn't be that  
2 attraction. But potentially you -- you know, the regulators  
3 would say, well -- the land managers would say, well, we  
4 can't provide upstream passage, and we can't provide  
5 downstream passage. So, you know, maybe you can have  
6 something -- if you maintain an impediment, you have to use  
7 some anti-poaching measures or something like that.

8 MR. URKOV: Yeah, the ramping you could do -- I  
9 don't think anything physically -- you can build a structure  
10 and passages and bypasses, because you can't build a ladder.  
11 You'd probably want to build a wall.

12 MR. GINGRAS: Could you increase the bastion of  
13 time during which fish passage was better? Again, you could  
14 trend towards minimizing the take, but not perhaps  
15 eliminate --

16 MR. URKOV: If you could control the ramping rates  
17 so you avoid stranding or at least concentrate it so you can  
18 quickly salvage or something like that. But a physical -- it  
19 would be a weird structure.

20 MR. GINGRAS: Yeah. That would be for the  
21 engineers.

22 MS. SEEHOLTZ: We actually have.

23 THE REPORTER: I'm sorry, could you please speak  
24 up.

25 MS. SEEHOLTZ: I'm sorry. They actually do have

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1 some that are proposed because they were talking about having  
2 us put one in on the Feather.

3 MR. URKOV: Where?

4 MS. SEEHOLTZ: At the Sunset Pumps. And there  
5 actually is one that was discussed at the lower bypass. But  
6 basically it's like a stepping -- it's a series of ponds,  
7 like ponds where they just have it kind of going on the side,  
8 and they just have each one -- so the fish would go into a  
9 pond and sort of get up that and into the next one and have  
10 it like a step stair up over the structure. So it's a long  
11 one. I forget what the exact name is. But I can get it to  
12 you, if you want. I actually have pictures and diagrams of  
13 it.

14 MR. URKOV: Yeah, I've got some, too.

15 MR. HOLT: Or even down here in that lower sort of  
16 bypasses where it's so flat that it might be feasible to  
17 build something that functions like a ladder, I mean -- but  
18 it's different where you've got a 13-foot tether to try and  
19 get past the...

20 MR. GINGRAS: Screening and diversion?

21 MS. NEUMAN: Yeah, screening and diversion --  
22 screening at diversions. More of them? Less of them? I'm  
23 trying to figure out what the impact of the diversion itself  
24 is, the spacial and temporal -- basically, the spacial  
25 positioning of the diversion, and then how that matches up

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1 with the temporal movement of the green sturgeon as they pas  
2 that diversion. Seems like -- you know, if we can match up  
3 those two things.

4 MR. GINGRAS: In terms of 4(d) rules, you know, you  
5 could perhaps exempt from take those people that develop a  
6 screening plan for a reach-up river, and part of that plan  
7 is, you know, incorporating the latest and greatest, you  
8 know, criteria.

9 MS. NEUMAN: Uh-huh.

10 MR. ISRAEL: Something kind of an optimum  
11 operational, you know, division in framework for different --  
12 depending on periods it would be at that location. And it  
13 seems like we still need to get some basic information on  
14 exposure to screens and fish activity at screens. It seems  
15 like there needs to be more research on that before we can  
16 start telling people what they need to do. But maybe just an  
17 operational plan during the period when fish are going by to  
18 minimize, you know, if it's a threat because some locations  
19 might not be a threat, like we were saying. In which case,  
20 maybe they just need to validate it's not a threat by doing  
21 some studies at that location to show that in July they're  
22 not entraining (unintelligible) when there's a diversion at  
23 X cfs, you know. Sort of turn the volume of flow --

24 MR. HOLT: It would be kind of tough to pull off  
25 because back there in August it's a peak time to be pulling



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1 water through the plants, you know, for crops, you know.

2 That's tough.

3 MS. NEUMAN: Does anybody know whether any of these  
4 private -- let's say private land owners who are diverting  
5 water, has anybody ever entered into an agreement with folks  
6 like this to allow NMFS to purchase equipment, for example,  
7 that could be placed at the diversion to help us monitor --  
8 or -- I don't know -- or NMFS coming in and actually doing  
9 monitoring activity at their diversion to try and determine  
10 how many fish are moving into that diversion or at least get  
11 an idea of --

12 MR. URKOV: They've got a huge thing going on at  
13 PG&E. I mean --

14 MS. NEUMAN: But -- I mean I know that -- that's  
15 big time. I guess I'm talking about sort of small.

16 MR. URKOV: Putting a small screw trap on a small  
17 diversion? Is that what you mean?

18 MS. NEUMAN: Yeah. I mean -- yeah, I guess so.  
19 And trying to figure out -- I mean if we could -- obviously  
20 our resources are limited. But if we can try to set up an  
21 array -- a sample array in diversions for different factors  
22 spread over a different area -- I'm not talking about  
23 implementing a monitoring program at every diversion, but  
24 trying to get a sense of how many fish are lost, relatively  
25 speaking.

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1 MR. URKOV: It's a great idea.

2 MS. NEUMAN: But would people buy into that? Would  
3 people allow it? Do people want NMFS on their land with  
4 their equipment?

5 MR. URKOV: Looking for endangered species?

6 MS. NEUMAN: Yeah.

7 MR. URKOV: It's not going to happen.

8 MS. NEUMAN: No way?

9 MR. URKOV: You might find some brave municipality,  
10 some (unintelligible) -- if you had an agency that already  
11 had funding in place for a place like a screen might present  
12 an opportunity and you could try it out in there to see what  
13 you're pulling with it open. But I can't imagine that you're  
14 going to find somebody with an unscreened diversion that's  
15 going to say yeah --

16 (Multiple speakers.)

17 MR. GINGRAS: DWR did this in the nineties. They  
18 actually went out and put them out on a bunch of farmers' --

19 MS. SEEHOLTZ: Actually, I'm thinking of the one we  
20 did (unintelligible). We had a facility that actually had a  
21 screen and an unscreened right next to each other, and so we  
22 put a spike on the end of both of them and did it for a  
23 24-hour period over two days, and they did it two years in a  
24 row to see what the affect was of the screen on the diversion  
25 compared to the unscreened.

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1 MS. NEUMAN: (Unintelligible.)

2 MS. SEEHOLTZ: It was basically Delta smelt, so --  
3 but we haven't (unintelligible), if you're interested, or --  
4 it's an area, but I don't know geographically if this is a  
5 desirable area.

6 MR. HOLT: We have some data at Red Bluff where the  
7 pumps that -- you know, which we have tested -- you know,  
8 that pass fish and water, the group (unintelligible) that are  
9 screened downstream of the pumps. And we don't get many  
10 juveniles getting entrained there, but we have a few larvae.  
11 But the (unintelligible) screw traps that we have in the  
12 river are more prominent there than they are coming through  
13 the pumps. We do have some data going back probably  
14 somewhere in the mid nineties -- maybe ten years' worth of  
15 data, close to it. We have some data there. And I was  
16 talking with Alicia about we have a requirement with the  
17 Feather Water District at the Feather River to do some  
18 monitoring that was a requirement imposed as part of the  
19 approval for getting the contractor juveniles. It was  
20 imposed with the steel head in mind. But there's some  
21 possibilities that might be explored there for collaboration  
22 between that water district and DWR for their mutual benefit.  
23 So I suspect they would be amenable to doing something --  
24 they have unscreened diversions right now, but -- coming off  
25 the river to a fine channel (unintelligible).

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1                   MR. GINGRAS: This was kind of addressed elsewhere,  
2 but since that other topic doesn't have a red box around it,  
3 I'll stick it in here with screening and diversion. The  
4 South Delta Fish facilities are predominantly -- they're not  
5 screens; they're behavioral barriers. So they require the  
6 fish to a positive action to avoid going through into the  
7 pumps. And, you know, you might want to require that they  
8 screen those with positive barriers. You might also want --

9                   MS. NEUMAN: So you're talking about the state and  
10 federal salvage facilities.

11                  MR. GINGRAS: Right.

12                  MS. NEUMAN: Okay.

13                  MR. GINGRAS: Okay. You might also -- if you can't  
14 do that, you might have them do something that I think would  
15 be really fabulous, and that is figure out what is the --  
16 it's called salvage efficiency of the current system.  
17 Because once you get salvage efficiency, then when you have  
18 salvage and efficiency, you can figure out what was coming in  
19 and what's going through the louvers. So, you know, we've  
20 told you guys that we don't think the salvage data is very  
21 good, but if you knew the salvage efficiency, then the data  
22 would be a lot more interesting.

23                  MS. NEUMAN: Uh-huh.

24                  MR. GINGRAS: I don't know how you put that into a  
25 4(d) rule.



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1           MR. HOLT:  You have an existing central effort to  
2   try and improve things here, and it's on -- I'm not familiar  
3   with how -- however it's going, but I know there's already a  
4   substantial effort underway to try and improve on that.  And  
5   it might be that a modest or, you know, modification of the  
6   existing effort could be worked out.  But I'm not the right  
7   person to address that.  I know that there is something  
8   there, a substantial thing.  It's terribly important  
9   financially, and it's critical.  Our senior management is  
10  involved in discussions about that.

11           MS. NEUMAN:  Uh-huh.

12           MR. GINGRAS:  I'll give you one more example of why  
13  this is important.  What you guys reported is salvage.  
14  That's just -- that's an expansion from the number of fish  
15  that people actually handle to the number of fish that  
16  probably get put into trucks and brought to the Delta and  
17  released.  There's a whole other component and that's the  
18  fish going through the louvers into the pumps into Southern  
19  California.  And that multiplication factor -- you know, the  
20  fraction of fish going through the louvers may be humungous  
21  or it may be small.  And that's the truly important measure.

22           MS. NEUMAN:  Once the fish go through the louvers,  
23  what is their fate?  Adios?

24           MR. HOLT:  Right.

25           MS. NEUMAN:  No way out?

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1 MR. HOLT: That's right.

2 MR. GINGRAS: Correct. Except on the end of a  
3 fishing pole, and you just never hear about that.

4 MR. HOLT: What you might do -- if Jim Smith is  
5 back tomorrow, he could address this for you -- is  
6 extrapolate from the -- at Red Bluff years ago where we had  
7 louvers designed, they were operative for about 20 years or  
8 something. They did a -- managed to deflect most of the fish  
9 (unintelligible) through the facility, which was acceptable.  
10 I seemed to remember it being over five percent or something  
11 like that.

12 MR. GINGRAS: That's not too bad.

13 MR. HOLT: Those were chinook. I may be off. Jim  
14 would know.

15 MS. NEUMAN: Uh-huh.

16 MR. HOLT: That would give you a (unintelligible)  
17 for what you could expect in Tracy.

18 MS. NEUMAN: What was his name again, because I  
19 don't think that --

20 MR. HOLT: Jim Smith.

21 MS. NEUMAN: Oh, Jim. He'll be here tomorrow.  
22 Okay.

23 MR. HOLT: Yeah. He's been in Red Bluff for a long  
24 time.

25 MS. NEUMAN: Okay. Should we move on to our final

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1 activity that we'll tackle today and see if we can come up  
2 with some good recommendations? Commercial fishing harvest  
3 and bycatch. I think we already talked about a lot of the --  
4 a lot of the things that at least -- you know, the Fish &  
5 Game -- is it Cal Fish & Game or Fish & Game Commission?

6 MR. GINGRAS: Fish & Game Commission.

7 MS. NEUMAN: -- Fish & Game Commission at this  
8 point in terms of recreational harvest in California. It  
9 will be good to talk to the folks in Oregon and Washington  
10 about what they have done. I think it was -- I think their  
11 new regulations were implemented last year or a year and a  
12 half ago in terms of protecting green sturgeon. And they may  
13 actually have some data now that's -- I think they're  
14 suggesting that these new regulations have helped. They've  
15 seen the catch rates of green sturgeon going down, and  
16 they're attributing -- they're saying that's a positive thing  
17 and that the catch rate is going down is attributable to  
18 these new regulations.

19 MR. DAVIDSON: What is it they're doing?

20 MS. NEUMAN: What is it they're doing differently  
21 than what California has been doing?

22 MR. DAVIDSON: No. Differently from what they had  
23 been doing in the recent five years?

24 MS. NEUMAN: You know, I need to check my notes.

25 But in terms of recreational fishing, I think they've done

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1 things like implemented zero bag limits, reduced slot sizes.  
2 I don't know if they a report card --

3 MR. GINGRAS: They do.

4 MS. NEUMAN: They have report cards. But I don't  
5 know whether any of that is brand new. I don't know whether  
6 that's --

7 MR. DAVIDSON: What about on the commercial side?

8 MS. NEUMAN: On the commercial side, I'm not sure.  
9 I'd have to check with my counterpart, Scott Rumsey, up in  
10 the Northwest. And he is in direct contact with folks like  
11 Olaf Longness and -- I can't remember who the person is at  
12 WVFW.

13 MR. GINGRAS: One of the things they do, they have  
14 an annual quota that has to get out either -- between sport  
15 and commercial. And so these annuals -- the quota is  
16 adjusted annually. And they have the change in slot limit.  
17 Those are -- those are two of the big ones that affect the  
18 commercial guys. But there is something more -- something  
19 about seasons even for the commercial side.

20 MS. SEEHOLTZ: What are they using the annual quota  
21 on?

22 MR. GINGRAS: Basically, the same thing that we do.  
23 They bag fish, and they have somebody de-bundle the fish, you  
24 know, a certain size range. And the last couple years  
25 they've been giving about 10 percent of the estimated



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1 abundance of fish in their slot size.

2 MS. SEEHOLTZ: Okay.

3 MS. NEUMAN: Any other ideas for minimizing affects  
4 of commercial and recreational fishers?

5 MR. GINGRAS: Well, yes. We -- we could encourage  
6 them to do an FMEP even though their fish aren't listed.  
7 Because our fish are up there, we could have them -- you  
8 know, we could do it jointly or something like that. But we  
9 need to consider the affect of their fishing on our fishing.

10 MS. NEUMAN: Right. Well, I think, again, in light  
11 of Josh's information, some of which is actually published  
12 where we're working in coordination with our Northwest  
13 Region, with Oregon and Washington, and it may be that part  
14 of our 4(d) rule will address the commercial and recreational  
15 fisheries in Washington and Oregon, and that would create  
16 something like an FMEP exemption.

17 MR. GINGRAS: Uh-huh.

18 MR. HOLT: I'm sitting here thinking about the  
19 bypasses. I'm having trouble visualizing how we expect to  
20 get fish out of the bypass. You mentioned something about  
21 ladders. These things don't work with ladders very well.  
22 They if they're a little gradient. But what you can  
23 expect -- for example, Sutter Bypass up in Butte Creek which  
24 goes north for a ways and then goes east and heads into the  
25 Sierras, and -- so that big bend up there just north of

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1 Sutter Buttes (unintelligible) area called the Butte Seek,  
2 which is an area without a defined waterway, which it just  
3 floods in the winter and then the water's gone. Not sure how  
4 we expect to get a fish out of there so the juveniles can  
5 drift down the creek out the Feather River into Sacramento.  
6 That's no problem. If we had an adult trapped up there, it  
7 seems like, you know, it's a dead end. I don't see how you  
8 get them back into the Sacramento River because you don't  
9 normally have a flow in non-flood stages coming over the pike  
10 and down. Whereas the Yolo Bypass, you could -- you know,  
11 again, it would be the same problem with the adults. Once  
12 they get up there, they're just kind of at a dead end. If  
13 you could, I think, control the inflows in the Yolo Bypass  
14 enough so they have a gradual flow in it, it help ramp down  
15 and maybe encourage them to get out. I don't know.

16 MS. NEUMAN: So there will have to be different,  
17 perhaps, strategies for different bypasses.

18 MR. HOLT: Maybe. And I'm not sure there's an  
19 answer to it. I have a problem visualizing it. And Paul  
20 Ward will be here --

21 MS. NEUMAN: This is undoubtedly --

22 MR. HOLT: -- to talk about this. He really knows  
23 that country well.

24 MS. NEUMAN: Okay. Thank you.

25 Any other comments? Did we miss any activity there

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1 at the end that somebody wanted to offer a great way of  
2 eliminating the impact on the green sturgeon through our 4(d)  
3 rule that we overlooked here?

4 MR. DAVIDSON: Besides the exports?

5 MR. ISRAEL: We didn't do research and monitoring.

6 MS. NEUMAN: We didn't do water flow. All right.

7 Let's tackle that one real quick. One last -- I did put a  
8 red box around it; I just missed it.

9 MR. HOLT: That might be more truthfully postponed  
10 until tomorrow because there's a lot of people here with --

11 MS. NEUMAN: Jeff McLain actually recommended that  
12 we tackle it here because he didn't think that -- what we're  
13 going to do tomorrow, just so you all know, for those of you  
14 who are coming back, is, we are going to create an electronic  
15 version of our activities and programs list and maybe  
16 condense a little bit where there's some overlap. We'll  
17 present that to the group tomorrow, but we're going to start  
18 off with question number two as a blank slate because we  
19 don't want to bias anybody sitting in the room. And we're  
20 afraid that the group tomorrow -- or least Jeff was thinking  
21 that the group tomorrow won't mention that, that it may not  
22 come up. So we thought we'd tapped into your knowledge just  
23 briefly at least for water flow issues in case we don't get  
24 any of it tomorrow.

25 MR. HOLT: I expressed my thoughts earlier that

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1 what we have now is greater flow during the summertime than  
2 you had, you know, three dam eras, that is. And from the  
3 Sacramento below the dams is colder than it used to be as  
4 well. But I can see -- see it being really a decrease in  
5 water flow (unintelligible). So I kind of wonder about the  
6 need for it. I don't see how you can necessarily do it  
7 without running into severe problems with protecting the  
8 chinook populations. Because our releases from the Shasta  
9 right now during the summer are truly driven by what we  
10 believe, at least for temperature control. And if you up  
11 those releases, then it would be making trade-offs where  
12 you -- you're likely to be running out of water sooner in the  
13 year.

14 MS. NEUMAN: Uh-huh.

15 MR. HOLT: So you keep as much of the river cold as  
16 long as possible, and you have to -- we huddle with --  
17 basically with the fishery agencies and the folks making an  
18 educated guess and informed decisions between our operations  
19 and fisheries experts as to what the trade-offs are and move  
20 the compliance point up river so you sacrifice as few fish as  
21 possible. And you can't afford to let the whole river go too  
22 hot.

23 MS. NEUMAN: Right.

24 MR. HOLT: So you do segments of it. And if we try  
25 to increase water flows, my concern is that you would be



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1       jeopardizing that. So seems like they -- (unintelligible)  
2       will be here tomorrow, and she'll tell us about the  
3       operations of the CVP. She's part of that group  
4       (unintelligible). I don't see how you increase water flow  
5       and I -- I don't debate the fact that the white sturgeon  
6       apparently showed some responses to things that are cut back  
7       or something. So the best we do is what we can do.

8               MS. NEUMAN: Right. So your comments touch on  
9       involvement specifically. But what about the timing of --

10              MR. HOLT: That's probably kind of hard to modify,  
11       too, and still be in compliance with the winter run. See,  
12       it's driven by -- right now by the temperature-control  
13       component. And then, of course, you get that high summer --  
14       if you didn't have that, that worked to limit the impact  
15       on -- it seemed -- you could either supply water for  
16       agriculture, to maintain water quality of the Delta --  
17       actually, I think it's about two weeks out of the year which  
18       maybe ag demands rise how much water is in use here -- ag or  
19       power production. Usually it's flood control, water quality  
20       in the Delta, temperature control in Sacramento, navigational  
21       need through the Delta. So there's a lot of --

22              MS. NEUMAN: I was under the impression that  
23       90 percent or something like that of the water -- maybe I'm  
24       misinterpreting, but I thought that about 90 percent of the  
25       water diverted is going directly into irrigation of fields.

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1                   MR. HOLT: Well, of what's diverted. But I mean  
2                   our (unintelligible) in the dam are driven by trying to  
3                   control the water -- you know, going from Red Bluff. Those  
4                   are your users south of Red Bluff. So that doesn't really  
5                   affect how much we're letting out of the dam and what you  
6                   have to work with. Most of what goes into the fields in  
7                   Sacramento Valley or most of what's diverted goes into ag,  
8                   that's right. And a lot of that comes back into the river  
9                   where it gets into the Delta because a lot of it just is used  
10                  to flood these rice fields and stuff. So I don't know how  
11                  much of it is actually evaporated or transpired. It varies a  
12                  lot. And part of the Anderson/Cottonwood Irrigation District  
13                  near Redding, they have high -- about 20 acre feet per acre  
14                  per year, an incredible amount of water. They're trying to  
15                  grow pastoral sand bars.

16                  MS. NEUMAN: They're trying to grow what?

17                  MR. HOLT: They're growing pasture grass -- oh,  
18                  sandbars. They have a senior water right. It's a very  
19                  ancient water right by California standards. And so they --  
20                  they have a right to draw on that water to apply about 20  
21                  acre feet per acre as part of their -- it's incredible.  
22                  That's three times what it takes for rice. And rice only --  
23                  the evaporation is about three (unintelligible). Most of  
24                  that comes back into the river. So it's very different from,  
25                  say, the San Joaquin or something.

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1                   MR. GINGRAS: I think there's a potential to manage  
2 flows depending on the water year. And -- so you needn't  
3 necessarily (unintelligible) year in and year out during a  
4 drought. But what I've read about what society in the  
5 nineties thought about flow requirements for white sturgeon  
6 and what I've seen from our telemetry studies about how white  
7 sturgeon move and respond to flows, I think the -- one of the  
8 major issues is attracting flows during the winter and  
9 spring. So if you're into a hydrology thing where you guys  
10 are able to capture the peak flows in the dams so that all  
11 the river sees is this, then we failed to attract the  
12 sturgeon up to the spawning grounds. And probably, also,  
13 there's an affect on the survival of the eggs and larvae.  
14 But the notion the altering of the hydrology or the  
15 hydrograph, that's a big deal. And we absolutely don't know  
16 how to deal with it. But if we start taking all the tops off  
17 the flows, then we potentially have a fish passage problem.

18                   MR. HOLT: We still have a lot of water going down  
19 in the winter. There's more water -- the high flows are  
20 still in the wintertime. The peaks aren't as high as they  
21 were historically because our basic mission is flood control.  
22 And so we don't let out more than 79,000 cubic feet per  
23 second, however, compared with how we flood out places out of  
24 the Tehama, this sort of control point. And the amount of  
25 water coming in from uncontrolled side flows can easily

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1 double the amount of flow at (unintelligible) at Red Bluff.  
2 So when we have a of heavy rains, then basically they tend to  
3 scale back to kind of minimal releases from Shasta to sort of  
4 alleviate flood problems. And as soon as the flood peak is  
5 passed, then they up the flow to about 40,000 cfs or  
6 something. And so it tends to smooth out -- we still have a  
7 higher peak in the winter than you do in the summer, but it's  
8 not as high as it was historically. So, again, this  
9 is something that Ann can talk about with more knowledge than  
10 I.

11 MR. GINGRAS: So we may not currently have the  
12 capacity to alter the kind of peak flows -- the kind of flows  
13 that attract adult sturgeon upstream. But we might seek to  
14 develop that capacity by increasing the elevation of the dams  
15 and that kind of stuff. And we would want definitely to  
16 manage for that if we increase our capacity. Also, the same  
17 thing, if because of urbanization the streams get more  
18 flashy, you know, that would be a problem for migration flow.  
19 You need to see if that's what's (unintelligible) not time  
20 enough to get the sturgeon upstream. But it's a big problem  
21 there. There has been insufficient research on what it takes  
22 to get sturgeon upstream and successfully spawning.

23 MS. NEUMAN: Uh-huh.

24 MR. HOLT: Yeah, maybe that's something we can  
25 change or something. Maybe push it close to being flood



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1 levels or something deliberately without flooding to attract  
2 them or something -- or (unintelligible). It's kind of like  
3 that problem that we have -- how is it you can take a deer in  
4 Oregon and move them up to Minnesota or something, and he  
5 reproduces at the right time? It isn't absolutely to the  
6 day, but it seems like it's per the rate of change that's  
7 triggering them. So maybe the sturgeon are triggering on the  
8 rate of change of the hydrograph rather than the absolute  
9 volume or something.

10 MR. GINGRAS: We could do more research before we  
11 spend a billion dollars on it. Thank you. That was a good  
12 meeting.

13 MS. NEUMAN: Yeah, thank you.

14 Josh, did you have something that you wanted to add  
15 about research, the reason why -- we saw research as sort of  
16 being a positive thing. So did you have suggestions on that  
17 for --

18 MR. ISRAEL: No.

19 MS. NEUMAN: -- how -- okay.

20 MR. ISRAEL: Yeah, I -- we didn't include it in the  
21 discussion, but if there's any way to minimize the affects of  
22 research and monitoring. There's no good way to minimize the  
23 affect research and monitoring if we want to do it. But if  
24 we can modify it and just keep it funded.

25 MS. NEUMAN: I mean, you know, I think it makes

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1 sense for some laboratory studies to be conducted with fish  
2 that perhaps are not taken out of the wild, which is the  
3 value I see in perhaps captively propagating the group of  
4 Sacramento River fish. But then I know that there would be  
5 problems there because we only have ten brood stock, and we  
6 don't know what funding -- what kind of size would need to be  
7 introduced because of limited genetic...

8 MR. HOLT: The (unintelligible) funds the captive  
9 (unintelligible) in the winter run, though.

10 MS. NEUMAN: I'm sorry?

11 MR. HOLT: I say we have a captive brood stock in  
12 the winter run.

13 MS. NEUMAN: Right. I just think that -- yeah.  
14 And I don't know what the limitations might be for this  
15 particular group of animals. There may be segments that are  
16 very well suited to carry out some laboratory setting on F1  
17 generation animals from these brood stock. And so I think  
18 there's one way that we can try and think about where --  
19 wherever we can when we do research about minimizing take of  
20 wild fish, you know. If there are other ways to do that in  
21 order to study programs, then we should. But we need to know  
22 what these animals do in the wild.

23 Okay. Thanks so much --

24 MR. GINGRAS: Thank you all.

25 MS. NEUMAN: -- everybody for attending today. And

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1 I guess I have your contact information. If you didn't sign  
2 up, please do sign up on the sign-up sheets at the back of  
3 the room. Some of you we'll see back tomorrow. And if you  
4 would like a copy of the court reporter, Sandy's notes, we're  
5 happy to distribute those to any of the participants. Send  
6 Susan an e-mail and let us know if you're interested in  
7 receiving the notes from the meeting. We will probably be  
8 condensing some of the products of this meeting in a format  
9 that is, number one, electronic and a little bit more of a  
10 summary-like in nature, and I'd be happy to distribute that  
11 to you as well. But let us know if you're interested in  
12 receiving that kind of material from us. We won't send it to  
13 you if you're not interested.

14 (The hearing was concluded at 4:44 p.m.)

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R E P O R T E R ' S C E R T I F I C A T E

STATE OF CALIFORNIA        )  
  )  SS.  
COUNTY OF SACRAMENTO     )

I, SANDRA L. HOPPER, a certified shorthand reporter,  
do hereby certify that the foregoing 224 pages comprise a  
transcription of the proceedings had at the hearing in the  
hereinbefore-entitled matter.

Dated this 28th day of June, 2006, at Sacramento,  
California.

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SANDRA L. HOPPER, CSR NO. 7110



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