

NATIONAL MARINE FISHERIES SERVICE  
GREEN STURGEON PUBLIC SCOPING WORKSHOP

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Thursday, June 1, 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:    Okay.  Good morning, everybody.  My  
2   name is Melissa Neuman.  I work for the National Marine  
3   Fisheries Service in Long Beach, California, and I'm going to  
4   be leading the workshop today along with Susan Wang, who's  
5   also with the Marine Fisheries Service and who is at the back  
6   of the room.  And please make sure that all of you have  
7   signed in.  We also have some other NMFS folks participating  
8   in today's workshop who you may or may not know.  Jeff McLain  
9   is with our NMFS Office in Sacramento.  Diane Windham is  
10  sitting next to him.  And is Bruce here yet, Bruce Oppenheim?  
11  Okay.  Some of you may know Bruce.  But we are the NMFS  
12  representatives here at the workshop today.  Please reach out  
13  to any of us if you have questions regarding the logistics.

14                 But I'll make a few announcements about logistics.  
15  First of all, if you need to use the bathroom, they are out  
16  these double doors.  You sort of turn to the left, and  
17  they're on the left-hand side.  And you need a code to enter  
18  the bathroom.  The code is listed on the sign there at the  
19  back of the room, 324.  Okay?  We also have some ice water at  
20  the back of the room, some sodas.  Please feel free to help  
21  yourself at any point during today's workshop.  There's some  
22  ice tea back there as well.  And if we run out in the back,  
23  just go to the back room there and there's a kitchen and open  
24  the fridge, and there's some more refreshments in there.

25                 The format for today's workshop is going to be a

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1 series of presentations in the morning from those of you who  
2 have agreed to give a presentation today. And hopefully  
3 these presentations will focus on water resources user  
4 issues. And in the afternoon -- we'll take a break at one  
5 point. I'm not quite sure what time that break will occur,  
6 right around lunchtime. And we'll come back in the afternoon  
7 and continue with the discussion of what we heard earlier in  
8 the day, but also that discussion is going to be guided by  
9 some focal questions that I'll present in my presentation  
10 which I'm going to be giving in a few minutes. We're going  
11 to be focusing in on five questions that involve identifying  
12 activities and programs that may affect green sturgeon,  
13 identifying how those affects play out either directly or  
14 indirectly on green sturgeon, how those particular activities  
15 might be modified to provide some conservation advantage to  
16 green sturgeon, and our fifth question focuses in on how  
17 these activities might affect other species, other programs,  
18 water resource users, et cetera.

19 We did hold a workshop yesterday. Some of you  
20 attended that workshop. The workshop was supposed to focus  
21 on recreational fishing, the recreational fishing community.  
22 Really, there was only one person at the workshop yesterday  
23 who represented I think the recreational fishing community.  
24 There were folks from Cal Fish & Game as well. And we did a  
25 lot of the same things yesterday that we're going to be doing

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1 today. And so to start off our discussion this afternoon,  
2 we'll probably show you some of the products that we produced  
3 yesterday and kick off our afternoon discussion by taking a  
4 look at this list of activities and programs that we  
5 identified yesterday, and we'll be asking you to add to that  
6 list if you see anything that wasn't included on the list,  
7 and then really focus in on water resource user issues and  
8 focus our discussion.

9 We will probably do break-out sessions this afternoon  
10 because we have a much larger group today than we did  
11 yesterday. And we might be breaking out into groups of maybe  
12 about ten or so people. We'll have NMFS folks leading some  
13 of those break-out sessions, but we'll all be focusing in on  
14 the same five questions.

15 At the end of the morning presentations, if we decide  
16 that we'd like to stay together as a group instead of  
17 breaking into smaller groups, please voice that to us. And  
18 if we want to stay together as one large group, we can  
19 rearrange the chairs here into a big U, and we can just all  
20 participate together. If it is going to enhance our  
21 conversations and our discussions to break out into smaller  
22 groups, we can do that as well. So we'll sort of wait until  
23 the afternoon to make that decision.

24 With regard to lunchtime and where you might be able  
25 to go for lunch, many of you are probably more familiar with

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1 Sacramento than I am, but there are some maps at the back of  
2 the room, and there's also a cafeteria and a coffee shop  
3 upstairs on the second floor. So if at any point you need a  
4 snack or coffee, feel free to leave the room, go upstairs to  
5 the second floor. And at lunchtime, feel free to use the  
6 cafeteria or grab a map and wonder out on your own. I think  
7 we can have an hour for lunch.

8 Okay. Did I miss any logistics? That covers it all.

9 Okay. I'm going to kick off the workshop with a  
10 presentation. The first part of the presentation will focus  
11 in on some of the biological aspects of green sturgeon and  
12 talk about the process that we've used at NMFS to list the  
13 species and basically talk about what comes next and what  
14 the -- what the Endangered Species Act, Section 4(d) rule is  
15 and what our process is for establishing the 4(d) rule.

16 I first want to start off with a little bit of  
17 background about the Endangered Species Act. It was enacted  
18 in 1973. It's administered by the U.S. Fish & Wildlife  
19 Service and by the National Marine Fisheries Service  
20 depending on the species. Its purpose is to identify  
21 threatened and endangered species and then to conserve and  
22 protect those endangered species and the ecosystems upon  
23 which they depend.

24 The Endangered Species Act offers two ways to  
25 conserve and protect threatened and endangered species. In

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1 the first case, it can prohibit the take of threatened and  
2 endangered species either by the statute or by rule making.  
3 And, secondly, it requires that federal agencies not  
4 jeopardize threatened or endangered species or adversely  
5 modify their habitat.

6 Some definitions here: "Endangered species" are  
7 species that are in danger of extinction throughout all or a  
8 significant portion of its range. You'll see the acronym,  
9 SPOIR, throughout the presentation -- or I think there's a  
10 couple of times in the presentation, and it refers to the  
11 "Significant Portion Of Its Range" as part of the definition.

12 "Threatened species" are those that are likely to  
13 become endangered within the foreseeable future throughout  
14 all or a significant portion of its range -- of their range.

15 And "species of concern" are species for which NMFS  
16 has some significant concerns regarding their status and the  
17 threats that they face but currently we have insufficient  
18 information to indicate the need for a listing.

19 And I mentioned these terms because for green  
20 sturgeon we have one population that we've just listed as  
21 threatened, the Southern Distinct Population Segment of green  
22 sturgeon. And I'll define "Distinct Population Segment" in  
23 just a moment or talk about how we -- how we came up with the  
24 process for defining a Distinct Population Segment in the  
25 case of green sturgeon. And in one Distinct Population

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1 Segment, the Northern Distinct Population Segment was placed  
2 on our Species of Concern list. NMFS has no regulatory  
3 control over Species of Concern just endangered and  
4 threatened species. But when we can, we try to encourage  
5 conservation of species that are on our Species of Concern  
6 list.

7 This flow chart shows how the listing process  
8 progressed for green sturgeon. It's a generalized flow  
9 chart, and I'm going to make it more specific to what  
10 happened with green sturgeon as I go through this process.  
11 You'll see here on the bottom there's a time line. We are  
12 under a regulatory time line when it comes to listing species  
13 that we are petitioned to list. And so this whole process  
14 started in the late 1990s. We were petitioned to list the  
15 North American green sturgeon.

16 In '98 we had published a finding -- a 90-day finding  
17 which said in the case of green sturgeon that we thought that  
18 the petition had merit. At that point, we had one year to  
19 publish a proposed rule. And during that year's time, we  
20 formed a Biological Review Team. That Biological Review Team  
21 was made up of federal biologists primarily NMFS biologists,  
22 but we also had biologists from the USGS on the Biological  
23 Review Team as well. And they were tasked with generating a  
24 Status Review of the species. And we used that in addition  
25 to compiling some of the public comments that we received

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1 after our 90-day finding and doing some data compilation of  
2 our own to publish our proposed rule.

3 And with that proposed listing, we made some  
4 determinations. We determined how to define a species with  
5 regard to green sturgeon. We try to make a determination on  
6 extinction risk for the species. We identified threats to  
7 the species and try to prioritize those threats. We  
8 identified conservation efforts that were currently underway  
9 and tried to figure out whether they offset extinction risk  
10 of the species. And then we issued our proposed rule.

11 During the first go-round, our proposed rule found  
12 that neither Distinct Population Segment of green sturgeon  
13 warranted listed. And we were sued on that 12-month finding.  
14 It was really -- it's called a "12-month finding" when you  
15 don't list. It's called a "proposed rule to list" when you  
16 do propose a listing.

17 We were sued on that 12-month finding. And the  
18 courts remanded the case back to us and told us that NMFS did  
19 not consider whether green sturgeon was endangered throughout  
20 all or a significant portion of its range. It was that  
21 significant portion of its range part of the definition that  
22 we failed to consider in our 12-month determination that a  
23 listing was not warranted. So back to NMFS it came.

24 Now a couple of years have passed. We decided to  
25 re-constitute the Biological Review Team because more

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1 information had been collected during that time. And we  
2 published a proposed rule in April of 2005 based on some of  
3 this new information we collected and determined that the  
4 Southern Distinct Population Segment -- again, I'll get to  
5 how we broke the species apart into these two distinct  
6 population segments in just a moment. But we determined that  
7 the Southern Distinct Population Segment warranted a listing  
8 under the Endangered Species Act as threatened, and that the  
9 Northern Distinct Population Segment did not warrant a  
10 listing.

11 We underwent another public comment period, a Peer  
12 Review of that proposed rule, and then finally in April of  
13 this year we came out with the final rule that did not  
14 deviate from our proposed rule.

15 This listing for green -- for the Southern Distinct  
16 Population Segment of green sturgeon becomes effective as of  
17 July 6th, I believe -- I think it's the 6th -- of 2006.

18 So I keep on mentioning our determination of what a  
19 species was in the case of green sturgeon. And we relied on  
20 the work of Josh Israel and Bernie May at UC Davis and the  
21 work that they do in their genetic lab there. They had been  
22 looking at six -- is it six -- I haven't counted them -- six  
23 or seven systems along the West Coast, and they collected  
24 genetic samples from individuals that were collected from  
25 each of these sites: The Rogue River in Oregon, the Umpqua

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1 in Oregon, the Klamath in Northern California, San Pablo Bay,  
2 the Sacramento River, and then the Columbia River estuary.

3 And through their genetic analyses, they generated  
4 this dendrogram to look at the degree of genetic similarity  
5 among the samples that were collected in each of these  
6 locations. And what you can see here is that the Rogue,  
7 Umpqua, and Klamath samples clumped together, and the  
8 San Pablo Bay, Sacramento, and Columbia samples clumped  
9 together. And this formed the basis for our delineation  
10 between the Southern Distinct Population Segment and the  
11 Northern Distinct Population Segment. --

12 This is the area of concern here. This is a blow-up  
13 of this area which shows the system a lot more clearly. So  
14 let's focus in over here. The Southern Distinct Population  
15 is comprised of the Sacramento River, which is located right  
16 here, the Feather River, and the San Joaquin River, and, of  
17 course, all of their tributaries, but I'm really focusing in  
18 on the main stem rivers and -- in this particular figure.  
19 And the Northern Distinct Populations Segment included the  
20 Eel River and everything to the north of there: The Eel  
21 River, the south fork of the Trinity, the Klamath, the Rogue,  
22 the Umpqua, and the Columbia, and really all the way up.  
23 But, again, this is all I'm showing on the map here.

24 Josh is here today and is going to talk a little bit  
25 more about the genetic population structure of green

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1 sturgeon, so I won't spend much time talking about it  
2 anymore.

3           Okay. Now on to some life-history characteristics of  
4 green sturgeon. In the Sacramento River we believe that  
5 adults migrate into rivers between about March and July with  
6 a peak occurring in May through June. The annual spawning  
7 success rate likely varies depending -- greatly depending on  
8 conditions. The eggs are spawned in the rocky bottom.  
9 There's no pelagic dispersal stage of the larvae. We know  
10 from laboratory experiments done at UC Davis that  
11 temperatures above 20 degrees C are lethal. We believe that  
12 those larvae start making their way downstream and that the  
13 juveniles may be spending anywhere from one to three or four  
14 years in the -- in the lower estuaries, and they're probably  
15 leaving the system at some point when they reach the size of  
16 about one to two and a half feet.

17           Once they move out to the coastal environment,  
18 they're staying fairly close to shore. This we know from  
19 some tagging work that biologists at Santa Cruz and up in  
20 Seattle are doing. They've got a hydroacoustic array laid  
21 out along the coast, and they tag fish. And basically their  
22 work shows that green sturgeon are not moving into waters  
23 deeper than about 100 meters when they're out along the  
24 coast. They're spending most of their immature lives out  
25 here in the ocean. They are maturing, the females at about

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1 13 years of age, males about 9 years of age. But they are  
2 moving into estuaries during the spring and fall, and they  
3 exhibit aggregative behavior presumably to feed but nobody's  
4 really sure why they're moving into estuaries.

5 Here's a summary of that biological information I  
6 just gave you, but I may have missed a couple of points. So  
7 first off, I don't think I mentioned that there are three  
8 specific river systems where we know spawning occurs. The  
9 Sacramento River is the only system within the boundaries of  
10 the Southern Distinct Population Segment, and then the  
11 Klamath and the Rogue Rivers are the only rivers where  
12 spawning is known to occur within the boundaries of the  
13 Northern Distinct Population Segment. I think I mentioned  
14 that spawning habitat requirements are uncertain, and  
15 obviously these requirements may affect spawning success and  
16 recruitment success, but that's what we have not been able to  
17 pinpoint, what combination of variables improve recruitment  
18 rate, improve spawning success rates. We've got to hear more  
19 about that if you have information available.

20 I mentioned that water temperatures -- high water  
21 temperatures likely affect recruitment success, and I think  
22 it's largely recognized that low flow rates also have affect  
23 on recruitment success.

24 Moving on to the adult stage, I think I mentioned  
25 these points, but I don't think I mentioned that limitations

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1 on their upstream passage likely affects spawning success  
2 rates, and that currently we have no direct estimates of  
3 green sturgeon abundance. There's a huge gap in our  
4 understanding of the species.

5 This series of tables was generated by Jeff McLain.  
6 And it's a nice series of tables because it shows the timing  
7 of occurrence of green sturgeon in the Sacramento River and  
8 Delta system, the locations, and it breaks apart by life  
9 stage. So the top table is the adult stage, and then we work  
10 our way down here.

11 The -- the data are divided up by location.  
12 Locations are located here in the leftmost column. And  
13 you'll see here that the degree of shading in each month of  
14 the year gives you some relative understanding of abundance  
15 during that month of the year. The darker-shaded boxes show  
16 relatively -- or are supposed to represent relatively higher  
17 abundance than these lighter-shaded boxes.

18 So here for adults, again, females greater than about  
19 13 years of age, males greater than about 9 years of age. In  
20 the upper Sacramento, we have evidence of their occurrence  
21 from March through July with a peak occurring from April  
22 through June. In San Francisco Bay estuaries, we have  
23 relatively moderate levels of abundance occurring from April  
24 all the way through October. These fish are probably being  
25 detected on their way up river but also on their way back

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1 down river after spawning, presumably.

2 For larvae and post larvae, we have information from  
3 two locations: The Red Bluff Diversion Dam and the  
4 Glenn-Colusa Irrigation District on the Sacramento River.  
5 And you'll see here that the peak in occurrence of larvae is  
6 June through July at both locations. And the total time  
7 period for occurrence is May through October at Glenn-Colusa.

8 Juveniles greater than ten months of age and less  
9 than about three years old are basically found throughout the  
10 Delta and Suisun Bay throughout the entire year. And coastal  
11 migrants, adults between 3 to 13 years of age -- or between 3  
12 to 9 years of age are found out along the coast between  
13 January and May in moderate abundance and November through  
14 December. This absence of occurrence here from June through  
15 October may be because samplings didn't occur during that  
16 time or it may just be that most of those individuals are in  
17 estuaries at that period of time.

18 We made an attempt to identify the threats to the  
19 Southern Distinct Population Segment of green sturgeon in the  
20 Sacramento and Feather Rivers. We didn't include the  
21 San Joaquin River in this analysis because we have no data to  
22 suggest that green sturgeon occurred there historically or  
23 currently. So we didn't conduct a threat assessment for the  
24 San Joaquin.

25 In doing our threat assessment, we considered five

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1 listing factors. These are the factors that NMFS is required  
2 to consider when we list a species. The first factor is  
3 modification curtailment of destruction of habitat. The  
4 second listing factor is over-utilization of the species  
5 through fishing research, a variety of different  
6 possibilities. Listing factor No. 3 is disease and  
7 predation. Listing factor No. 4 is inadequacy of regulatory  
8 mechanisms. And listing factor No. 5 is basically all other  
9 anthropogenic factors.

10 So the thing I wanted to point out is that in both  
11 the Sacramento and Feather Rivers by far the largest number  
12 of threats fall into this first category, Habitat  
13 Destruction, Modification, Alteration, et cetera. We believe  
14 that impassable barriers, other adult migration barriers,  
15 insufficient flow, increased temperatures, and water  
16 diversion are some of the more important threats to the  
17 species in both the Sacramento and in large part in the  
18 Feather River as well. But we recognize that there are other  
19 threats that the species faces.

20 One of the factors that we honed in on during the  
21 listing of this species was lost spawning habitat. We relied  
22 on a threat -- on a habitat assessment that was done by Steve  
23 Lindley, et al., in 2004, for chinook salmon. And this map  
24 highlights the Central Valley of California. You can see the  
25 map up in the right-hand corner showing a blow-up of this

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1 blue area, which is just the Central Valley. And all of  
2 these red dots here are barriers. This is a blow-up of the  
3 area that we're concerned about for the Southern Distinct  
4 Population of green sturgeon. And in this Habitat Assessment  
5 that was done for chinook, a large amount of habitat to the  
6 right of these red dots was considered lost spawning habitat.  
7 Given that chinook and green sturgeon share certain  
8 life-history characteristics and share certain  
9 spawning-habitat requirements, we used this Habitat  
10 Assessment for chinook to guide our decisions for green  
11 sturgeon as well. We did not quantify the amount of habitat  
12 that's actually been lost behind dams, but we are doing the  
13 Habitat Assessment for green sturgeon right now. And  
14 hopefully at the end of this study, we'll be able to quantify  
15 more exactly how much habitat -- spawning habitat specifically  
16 has been lost.

17 We also relied on our own source fishery and the data  
18 to guide some of our decisions. And these are the salvage  
19 data from the state salvage facility and the federal salvage  
20 facility located in the Delta. These are very long-term data  
21 sets. The state's facility has been in operation since 1965  
22 and has been salvaging from that time through the present.  
23 And the federal facility, at least as to green sturgeon in  
24 their records, from 1980 through the present.

25 And we know that there are many caveats in taking a

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1 look at these data. The methodology involved in salvaging  
2 green sturgeon at these facilities has been questioned. And  
3 I think what we've decided to do is really take this data at  
4 face value. And if you take a look at the actual number of  
5 observed green sturgeon at these salvage facilities in the  
6 1960s and '70s at the state facility, the numbers on average  
7 were higher than they were in the '90s and 2000s -- late  
8 '80s, '90s, and 2000s. And so that's where we will end our  
9 analysis for now until we can gain more information about the  
10 methodologies that were used specifically at the state  
11 facility because it is the longer-term data set. And if we  
12 can gain more confidence in these data, we may actually try  
13 to -- try to quantify and analyze the data a bit better. But  
14 right now what we -- what we're pointing out here is that the  
15 actual observed numbers of fish in earlier decades -- this is  
16 true for the state facility as well, although the type series  
17 isn't as long -- were higher than they have been recently.  
18 And this is a large scale on these (unintelligible). So  
19 we're looking at orders of magnitude there.

20           When we assessed extinction risk for the Southern  
21 Distinct Population Segment, we focused in on these bulleted  
22 items here. There's only one significant spawning area in  
23 the Southern Distinct Population Segment which we feel poses  
24 a great risk to the DPS as a whole. We know that there's  
25 been some quantity of lost spawning habitat above dams. We

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1 know that the threats due to habitat alterations in the  
2 system remain. And our best source of fishery independent  
3 data exhibits a negative trend.

4 We definitely considered protective efforts that are  
5 currently underway, plan to occur in making our decision, and  
6 these are some of those protective efforts that we  
7 considered. Our final determination was to list the Southern  
8 Distinct Population Segment as threatened.

9 Next steps for threatened species. Threatened  
10 species under the Endangered Species Act do not necessarily  
11 have all of the Section 9 prohibitions invoked for them. An  
12 endangered species automatically have all the Section 9  
13 prohibitions invoked to protect them. But for threatened  
14 species, we have a bit of flexibility.

15 Yes?

16 MR. SMITH: You might want to mention that it's  
17 different for Fish & Wildlife Service.

18 MS. NEUMAN: Okay. I didn't know that it was  
19 different.

20 MR. SMITH: It is different.

21 MS. NEUMAN: Okay.

22 MR. SMITH: We -- Fish & Wildlife Service obligated  
23 regulations many years ago to apply by regulatory all the  
24 protections of endangered species that presently exist. So  
25 they're different.

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1 MS. NEUMAN: Okay.

2 THE REPORTER: Could I have your name, please.

3 MR. SMITH: Jim Smith, Fish & Wildlife Service.

4 THE REPORTER: Thank you.

5 MS. NEUMAN: Thank you.

6 So at least for NMFS, we have some flexibility in  
7 deciding which of those Section 9 prohibitions we will invoke  
8 for the Southern Distinct Population Segment of green  
9 sturgeon. And that is the reason why we're here today; we  
10 need to figure out which activities are really posing a  
11 threat to the conservation needs of the Southern Distinct  
12 Population Segment, which activities may be -- we may  
13 consider for exemption under our 4(d) rule, and basically  
14 talk a little bit about how the 4(d) rule can help streamline  
15 certain research programs, certain activities.

16 We also have some other next steps including  
17 designation of critical habitat. We are under a regulatory  
18 time line for designating critical habitat. Our designation  
19 is supposed to be issued by April of next year. And we also  
20 have recovery planning to look ahead to and an update of our  
21 Status Review in five years.

22 I wanted to mention what the Section 9 prohibitions  
23 are. Section 9 of the Endangered Species Act says that it is  
24 prohibited to import or export. It's prohibited to take  
25 threatened or endangered -- well, prohibited to take

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1 endangered species within the U.S. or the territorial sea of  
2 the U.S. It's prohibited to take these individuals upon the  
3 high seas. And it's prohibited to possess, sell, deliver,  
4 carry, transport, or ship species taken in violation of (B)  
5 and (C). It's prohibited to deliver, receive, transport,  
6 carry, ship in interstate or foreign commerce. It's  
7 prohibited to sell or offer for sale in interstate or foreign  
8 commerce any of these species. It's prohibited to violate  
9 any regulation pertaining to threatened species pursuant to  
10 Section 4 of the Endangered Species Act. And the definition  
11 of the word "take" is harass, harm, pursue, hunt, shoot,  
12 kill, trap, capture, or collect. So it's basically anything  
13 you do other than look at the species.

14 Now, in the ESA section, the 4(d) rule says that  
15 threatened species may invoke exemptions, basically, allow  
16 certain activities to proceed without applying prohibitions  
17 to those activities. And this can be done through NMFS  
18 approval either through our permitting process, which is  
19 outlined in Section 10 of the Endangered Species Act, or  
20 through a 4(d) program.

21 And, Qinqin, are you speaking today?

22 MS. LIU: (No audible response.)

23 MS. NEUMAN: Okay. Qinqin is here from the  
24 California Department of Fish & Game and is going to be  
25 talking about the 4(d) Research Program that currently exists

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1 for the list of salmonids. And she'll be talking about how  
2 that program is organized and basically how certain  
3 activities can be incorporated into this program -- research  
4 activities can be incorporated into this program,  
5 streamlining the process quite a bit, basically avoiding our  
6 permitting process -- our Section 10 permitting process.

7 This is another flow chart showing how the 4(d) rule  
8 process works. You'll note here that there's no regulatory  
9 time line on the bottom of this flow chart. We are  
10 anticipating that it will take anywhere from a year and a  
11 half to two years to complete our final 4(d) rule.

12 What we are doing right now is drafting an  
13 Environmental Assessment, which is required of NMFS under the  
14 National Environmental Policy Act. We're using the scoping  
15 workshops that we're holding today and perhaps future  
16 workshops to form the information that goes into our  
17 Environmental Assessment. In this Environmental Assessment,  
18 what we're doing is listing a number of alternatives for how  
19 we may apply a 4(d) rule to green sturgeon and hopefully at  
20 some point, maybe even after our workshop today, we'll  
21 determine what our preferred alternative is going to be.  
22 Will we invoke all of the Section 9 take prohibitions? Will  
23 we invoke none of them? Will we invoke some of them with  
24 exemptions? Those are basically some of the alternatives  
25 we're looking at. This scoping workshop also will inform the

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1 actual 4(d) rule when it's drafted.

2 After our Environmental Assessment, a Final Draft is  
3 developed. It has to go through a NMFS approval process.  
4 And what we at NMFS -- the higher-ups at NMFS need to  
5 determine is whether or not this particular Environmental  
6 Assessment has a significant impact on the environment.  
7 Again, this is required under the National Environmental  
8 Policy Act. If a Finding Of No Significant Impact, a FONSI,  
9 results after review of our Environmental Assessment, we move  
10 on. And the next step is to approve the Environmental  
11 Assessment and the Finding Of No Significant Impact on the  
12 environment, and then we can move on to developing the 4(d)  
13 rule.

14 MR. HINDMAN: Just a question. I'm not real --

15 MS. NEUMAN: Can you state your name. Sorry, I  
16 forgot to mention, before you speak, we have a court  
17 reporter, Sandy, here today, and she's writing down  
18 everything that's said. If you could just state your name  
19 before you speak. And speak loudly.

20 MR. HINDMAN: Sure. Nick Hindman, Fish & Wildlife  
21 Service. And just a process kind of question about the ESA.  
22 If the EA -- if you can't get to FONSI, you have to do a full  
23 ESA, right?

24 MS. NEUMAN: That is true.

25 MR. HINDMAN: All right.

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1 MS. NEUMAN: Yes.

2 MR. BIRK: Hi. I'm Serge Birk with the Central  
3 Valley Project Water Association. Jim Smith noted that  
4 there's a difference in interpretation to how they apply  
5 Section 9 to this situation. How would you reconcile it  
6 since Section 9 will provide -- can provide some exemptions?  
7 I'm wondering if the Fish & Wildlife Service applies the  
8 other act, are there exemptions -- is there a provision to  
9 apply these provisions as well, or --

10 UNIDENTIFIED SPEAKER: 4(d) rule.

11 MR. BIRK: So how do you reconcile your differences  
12 on -- on approach over the other if you're automatically  
13 providing the endangered species coverage --

14 MS. WINDHAM: I don't know that it's -- this is Diane  
15 Windham, NMFS. I mean as an example, Fish & Wildlife --

16 THE REPORTER: I'm sorry, Ms. Windham, can you speak  
17 up.

18 MS. WINDHAM: I'm sorry. If I understand Jim Smith  
19 correctly, when we add a listing to the Fish & Wildlife  
20 Service, the Section 9 prohibitions go into affect at that  
21 time. And that's the decision that they have made. NMFS  
22 does not always do that, and it's not required. So basically  
23 what it means is there's sort of a -- if you want to look at  
24 it this way, there's almost like a grace period where before  
25 the Section 9 prohibitions would affect you at the Fish &

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1 Wildlife Service, unless it's stated otherwise in the final  
2 listing Federal Register notice, those prohibitions would go  
3 into affect upon listing. So it's a timing issue more than  
4 anything else. And we're -- for example, NMFS is able to  
5 utilize that flexibility, I think to everyone's advantage, to  
6 try and formulate the 4(d) rule in as timely a process as  
7 possible so that to minimize the amount of time that people  
8 are subject to Section 9 prohibitions actually being in  
9 affect. Does that make sense?

10 MR. BIRK: I need a little more on.

11 MS. NEUMAN: Yeah, if we could just hold off. We're  
12 going to have a question-and-answer period. There will be a  
13 couple of minutes for that afterwards. If I could just  
14 continue on for now, and maybe we can get back to that.

15 I think I was right about here, developing a draft of  
16 the 4(d) rule. After that draft is published in the Federal  
17 Register, there will be a public comment period. It will  
18 probably be about 90 days or so. And then at some point  
19 after that we will publish a Final ESA 4(d) Rule. Again, we  
20 don't really -- we're not under a regulatory time line here.  
21 And so this process is going to be a little bit lengthy, and  
22 we want to get a 4(d) rule out as soon as possible to protect  
23 the green sturgeon, but we also want to hold these scoping  
24 workshops, we have an EA to write, we have an economic  
25 analysis to do. And so it is going to take time; we

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1 recognize that.

2           And I should mention that if you are a federal agency  
3 and you are conducting a federal activity or if you  
4 are not a federal agency but the project you do is funded by  
5 a federal agency, if there's any federal nexus for what it is  
6 you do in your program, your activities, you are required to  
7 consult with us under Section 7 of the Endangered Species  
8 Act, and that must occur at the time that the listing becomes  
9 effective. So that's in a month.

10           So the 4(d) rule allows a grace period basically for  
11 those projects and activities that are not -- that don't have  
12 federal nexus, and it does allow, in a sense, I guess, some  
13 kind of a grace period for those that we're consulting on as  
14 well. But there is something you need to do immediately once  
15 that listing becomes effective if you -- if there's a federal  
16 nexus to your activity or program, and that is you need to  
17 initiate consultation with us.

18           So I think I already mentioned what the purpose of  
19 the workshop is today -- the workshop today is. And the  
20 goals of this workshop, again, are to list the activities and  
21 programs that might directly or indirectly affect the  
22 Southern Distinct Population Segment of green sturgeon.  
23 We're going to be focusing in on those activities and  
24 programs that are administered by water resource users  
25 specifically. We'd like to hear from you, how you would

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1 evaluate the potential affects of these activities. We'd  
2 like to identify activities and programs that might  
3 contribute to the conservation of the species, and, of  
4 course, list potential ways to modify activities that do not  
5 contribute to the conservation of the species or, said  
6 another way, may have a negative impact on green sturgeon.  
7 Finally, we'd like to evaluate the potential affects of  
8 conservation actions on green sturgeon, other species, other  
9 resources, and resource users and managers.

10 I do want to mention that just because you mention  
11 activities or programs that may affect green sturgeon here at  
12 this workshop today, it doesn't necessarily mean that we will  
13 regulate that program. Okay? And we're going to be focusing  
14 in on these five questions that basically restate those goals  
15 that I just read to you in question form. We'll have this  
16 slide projected on the wall during our afternoon discussions,  
17 and we're going to be focusing in on each of those --  
18 focusing in on each of those five questions.

19 There are some ground rules to our discussions this  
20 afternoon and maybe even this morning. This hopefully is  
21 not -- this is not the format for debating and arguing. If  
22 you have a comment that gets you a little riled up, if you  
23 could please write that down, send it to us in an e-mail, put  
24 it in a letter format and send it off to us, we'd really  
25 appreciate it. We don't want to hinder these discussions

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1 today because one or two people may be particularly concerned  
2 about one topic or another.

3 Everyone is encouraged to participate. We really  
4 want to hear from everybody. You won't be hearing the NMFS  
5 folks talk much more after this presentation -- a little bit,  
6 but not much. All participants are equal. Please, one  
7 person talk at a time. When you speak, please state your  
8 name. Sandy might get to know us by the end of the day, and  
9 she may not have to ask your names each time you speak.  
10 Also, I encourage you to fill out those little name tags.  
11 And we'll be re-organizing into a U shape, and hopefully  
12 Sandy will be able to see your name tag sitting on the front  
13 of the table. And I also have a microphone that we could  
14 pass around so Sandy can hear us.

15 There are no right or wrong answers today. Every  
16 idea and comment we're going to write it all down. Try and  
17 keep your comments concise. Remember what the focus  
18 questions are. We'll have them projected. And please  
19 silence your cell phones, okay, during our discussions this  
20 afternoon. You can go outside if you need to make a call.

21 And in the future, as we move through this 4(d) rule  
22 process, first of all, we may have future workshops. We'll  
23 let you all know about future workshops if we do have them.  
24 But we are going to be posting information on our web site.  
25 Our Final EA will be posted on our web site. Our web site is

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1 under construction right now. Hopefully it will be  
2 re-organized in such a way that will be much more user  
3 friendly in the future.

4 And I think that's it for now.

5 And, Susan, is there a couple minutes for questions,  
6 and then we'll move on to Josh's presentation.

7 MR. MICHNY: Yes, my name is Frank Michny. I'm with  
8 the Bureau of Reclamation. And I-- one comment and one  
9 procedural question. Okay. There's a presumption that  
10 you're going to do an EA FONSI. Okay. FONSI means there's  
11 no significant impact on anything. And impacts are positive  
12 or negative. So I'm just wondering and I'm asking for an  
13 answer here, it seems like you're going to the 4(d) rule is  
14 not going to have any significant impact on green sturgeon or  
15 anything and that what comes out of that is simply not going  
16 to affect anything to any significant extent, otherwise  
17 there's not going to be likely a FONSI. So that's just a  
18 comment, you know, in terms of NEPA procedures.

19 The second thing is Reclamation is beginning -- we're  
20 starting some consultations on green sturgeon now on some  
21 major activities. Okay. Right now when we do the  
22 consultation, under Section 7, since there's no take  
23 prohibition, we're only looking at the jeopardy standard.  
24 Okay. So we -- and -- and I'm concerned that the 4(d) rule  
25 may not be done for a couple of years. So I'm just wondering

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1 if -- okay, jeopardy is a higher threshold than just take.  
2 If you take, you can affect an individual. So if we --  
3 presuming we have a project, we get a non-jeopardy opinion  
4 and in that -- in that affect analysis on which the jeopardy  
5 opinion is -- non-jeopardy is predicated on, you would have  
6 to assume a certain level of take with that part of the  
7 impact. Okay. So we get this non-jeopardy opinion now, and  
8 we continue down our way doing our activities, and then two  
9 years later the 4(d) rule comes out -- I'm assuming, because  
10 you're assuming you're going to do a FONSI, that what would  
11 kick in on the take prohibitions is the minor change rule  
12 that there's not going to be any significant changes to the  
13 activity when the 4(d) rule comes out because one of the  
14 rules for Section 9, the take prohibition, is minor changes.  
15 I'm just concerned that we get a non-jeopardy opinion, we're  
16 happily and merrily going on our way, and a few years later  
17 the 4(d) rule comes out and says, "Oh, you gotta change your  
18 activity completely from what we gave" -- so how do you see  
19 the interface there, and are you really looking at just this  
20 minor change rule that there is no significant affects coming  
21 out of this?

22 UNIDENTIFIED SPEAKER: Is that a question?

23 MS. NEUMAN: I'll take a stab at that. I don't know,  
24 Jeff, whether you might have something to add to what I'm  
25 going to say. But the Finding Of No Significant Impact on

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1 the environment, which is what NEPA is requiring us to do,  
2 I'm not sure whether that applies to an activity that you're  
3 going to be carrying out. I mean at any point in time when  
4 we -- for example, when we revise our Status Report in five  
5 years' time, we may find out something about the species that  
6 causes us to down list it, to up list it. And I mean with  
7 each of these changes, with each bit of information we gather  
8 on the species, it may cause us to change what we consider to  
9 be harmful take.

10 So your project, it's not only at the whim of what  
11 happens with this 4(d) rule two years down the line, but it's  
12 at the whim of what happens when we learn more about our  
13 habitat assessment for green sturgeon, or we learn how many  
14 green sturgeon there are out there in total. I guess what  
15 I'm trying to say is that there are many things that may  
16 affect what an outcome of a biological opinion today is and  
17 what the outcome of a biological opinion in five years might  
18 be.

19 MR. MICHNY: What I'm getting at -- and I don't want  
20 to belabor it, but when you do a FONSI, you're going to  
21 propose your rule in your FONSI 4(d) rule that -- whatever it  
22 is, it doesn't matter, you're going to have to do -- you  
23 know, you're going to have do X -- the agencies are going to  
24 have do X out there on the project. My point is that -- with

25 the FONSI, what is the effect of doing X? If the affect of

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1 doing X is significant, then you can't do a FONSI. So you're  
2 going into this, and the way I'm thinking -- I work on NEPA  
3 all the time -- is that everything you're going to have in  
4 there, you're making a presumption that it's not going to  
5 have any significant affect on anything if you -- you know,  
6 whatever it is, they're all going to benign things that come  
7 out of the 4(d) rule. That's the presumption that you have  
8 to make in order to say you're going to do a FONSI now, and  
9 that may or may not be true. That's all. Yeah, I don't want  
10 to beat this to death, but it's a NEPA procedural question.  
11 All right.

12 MS. NEUMAN: Okay. Do you want to add to that?

13 MS. WINDHAM: Well, I'd just like to add that --  
14 Diane Windham again with NMFS.

15 Frank, I think maybe you're sort of mixing the apples  
16 and the oranges. For federal agencies, the 4(d) rule is not  
17 going to apply in the first place because you're going to be  
18 required to have an action that's going to affect the species  
19 and you have to consult with us.

20 MR. MICHNY: We're doing that. We know that.

21 MS. WINDHAM: Can I finish, please, Frank?

22 MR. MICHNY: Yeah.

23 MS. WINDHAM: Thank you. And so what happens in the  
24 4(d) rule, the FONSI is on our action of issuing the 4(d)  
25 rule, and we do conduct an internal consultation with

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1 ourselves on our federal action of issuing that  
2 4(d) rule that will include an Affects Analysis, just like  
3 you have your consultations with us that look at the affects  
4 of the action. The 4(d) rule is not going to affect the  
5 federal consultation process under Section 7. They're two  
6 separate things. Does that make sense? Does that clarify  
7 things for the audience at least?

8 (Multiple speakers.)

9 MR. BIRK: I don't think so.

10 MR. MICHNY: I'll talk to you off line. I do have --  
11 that's okay. I'm done.

12 MR. BIRK: That's very helpful. One of the suggested  
13 topics for future investigation down the Red Bluff Diversion  
14 Dam, since it's a CVP facility operated by an authority, what  
15 applies to what we do there, the 4(d) rule or a Section 7  
16 consultation?

17 MS. WINDHAM: That would be -- that would be with  
18 Section 7 with -- you know, for the operations consultations.

19 MR. BIRK: Okay. So whatever we do for the 4(d)  
20 really isn't relevant for Red Bluff?

21 MS. WINDHAM: If it's a state-run program that  
22 qualifies under one of the exemptions identified in the 4(d)  
23 rule, which is yet to be decided, it would go the 4(d) route.  
24 But whenever there's a federal nexus, federal rule connection  
25 or federal funds, that sort of trumps everything else, and

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1 that takes you down to the Section 7.

2 MR. BIRK: Melissa, can you put that slide back on  
3 there -- it went by pretty fast -- of the several actions  
4 that you're considering would be under this 4(d) assessment?

5 MS. NEUMAN: Where?

6 MR. BIRK: No, it was actually specific to some  
7 sites.

8 MS. WINDHAM: Was it the list --

9 MR. BIRK: Keep going.

10 MS. NEUMAN: Back?

11 MR. BIRK: Back, back, back. There you go.

12 MS. NEUMAN: These are protective efforts that we  
13 considered.

14 MR. BIRK: Under the 4(d) rule or under Section 7?

15 MS. NEUMAN: No, no, no. Just in listing. In  
16 listing the species, these were the protective efforts that  
17 we considered. We're required to do this. These are  
18 protective efforts that are currently underway that we have  
19 some -- if we have some information that suggests that these  
20 activities offset extinction risk, we balance these things  
21 when making our listing decisions. So showing this slide was  
22 simply to point out that these were the things we recognize  
23 when we list it. We recognize these protective efforts --  
24 that they weren't enough, but we still listed them. That's  
25 the bottom line. They didn't all set extinction risk enough.

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1 We had a question back here.

2 UNIDENTIFIED SPEAKER: Actually, (unintelligible).

3 MS. NEUMAN: Pardon?

4 UNIDENTIFIED SPEAKER: My question's been answered.

5 Thank you.

6 MS. NEUMAN: Okay.

7 MR. SMITH: I have a quick question.

8 MS. NEUMAN: I think we're -- hold on for one second.

9 MR. SMITH: Jim Smith here again. Just a real quick  
10 question. You mentioned that if any federal activity  
11 requires a Section 7 consultation, that potentially affects  
12 green sturgeon; however, in the past, NMFS -- that federal  
13 activity associated with monitoring for research, is it  
14 still -- do you still go through a Section 7, or is that a  
15 Section 10 permitting process?

16 MS. NEUMAN: Diane will take that.

17 MS. WINDHAM: I knew I shouldn't have come here  
18 today. I think primarily it gets down to the difference  
19 between direct intentional take versus incidental take. And  
20 for the Section 7 process, that authorizes incidental take;  
21 in other words, take that is sort of a -- not intended --  
22 it's unintentional to some (unintelligible) action. So it  
23 would depend on the monitoring. If it was -- if it's  
24 required in the Biological Opinion to conduct monitoring,  
25 then it's possible to process it through the Section 7

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1 depending on who's doing the monitoring -- this permitting --  
2 authorized permitting by the individuals engaged in it. If  
3 it's just a research activity and it's direct take and  
4 intentional take, then that would be a Section 10 research  
5 permit process.

6 Does that answer your question?

7 MR. SMITH: Yes, it does. Thank you.

8 (Multiple speakers.)

9 MS. WINDHAM: Please, somebody take the microphone.

10 MR. NEPSTED: My name is Mike Nepsted. I'm with the  
11 Bureau of Reclamation. My quick question is, are you going  
12 to have the Environmental Assessment on the 4(d) rule  
13 available for public comment?

14 MS. NEUMAN: No. The draft is not available for  
15 public comment.

16 MS. LIU: I just want to go back to the question  
17 about the monitoring and research. My name is Qinqin Liu  
18 (unintelligible), as you probably know already. If this  
19 research activity apply to Department of Fish & Game,  
20 (unintelligible) premise. So you -- from current program --  
21 and if there is -- you follow the guideline, all the criteria  
22 in the program, it sometimes can be rolling into the  
23 San Francisco research from our 4(d) Rule Program. We have  
24 done that before, but not all the time. So it depends on  
25 each individual situation.

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1 MS. SULLIVAN: My name is (unintelligible), Army  
2 Corps of Engineers. And I had a question about -- with the  
3 BO. If we have submitted a Request for Consultation from you  
4 in the past few months and we're still waiting for review  
5 with you, are you going to include any impacts on green  
6 sturgeon or is that -- do we have to wait until the June 6th  
7 date until --

8 MS. NEUMAN: We're already including green sturgeon  
9 in our consultations. So if you initiated consultation in  
10 the last couple of months, it's very likely that green  
11 sturgeon is being incorporated into that Biological Opinion.

12 MS. SULLIVAN: Okay.

13 MR. VOGEL: Dave Vogel, Natural Resource Scientists.  
14 I don't recall this 4(d) process when all the monitoring for  
15 the salmonids were listing. Is this something new?

16 MS. NEUMAN: No, it's not new. And, in fact, there  
17 is a salmon 4(d) rule that --

18 Diane, do you know the date on --

19 MS. WINDHAM: I don't.

20 MS. NEUMAN: -- the issuance of the salmonids 4(d)  
21 rule? I don't know whether they have --

22 MS. WINDHAM: I think it's 2000.

23 (Multiple speakers.)

24 MS. NEUMAN: I don't know that they held a scoping  
25 workshop like this.

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1 (Multiple speakers.)

2 MS. NEUMAN: They did? So it's out there. And the  
3 way that the salmon 4(d) rule is organized is, all of the  
4 prohibitions were invoked for the listed salmon, and then a  
5 list of limits -- 13 limits was written into that 4(d) rule  
6 that allowed certain activities to move forward either  
7 through some kind of an agreement on 4(d) research program,  
8 an RMEP, which was the Risk Management -- Evaluation  
9 Program? -- Evaluation Program. So anyway, it is out there  
10 and it's published in the Federal Register.

11 MS. LIU: That rule was finalized last year, 2005.

12 MS. NEUMAN: Okay. I should mention that we're not  
13 sure what form the 4(d) rule for green sturgeon is going to  
14 take, whether it will follow the format that was used for  
15 salmon or not. So we're still trying to make that decision.

16 Okay. I think we need to move on to our first  
17 presentation.

18 Presenters --

19 MS. WANG: We need to take a break.

20 MS. NEUMAN: Oh, we're taking a break. Maybe we  
21 should cut the break to five minutes so we can stay on track.

22 (Brief recess.)

23 MS. NEUMAN: Jeff McLain made some copies of the  
24 table, the Timing of Occurrence Table that I showed in my  
25 presentation. They're at the back of the room. And you can

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1 pick one up at any point in time.

2 MR. MICHNY: And I would like to get some copies on  
3 that, too.

4 MR. AMAKER: Is there a chance we can get the  
5 presentation materials that you've presented in your talk?

6 MS. NEUMAN: Yeah.

7 MR. AMAKER: Is that going to be posted on line  
8 somewhere?

9 MS. NEUMAN: Yes, I'm happy to post my presentation.  
10 I think not all of the presentations will be posted. We have  
11 some issues there, unless we can figure out a way of offering  
12 them so that they cannot be altered in any way or -- I'm not  
13 sure whether we can do that.

14 MR. AMAKER: The process diagram would be of interest  
15 to me.

16 MS. NEUMAN: Sure. My presentation we can post.  
17 We're also going to have a transcript of all of our  
18 discussions today, and we can make that available to you once  
19 we receive it from Sandy.

20 MR. BIRK: Melissa, I wasn't sure if I heard this,  
21 but did you suggest that the southern fork of the Trinity  
22 River is part of the range of this --

23 MS. NEUMAN: No.

24 MR. BIRK: It was.

25 MS. NEUMAN: It is within the boundaries of the

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1 Northern Distinct Population Segment.

2 MR. BIRK: Do you know if there's any spawning that  
3 occurs there even if it's in the Northern Distinct --

4 MR. ISRAEL: I don't think they know. I don't think  
5 anyone's been looking. But it's like, you know -- looking at  
6 (unintelligible) information, it seems like it's been  
7 extirpated. There certainly is spawning going on in the  
8 Trinity River, though; there's juveniles caught there in the  
9 screw trap.

10 MR. BIRK: I just want it to be clear.

11 MS. NEUMAN: Next presentation is by Josh Israel and  
12 Bernie May of UC Davis, Utilizing Genetics in a Southern  
13 Green Sturgeon DPS Stock Assessment.

14 MR. ISRAEL: Okay. Well, thanks, Melissa.

15 This is work I've been working on for my Ph.D. at  
16 UC Davis, and I'm going to sort of go through -- I'm not  
17 going to really go over methods very much because I'd just  
18 like to share information with folks about how some of the  
19 genetic work that we're doing can be integrated into stock  
20 assessment.

21 So with that, I'll just share with you a little bit  
22 on it and talk a little bit about uncertainties surrounding  
23 green sturgeon, a little bit about life-history  
24 characteristics, types of data that typically are used in  
25 stock assessments, and genetic approaches to describing, you

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1 know, looking at life-history characteristics, determining  
2 impacts of catch, and potentially ways of looking at spawner  
3 abundance and ways to develop indices of that, and then talk  
4 a little bit about some directions for stock assessment, and  
5 take some questions, hopefully.

6           So there is a lot of uncertainty surrounding green  
7 sturgeon Northern Distinct Population Segment and Southern  
8 Distinct Population Segment, basic information concerning  
9 wild populations in the Sacramento, in particular lacking --  
10 we don't have a good sense for the size structure, the age  
11 structure or any relationship between age and stage or size  
12 and stage. There is no Fisheries Management Enhancement Plan  
13 or Evaluation Plan for sturgeon in California, so the catch  
14 that does -- the recreational catch that does happen here  
15 is -- you know, the way that they're doing it, the goals of  
16 it are not clearly established for if you're trying to move  
17 more -- you know, obviously, move more individuals into  
18 larger age stages or just keep them out of bio mass and the  
19 population the same, and then little information exists  
20 concerning ecosystem consideration, multiple species  
21 interactions, and environmental affects associated with green  
22 sturgeon population dynamics.

23           So just to review the life history, there's three  
24 known spawning populations: The Klamath and the Rogue are  
25 coastal mountains -- located in coastal mountains and are

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1 very distinct from the Sacramento. In this area, China  
2 Rapids on the Sacramento is an area where there's suspected  
3 green sturgeon spawning. You can see some of the volcanic  
4 outcroppings. Can anyone see the red dot?

5 (Multiple speakers.)

6 MR. ISRAEL: Okay. I can't either.

7 So the volcanic outcroppings suggested that, you  
8 know, there's probably a very, very distinct substrate in  
9 this area, and that would be favorable. And the Klamath and  
10 the Rogue are just very different than the Sacramento spawned  
11 over the summertime.

12 Thank you, Phil, for the photo of a few juveniles  
13 captured up at Red Bluff Diversion Dam.

14 And then they spend one to three years in the  
15 estuaries. And they're highly migratory. Then they move out  
16 into the marine waters, aggregating in the summertime in  
17 San Pablo Bay -- my arrows got kicked down here -- San Pablo  
18 Bay, Monterey Bay, Winchester Bay there on the Oregon Coast,  
19 and the Columbia River estuary, Willapa and Grays Harbor.  
20 And in talking with folks at the Washington Department of  
21 Fish & Wildlife, they believe that, you know, Puget Sound to  
22 the coast -- some of the bays in the northern area of  
23 Vancouver Island might also be areas where green sturgeon are  
24 aggregating in the summertime.

25 So some consideration for stock assessment, you know,

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1 what's the real goal. You know, we want to have a sense for  
2 the numbers for specific ages, a relationship between the  
3 number of spawners and recruitment, and recruitment of  
4 spawners in the population, and some estimates on fishing  
5 mortality. All those things would really be useful for being  
6 able to get a sense for what's going on with the population  
7 dynamics. So this an assessment of the size, age, or stage  
8 structure and population, some ideas on spatial or seasonal  
9 considerations that might be influencing populations and  
10 trying to incorporate ecosystem considerations spatially and  
11 temporally. So looking at estuary residents and potentially  
12 other ecosystem considerations habitatwise that might be  
13 limiting factors that would be useful. So we need  
14 life-history characteristics, some information on catch and  
15 some sense for abundance of different life-history stages.

16 So this is a dendrogram, a gene tree that contains  
17 about 1,200 samples from nine locations. There's some  
18 locations that are represented multiple times. You can see  
19 the Klamath is represented three samples. The Rogue has  
20 three samples. There's one sample from the Umpqua. This  
21 blue lines indicates all these populations are in the  
22 Northern Distinct Population Segment versus the red lines.  
23 These three samples from the Sacramento that are from the  
24 Southern Distinct Population. And then there's a number of  
25 samples from aggregations. There's aggregations that are

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1 located -- whose estuaries are located in the Southern  
2 Distinct Population Segment; these two from San Pablo Bay.  
3 And then estuaries that are located in the Northern Distinct  
4 Population section: Grays Harbor, three samples from the  
5 Columbia River, one from Willapa Bay in 2003, and Winchester  
6 Bay in 2002. And you can see that the Northern Distinct  
7 Population Segment populations all cluster quite tightly;  
8 they're all genetically similar, and they're genetically  
9 distinct from the Sacramento populations as well. I've  
10 actually looked at this statistically, and this -- this area  
11 right in here is conserved, and about 93 percent of these  
12 trees, if you run it 1,000 times, you come out finding that  
13 all these -- all these populations in the Northern Distinct  
14 Population Segment are very similar. They don't change  
15 position on the tree. And then you see that the Sacramento  
16 populations seem to be mixed in with some of these mixed  
17 stocks in the different estuaries both in the southern and  
18 the northern regions of their distribution.

19           And then we did some mixed-stock analysis, and so  
20 we're using this genetic data to describe the Distinct  
21 Population Segment proportions and different locations of  
22 fisheries. And the red represents what proportion is from  
23 the Southern Distinct Population Segment, and the blue  
24 represents what proportion's from the Northern Distinct  
25 Population Segment. The two lowest lines represent

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1 San Pablo Bay. These are in the Southern Distinct Population  
2 Segment distribution. You can see that the vast majority of  
3 fish located in San Pablo Bay appear to be from -- of  
4 Southern Distinct Population Segment natal origin. And I  
5 use the -- this was basically done using a fractional  
6 allocation approach and a program called "Structure." So we  
7 are able to get a sense for that -- doing some  
8 self-allocation, looking at how well the natal populations  
9 assign themselves. And we find that -- thanks a lot. We  
10 find that -- I'm not going to present that data, but we find  
11 that there's about a 10 percent accuracy rate within the  
12 self-assignment. So as we move up to the north, you can see  
13 that even if we consider some variation and some error, a  
14 large portion of the Columbia River is coming from the  
15 Southern Distinct Population Segment as well, Willapa Bay.  
16 And then Winchester and Grays Harbor we see sort of a more  
17 equal proportion from the Northern and the Southern Distinct  
18 Population Segments.

19 So -- you know, just to sort of give you some idea of  
20 why we might be observing this, so one of the big things  
21 that's really interesting is that the Southern Distinct  
22 Population Segment fish are much -- are proportionally  
23 greater in Northern Distinct Population Segment estuaries,  
24 although the Northern Distinct Population Segment is  
25 purported to be much more abundant. So why is this? Well,

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1 there could be some environmental conditions that -- within  
2 the Columbia River and Willapa Bay that are more similar to  
3 San Pablo Bay and the natal -- natal estuaries that the  
4 Sacramento fish are in, or it could be that the Klamath's  
5 sub-adult abundance has been over-utilized by the tribal  
6 fishery and its numbers are reduced and so we're just seeing  
7 more southern fish up there, although it shouldn't be that  
8 way because of -- because of over-utilization.

9           And then as far as the Grays Harbor and the  
10 Winchester Bay population -- or -- or estuaries having sort  
11 of an equivalent number of Southern and Northern Distinct  
12 Populations, it seems like maybe these are possibly sharing  
13 environmental characteristics preferred by the Northern  
14 Distinct Population Segment fish or the fact that Winchester  
15 Bay is the closest estuary to the natal rivers in the  
16 Northern Distinct Population Segment, the Klamath and the  
17 Rogue Rivers, and that's just the first estuary that they pop  
18 into, or potentially Grays Harbor is beyond the geographical  
19 limit of migration for the Southern Distinct Population  
20 Segment. So, you know, as we get behavioral work done with  
21 some of the passive acoustics work, we'll have to see if we  
22 can, you know, sort of figure out some of the hypotheses.

23           So genetic data can describe the relative spawner  
24 abundance also in certain locations. And the way we do this  
25 is, CalFed has funded an enormous amount of work at UC Davis

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1 surrounding green sturgeon for the past few years. And some  
2 of the work that they've been doing is what is reproductive  
3 biology oriented. And they've experimentally crossed  
4 families there to look at reproductive biology. And what  
5 we're able to do is take progenies of the siblings all from a  
6 single family that all share brothers and sisters -- or all  
7 brothers and sisters sharing a parent and also collect wild  
8 cohorts in the rivers and then say that the peak -- there's  
9 been a lot of collaborators and cooperators, some of them in  
10 this room who have been doing that, and we're able to build  
11 these gene trees, these dendrograms and evaluate the  
12 relationship between all the individuals, the full  
13 siblings -- which I'm calling here "progeny array" -- and the  
14 wild fish, the cluster unknown of full-sibling wild sturgeon  
15 and then all individuals. And full sibling clusters can be  
16 considered equivalent to two breeding green sturgeon.

17 So I'm using a calculation called a "coefficient of  
18 relatedness," and you can see that when we look at all of the  
19 values of relatedness amongst full siblings -- that's these  
20 three curves over here -- they're quite distinct from  
21 individuals who are unrelated. So, basically, looking at  
22 pairwise relatedness values between individuals that were  
23 from different years -- that were produced in different  
24 years. So we know that they're not full siblings, they're  
25 not brothers and sisters, they're not even in the same

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1 spawning cohort. And there's some overlap here, but for the  
2 most part this coefficient of relatedness is able to detect  
3 those individuals that are full siblings.

4 And then I take the information on the pairwise  
5 values and build a dendrogram. And you can see here, there's  
6 three full sibling families: The blue, yellow, and red. And  
7 for the most part, they all -- well, they do all cluster  
8 actually, in fact, into parts of the trees that through one  
9 location one knows all of them are -- are clustered together.  
10 So this method allows us to rebuild the kinship that is  
11 basically looking at the sibship -- the brother and sister  
12 relationships amongst them.

13 And so I'm just going to share with you one year's  
14 worth of data from Red Bluff Diversion Dam. In 2005, 273  
15 green sturgeon juveniles migrated downstream past Red Bluff  
16 Diversion Dam. Well, these are the ones that were caught in  
17 screw traps. Okay? So there's more out there, but these  
18 ones were actually enumerated, and 103 of them were sampled  
19 for a genetic study. And I don't know how well you can see  
20 it at the back of the room, but the black lines represent the  
21 total daily number of green sturgeon samples. And there's  
22 these little white bars, and that's the number that  
23 represents the number that were actually sub sampled for the  
24 genetic study. And you can see that Bill and his crews  
25 (unintelligible) fish harvesters sampled a reasonably

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1 bell-shaped curve where the samples in this first  
2 (unintelligible), and, as well, they got a large sub-sampling  
3 of this second pulse of the (unintelligible). We didn't  
4 really get as much of a sub-sample as a small number of  
5 individuals came out, but I'll show you the results when we  
6 put them together. You see again these three families that  
7 are known full siblings. It's basically -- you basically are  
8 using them to say, well, these are full siblings relations --  
9 these are related as brothers and sisters. And then I draw  
10 this line at the most conservative estimate, so all of the  
11 nodes that are to the right, all individuals that go through  
12 one node -- like all these individuals that go through this  
13 one node represent all brothers and sisters. The same can be  
14 said for these individuals up here that all go through this  
15 node, for instance. And then we find that there's 21  
16 full-sibling clusters basically within that sub-sample.

17           And so I did this for a number of years and described  
18 the number of sibling clusters within each year and then  
19 said, well, if there's that number of full sibling clusters  
20 that each represent two parents, this is the number of  
21 spawners above Red Bluff Diversion Dam. And then I looked at  
22 the number of samples and the sampling data, and the water  
23 year type, and there's not really any close correlation  
24 between those things and the spawner numbers, the smallest  
25 number of spawners from the largest number of spawners -- you

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1 know, we had the smallest number of spawners -- or -- the  
2 smallest number of spawners is not correlated with the  
3 smallest number of samples nor sample date, nor type of year  
4 as of -- the above-normal year in 2003 and 2005, we had the  
5 lowest and the highest number of spawners those years.

6           So literature suggests that if you have a lot less  
7 than 50 reproducing individuals, you could be having a  
8 problem maintaining the genetic viability of a population.  
9 And so it's possible that the Southern Distinct Population  
10 Segment might be undergoing fitness reduction, lack of  
11 evolutionary potential to adapt to environmental conditions,  
12 or potentially encountering difficulty finding mates.

13           And so the news regarding sort of using some of these  
14 techniques in a stock specimen is that, the good news is that  
15 there doesn't seem to be an indication of recruitment  
16 failure. I went to a symposium a couple weeks ago. A lot of  
17 sturgeon in North America, they haven't had any natural  
18 reproduction in 20 or 30 years. We know that fish are  
19 spawning in the wild at Red Bluff Diversion Dam, and it's  
20 probably likely that they're spawning downstream of Red Bluff  
21 Diversion Dam. So that's good. What we don't know is the  
22 spatial and temporal characteristics of some of these  
23 juvenile -- the juvenile life-history stage and know if  
24 there's enough individuals in that life-history stage to  
25 maintain population viability as sub-adults and adults. And

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1 so we need to determine some of the survival rates and  
2 transition rates in these early life-history stages. And so  
3 using genetic methods to identify individual green sturgeons'  
4 origins, we can combine that with age and/or length data and  
5 we can begin to provide sample sizes large enough at least  
6 for establishing relationships between age and size and stage  
7 to develop a population model that's stage based.

8           The last thing is sort of discussing older life  
9 history. So genetic methods and rigorous, standardized  
10 sampling in rivers can yield estimates of spawner abundance  
11 in specific reaches and even potentially productivity indices  
12 for reaches. And so what we can do is we can take what I'm  
13 calling a jackknife-regression approach where I build  
14 iterative gene trees and include one additional individual  
15 each round. And then this basically describes the  
16 relationship between the total number of samples, which  
17 increases by one every time, and the total number of  
18 discovered families in those trees. And eventually the  
19 asymptote will describe the maximum number of families in a  
20 sample. And so I'm planning on -- hoping to do this really  
21 quite soon. But I think that this could be really useful.  
22 And I was talking with Ray Beaudesderfer earlier in the back,  
23 and he mentioned, well, could you do that -- thank you --  
24 where you look at, you know, how many individuals were -- or  
25 how many individuals are actually responsible for a certain

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1 stage, like if we took all the fish above 150 centimeters and  
2 did this technique where we added those and then looked at  
3 how many fish actually produced all those fish, and that's  
4 something that we've been considering and looking at -- or  
5 doing, basically. So, you know, a development of a Southern  
6 Distinct Population Segment, age/size versus stage  
7 relationship is really critical, standardization of  
8 fisheries, independent indices of abundance for critical  
9 life-history stages, juveniles -- which I think we can do  
10 with genetics and potentially spawners, which I think some of  
11 the agencies are moving towards doing, and then trying to  
12 relate information concerning the spatial and temporal  
13 distribution of critical life-history stages. Again, I think  
14 juveniles and the spawners are two of those. So evaluating  
15 habitat, associated species, and environmental variability,  
16 and how all those things affect population dynamics.

17           And a lot of people have been cooperating on this  
18 project, and there's been a lot of funding sources. I don't  
19 know how that's going to affect the permitting, but I think  
20 that is really critical that research and monitoring is  
21 something that's considered in the 4(d) process to make it  
22 possible for people to continue doing this. Because I think  
23 something that's missing is a lot of basic research. There  
24 needs to be a lot more -- you know, obviously there's a lot  
25 of unknowns in the stock assessment. We need to assess those

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1 out as soon as possible and really determine what the problem  
2 is, if there is one.

3 So with that, I'll take any questions, please.

4 MS. NEUMAN: Questions for Josh?

5 MR. ISRAEL: Yeah.

6 MR. HOLT: Jim Holt, Reclamation. You mentioned that  
7 50 fish number -- about that 50 fish number. Obviously in  
8 any given year you're well below that level.

9 MR. ISRAEL: Right.

10 MR. HOLT: Not all of your adults are returning. Do  
11 you have a guesstimate as to how big the population really  
12 is?

13 MR. ISRAEL: I don't. And I don't even know what  
14 proportion are, for instance, in the river from one year to  
15 the next. Something that would be useful to know is the --  
16 you know, the -- how many years in a spawning -- like how  
17 many years it takes them to spawn multiple times. So their  
18 spawning periodicity, if you had that kind of information and  
19 you could combine it with some kind of indices of abundance,  
20 over time for some of these segments of the river that you  
21 knew that they were spawning in, you could probably put that  
22 information together and actually get an estimate of the  
23 adult numbers. That's a good question. We don't really know  
24 how many adults there are out there.

25 MS. NEUMAN: We have time for one more question.

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1           MR. BEAUESDERFER: Ray Beaesderfer. Josh, I had a  
2 question. You saw in those estuary samples that the majority  
3 of those fish were from the Southern DPS, and you had a  
4 couple of potential explanations for that. Do you have  
5 any -- have you allowed for the possibility that -- the  
6 assumption that the Southern DPS is smaller than the Northern  
7 DPS to be wrong in that what you're seeing is really  
8 indicative of a larger Southern DPS population?

9           MR. ISRAEL: You know, I don't think the sampling's  
10 been as -- is rigorous enough to have -- sort of do that.  
11 That would be something that you might -- if you had one  
12 of these -- sort of an age-stage or a size-stage  
13 relationship, then you could look at the different stages a  
14 little bit more clearly and use genetic methods to assign  
15 individuals and use mixtures to one population or the other  
16 and using that information to say, well, these 80 fish out of  
17 100 sampled in the Columbia River of the Southern Distinct  
18 Population Segment origin and then look at them to see how  
19 many fish they came from, that might be one way of looking at  
20 that. But that's assuming that all the fish are even in the  
21 estuary. And I don't know if we have enough data on the  
22 migratory behavior to even know if, you know, the 100 fish  
23 that they catch on the Columbia for a sub-sample is  
24 representative of that. We need to look at -- you know,  
25 within estuary differences potentially, in stock composition,

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1 and -- although annually it seems like the Columbia River  
2 annually there's not a lot of variation from year to year.  
3 It would be worth looking at potentially within an estuary if  
4 there's some aggregation -- aggregating -- difference in  
5 aggregation.

6 MS. NEUMAN: Thank you.

7 Our next speaker is Qingin Liu from the California  
8 Department of Fish & Game. And she will be giving us an  
9 overview of the California 4(d) Anadromous Fish Research  
10 Program.

11 MS. LIU: Thank you for you all to come.

12 (Unintelligible)

13 THE REPORTER: Excuse me. Would you like to give her  
14 the mike?

15 MS. LIU: This is -- does everybody can hear my  
16 words?

17 UNIDENTIFIED SPEAKER: No.

18 UNIDENTIFIED SPEAKER: No.

19 MS. LIU: Oh, I think my teaching function is  
20 retarded. I used to teach -- I teach every week. Now I  
21 working with -- on the desk for more than six years. I just  
22 feel it's (unintelligible). No problem for everybody else.  
23 So anyway I hope I can -- I don't use this. I used to not  
24 use this at all.

25 Okay. So I want to share some information about

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1 overview of our 4(d) Anadromous Fish Research Program. First  
2 I have to say this is a big program involved in about right  
3 now 86 projects. So I don't have enough time to speak with  
4 specific information, or if I speak too fast, not clear, and  
5 I hope I can talk with you after the meeting.

6 Now -- oh, before I start, I should mention I have  
7 handout there for the key points of my presentation, also the  
8 contact person from NMFS, and also the DFG -- Department of  
9 Fish & Game for current program.

10 Here's the key point for my presentation today. And  
11 I'd like to give a little background information first, but  
12 Melissa presentation set up some important information. So I  
13 might just go through quickly for how program was developed  
14 with the coordination efforts. And also I like to give you  
15 some program overview with project summary and the benefits.  
16 And last but not least, requirement of procedure and future  
17 perspective.

18 This is steelhead, you know, and we work with many of  
19 publishing segment of the steelhead in the program. And  
20 chinook salmon, including the coastal and the spring run.  
21 This is spring run. Thank you for Paul, our spring run, sent  
22 me this photo. It's been used lots of times. And the coho  
23 also are also involved in the project, we're going to find  
24 out what is next.

25 And this is status of the species involved in the

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1 project. You can see probably I just -- I'll speak loud --  
2 as loud as I can. Can you hear me?

3 (Multiple speakers.)

4 MS. LIU: Okay. So we work with the coho. There's  
5 right now one (unintelligible) species. This is reclassified  
6 as endangered, but 2005, you can still see this species --  
7 yes, your unit, you do program. And, also, chinook salmon,  
8 we work with two ESA unit. And for steelheads, we have four  
9 published in six segments.

10 This is the species now is going to be listed in next  
11 month. So we're looking for what's going on for next.

12 And as a background information, you can see from  
13 1977 to 2002 there is three distinguished protected  
14 regulation for anadromous fish. Of June last year, the final  
15 4(d) rule, which protection -- final 4(d) rule which give  
16 protection for all the striped salmon and the steelhead in  
17 California so main program be more consistent.

18 And especially today I'm talking over for research  
19 and monitoring (unintelligible). That is involved with 4(d)  
20 rule limited No. 7 for the Endangered Species Act. In this  
21 regulation, that basically 4(d) provide us exemption for a  
22 Section 9 and also allow take limits. But we -- the program  
23 must meet a lot of criteria specified in the limits.

24 This is some basic essential elements in 4(d) rule  
25 limited No. 7 regarding our research program. In application

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1 process, reports modification, re-evaluation, general  
2 conditions, operational requirements, there's more than four  
3 pages requirements. So I can't discuss each individual --  
4 with -- with people, you have special interest in.

5 Of course, when you see later in the procedure, I  
6 define the report and forms. We have standardized form and  
7 report which is covered all the criteria that was the  
8 Section -- 4(d) rule and the Section No. 7 limits.

9 Here I want to emphasize a little bit more about how  
10 the program was developed. You can see from 2002 we started  
11 the program with DFG request. And for NMFS to provide 4(d)  
12 research limits for take -- for take -- take exemption. And  
13 then 2003, NMFS issued Biological Opinion and approved the  
14 4(d) research take limits for project in 2004. So the first  
15 project program pilot started in 2004. From here you see  
16 this program's relatively new.

17 So from 2004, also, NMFS issued a supplemental  
18 Biological Opinion and approved the project in 2005 in the  
19 research program. And in 2005, NMFS issued supplement  
20 Intra-agency Biological Opinion to approve the modification.  
21 And also 2005, they also issued a letter approved request for  
22 extension of research take limits in this year. So you can  
23 see all of the programs is based upon the annual basis for  
24 evaluation and performance, reports, and the application  
25 process. So it's continuation of the coordination process.

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1           And here are the contributors in the program. This  
2 person you might know, and this is my assistant. And here is  
3 (unintelligible) supervisor with other staff, Monicque  
4 Harvey, who involved early throughout development of the  
5 program. And NMFS and Jeff (unintelligible), the lead  
6 program contact. And also Rosalyn (unintelligible) and in  
7 Sacramento office involved with lead and contact for early  
8 program coordination.

9           Here going to give you some overview about the  
10 research program. I want to summarize the objectives and  
11 also the project components from DFG and the species in the  
12 project. And project distribution we're still working on.  
13 And the requirements, procedures, and the benefits of the  
14 program.

15           And here, as you can see, in general the objectives  
16 are very diversified for more than 80 projects. And there is  
17 plenty of research and study involved and research and  
18 genetics and more. And also there's a requirement by federal  
19 and state environmental laws. And there's project involved  
20 with environmental and water quality, restoration,  
21 environmental management, and water resources management.

22           When we're talking about water resources management,  
23 mostly might be -- like to know more specifics. Here give  
24 you a little bit more general information about water  
25 resources management project involved in the program. And is

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1 water resource and management information need and also  
2 assess of the water quality and the hydrology condition of  
3 that fish and entrainment in pumping plants and fish  
4 stranding related to flood plane and navigation. And also  
5 affect on water transfer operation, study environmental water  
6 needs in the region, provide biological indicators for water  
7 quality and geomorphic conditions, of course, fish passage  
8 impacts.

9 Here is total project in the program. You can see  
10 from 2004 is total 78, and June 2006 is 86. And there's a  
11 component now different from DFG. Now DFG approximately  
12 about half and half. And here you can see that project  
13 component. And this part is from private consultant  
14 organization and also university and other government  
15 agencies. This is all DFG components.

16 And from the species in the program, and I went 2005,  
17 as if you can see, basically they're, you know, in similar  
18 proportions, but 2005/2006 may have change for this portion  
19 because we're lifting of the coho salmon and that situation.

20 You can see the steelhead and -- probably not too  
21 clear from this photo. And there's the leading proportion of  
22 shrimp and chinook -- chinook, and then that's coho.

23 So the benefits of the research, you can see the  
24 collective research information from more than 80 projects

25 allows us to do accumulative analysis and also provide

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1 streamline permit system thinking about these 86 projects all  
2 from Section 10 how much effort is involved. And also  
3 protect them from collecting information for multi -- multi  
4 species and cross-regional conservation and management. And,  
5 of course, we have a lot of coordinated efforts between the  
6 agency and the project components and the staff.

7 And procedures, as we need to have a position  
8 process, project review and coordination, project  
9 modification if they need it and project report. Of course,  
10 like I said, during this procedure, we design application and  
11 a report by requirement of 4(d) rule limited No. 7. So all  
12 the applicant have to really follow the guidelines.  
13 Sometimes I see people change it. That make us work even  
14 much more harder. We have to contact them. They make lots  
15 of different changes. So that's -- this is something we need  
16 to do more outreach efforts. Do you understand why we have  
17 to follow the guideline standards? Because there's  
18 section -- 4(d) rule -- 4(d) rule and limited No. 7  
19 requirements.

20 So we design a program as a standard for application  
21 process. So how does our DFG can allow this state program?  
22 We used some collection product as a linkage. So for  
23 non-agency, it's important to apply for some collection  
24 permit and coordinate with the regional biologist, make sure  
25 before you apply everything's lined up in the channel. Okay?

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1 So that's very important. Then after we done that and  
2 everybody -- then everybody can use the center application,  
3 send to DFG, that way you write application criteria designed  
4 by 4(d) rule and limited No. 7 and then coordinate with NMFS  
5 for programs (unintelligible). So NMFS will review our  
6 request and then approve of our program application and give  
7 our take limit. Then the program will keep going, and then  
8 will transfer from me, and we'll need to submit a report  
9 according to a mandatory standard to the DFG. And then we  
10 will review the report and then send a program report to the  
11 NMFS. And then NMFS will approve our report and review  
12 report and next year's cycle will start. So this is based on  
13 yearly basis. So it's very important for all the  
14 (unintelligible).

15 And I think this is -- I may just very quick go  
16 through -- this is the common requirement for petition and  
17 report according to the 4(d) rule limited No. 7. And then  
18 the species specific requirement, which is different from our  
19 application and report. Quite honestly, I see the applicant,  
20 they just want to take a shortcut. Sometime they try use the  
21 same form for application for report. That cause a lot of  
22 trouble for us because we have time line to comply with 4(d)  
23 requirement. So I want you to make sure to follow the  
24 guideline between the application report, and then we can  
25 make program run smoothly.

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1           The future perspective is we have -- we face  
2           significant challenge for program support, for staff, for the  
3           resources, and also the staff causing change from the  
4           agencies, the project, the policy changes from the listing.  
5           So we have to coordinate all that into the program. And also  
6           continue coordination outreach to make the --- to make people  
7           understand the program and obtain a strong support from them.

8           I think my talk is done here. I will appreciate and  
9           like to see Jeff (unintelligible) coordination in  
10          information. And also (unintelligible) is my assistant for  
11          data -- data -- data support. And, of course, I steal this  
12          from somebody else. I didn't do this.

13          Okay. I think that my talk is ended about here. So  
14          I will discuss with you for more specifics maybe after  
15          meeting -- or do I have questions time?

16          MS. NEUMAN: We have time for one question.

17          MS. LIU: Okay. I know, you in policy stuff. It's  
18          rigid standard, nothing -- nothing to question.

19          Thanks.

20          MS. NEUMAN: Okay. Thank you, Qinqin.

21          Our next speaker is Alicia Seeholtz from the  
22          California Department of Water Resources speaking about green  
23          sturgeon in the Feather River.

24          MS. SEEHOLTZ: Can everybody hear me okay?

25          All right. Basically, I'm just here to kind of give

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1 you a glimpse of green sturgeon on the Feather River. We're  
2 in the listing quite a bit, but not much is really known  
3 about green sturgeon on our system.

4           Basic introduction: The Feather River is the largest  
5 tributary to the Sacramento River system. In addition to the  
6 green sturgeon, we have two other federally listed species,  
7 which are the Central Valley chinook salmon and the salmon  
8 Central Valley steelhead. The majority of our studies have  
9 focused on these species. It has a very unusual design which  
10 ends up creating different flow regimes and temperature  
11 regimes. The water flows out of Oroville Dam and is  
12 diverted -- a small portion of it is diverted into the local  
13 channel. It's generally 600 cfs. In the future, I'm not  
14 sure exactly when, it's going -- the (unintelligible) is  
15 going to be raised to 700 cfs. We also have a temperature  
16 requirement there at 65 degrees mean daily temperature for  
17 this section of the river. The rest of the water is diverted  
18 into the Thermalito complex here where there's more power  
19 generation. This water is used for agricultural diversions  
20 to warm the water for rice users and for extra water storage.  
21 The water that isn't used is then returned to the river  
22 through the -- the Thermalito after-bay outlet, which I'll  
23 refer to as "the outlet," and it flows south to Verona to the  
24 confluence with the Sacramento.

25           The Feather River Program was brought into existence

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1 in the early 1990s to document and monitor fishes in the  
2 lower Feather River. The major goal is to determine flow  
3 requirements for salmonids. During the mid 1990s, we began  
4 gearing up to prepare for the FERC re-licensing of the dam,  
5 and we conducted studies to understand how the Oroville  
6 complex impacted the fish populations. In addition, we also  
7 gathered data that we could use for future restoration  
8 efforts, and those studies are still ongoing.

9 Past sturgeon studies on the river, in print, anyway,  
10 we have a study from -- Painter, et al., conducted studies  
11 from 1968 to 1975 using many different methodologies to look  
12 at how the dam was affecting fish populations, only one white  
13 sturgeon were ever reported. In a report from NMFS in 1995,  
14 they mentioned that a study was done on larvae sturgeon near  
15 the mouth of the river, no sturgeon were found. In 2001,  
16 Shaffer & Cohorst used artificial substrates to look at five  
17 different locations on the river. They did not find any --  
18 they found sub-adult reproduction, except that they did find  
19 small sub-adult white male -- or white sturgeon at the  
20 outlet.

21 During -- we did -- we conducted two years of  
22 sturgeon studies through the FERC process. In 2003, we  
23 conducted angling (unintelligible) surveys and also conducted  
24 an egg and larvae study and did not find any sturgeon. This  
25 angling -- we tried to angle and fight trap to catch sturgeon

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1 for tagging in 2004, and we were unsuccessful at getting our  
2 hands on any; however, we did see sturgeon breaching for a  
3 ten-day period below Shanghai Bend.

4 Also as part of the FERC process, there was a  
5 sturgeon passage evaluation conducted. A team was put  
6 together, and initially we were going to look at three  
7 different locations on the river that were considered  
8 barriers. However, the high flows in '97 re-conformed the  
9 river to the point where the highest location, which was  
10 actually in the low-flow channel about here, was changed  
11 enough it was no longer a barrier. So the remaining two is  
12 an artificial block wall that was built here at River Mile  
13 38.5 for the Sutter Water Irrigation District to help create  
14 a flume to sweep the fish by the pumps there. And then  
15 another one is a natural barrier that curves down here at  
16 River Mile 25 at Shanghai Bend, which creates a large  
17 waterfall.

18 During -- woops, backup. During November of 2002, a  
19 low-flow analysis was made where flows were approximately  
20 2,000 cfs. It was determined that Shanghai Bend is likely a  
21 barrier because of the height of the waterfalls. The water  
22 velocities coming down the middle of the chute were extremely  
23 high. And then there was an area that was -- that may be  
24 passable, but there wasn't enough of an attraction for --  
25 we believe that sturgeon would have used it. In addition,

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1 Sunset Pumps, their water flow was also very high, and their  
2 water velocities were extremely high also through the chute,  
3 and we were not sure if sturgeon would be able to navigate  
4 it.

5 A high-flow evaluation was conducted in July of 2003  
6 when the cfs -- when it was 10,000 cfs. At this point,  
7 Shanghai Bend looked like it was passable; however, Sunset  
8 Pumps, the flows there are -- are really pretty extreme, but  
9 there is a Willow Bar complex that is off to the side that  
10 sturgeon may be able to get through.

11 Currently this seems to be a pretty good year for  
12 sturgeon on the Feather. We're definitely seeing more and  
13 hearing more than ever since we've been on the system. We  
14 are detecting it through our creole surveys that we're  
15 conducting now and DWR, and Pacific State Fishery personnel  
16 are seeing them more on the river.

17 I have borrowed a receiver -- a Vemco receiver. And  
18 we -- last week we took it out to see if we could detect any  
19 of the other -- detect any tags from other studies that are  
20 being conducted in the area. I've been led to believe that  
21 there are about 200 tags that are out in the water right now.  
22 So we just wanted to see, well, have any of them potentially  
23 come into the Feather River. We did not detect anything, but  
24 yet we're seeing sturgeon. So that's making it a little  
25 interesting.

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1           We are going -- depending on whether we can get the  
2 money together and if we can do it before July, we're  
3 attempting to try to purchase some receivers ourselves and  
4 potentially do some tags and (unintelligible) and try to get  
5 ahold of these sturgeon before they leave in July.

6           Some of our future plans: We are definitely going to  
7 be getting some Vemco receivers. We're going to have a  
8 minimum of 12. We're going to place them at six different  
9 stations. We're going to try to get some more. And then  
10 there will be -- continually be in the river so that we can  
11 try to detect others just for presence. We just want to know  
12 that they're there or when they're coming in. We'd like to  
13 try to tag the sturgeon ourselves. If we can get some of  
14 this tagging done and figure out where the sturgeon are at,  
15 we will attempt some (unintelligible) surveys.

16           One thing that staff -- another thing that's going to  
17 be taking place, we were planning it for this next spring,  
18 but it's been pushed back; we've been monitoring the fish  
19 weir, which is going to have a video monitoring. It's  
20 actually being set up for salmonids, but we're going to have  
21 a camera set up so that they can look downstream so if any  
22 sturgeon try to pass, we'll be able to detect it. We can rip  
23 out the salmon passage chutes place -- replace it with  
24 something that will be more likely be able to pass sturgeon.

25           Future restoration and enhancement is being dictated

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1 through FERC which includes gravel and structural habitat  
2 supplementation, increased flows and temperature.

3 Unfortunately I can't give you any more details on that  
4 because they're still kind of working that out. It's being  
5 evaluated on how we're going to deal with these issues.

6 The tagging the fish -- the fish weir and the -- the  
7 supplementation for the gravel and structural habitat will  
8 likely have some potential initial impact, but we feel that  
9 in the long run it's definitely going to give us information  
10 that we think is going to outweigh those initial impacts.

11 Some of our issues and concerns are, it appears that  
12 the Feather River -- that the sturgeon that use the Feather  
13 River -- I've been documenting them since 2002. And we  
14 generally have sightings year round, but it's a few fish here  
15 and there. It's not constant. We can't say that they're  
16 there for each year is very different. It seems to -- every  
17 time we have a flow that's higher than the Sacramento River,  
18 it appears that the sturgeon come up in great numbers to use  
19 the Feather. So if we do any studies on these fish, I don't  
20 want to say our two years of studies dictates that there  
21 aren't any sturgeon in the river. We've perhaps figured out  
22 how to get our hands on them, and that those two years aren't  
23 telling us what that population is doing. We're definitely  
24 going to have to do longer studies on the Feather River in  
25 order to determine what sturgeon are doing there. And

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1 there's also a concern that with these regulations, that  
2 they're not going to be based on what's known. I know one of  
3 the issues that they believe on the Feather is the Thermalito  
4 Outlet provides a temperature barrier; however, this is where  
5 we're finding our biggest concentration of sturgeon. The  
6 tagging that we've been doing on spring-run chinook suggests  
7 that this is not a temperature barrier; it actually provides  
8 quite the habitat that it appears the green sturgeon like.  
9 It's a very deep hole and the flows and the temperatures at  
10 the time of the year they're there are in the appropriate  
11 ranges.

12 So with that being said...

13 MR. HAMMOND: Jim Hammond for (unintelligible).  
14 Whites or greens?

15 MS. SEEHOLTZ: Both. The greens are generally found  
16 higher up. The whites would be actually found around  
17 Shanghai Bend. But reports are out that both are caught. So  
18 it might just be at the beginning of May while our crew was  
19 out crewing -- there was a gentlemen that they actually saw  
20 pull a green sturgeon out. They were estimating it was six  
21 and a half to seven feet and weighed about 200 pounds. After  
22 talking to that gentleman, he said he was fishing for salmon  
23 but he hooked five sturgeon in a three-hour period. So...

24 MR. WARD: Paul Ward with Fish & Game. Alicia, you  
25 alluded to two barriers that were either a waterfall or a

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1 velocity. What do you conclude in terms of height and  
2 velocity as a barrier for an adult sturgeon?

3 MS. SEEHOLTZ: The -- Roger's going to be giving a  
4 talk on fish passage which will probably address that a lot  
5 better than anything that I could tell you. But the fall at  
6 Shanghai Bend is six feet. It can be six feet high. So  
7 we're definitely not thinking they can jump that. But --  
8 unless they use the side passage, which is definitely doable.

9 When we were watching the sturgeon breach for that ten-day  
10 period, they were continually there until it reached about  
11 5,500 cfs, and then they just disappeared. We're not sure if  
12 they just happened to be done, got out of the system, or if  
13 it was at that flow that they were actually able to go over  
14 the fall. So kind of iffy on that. Shanghai Bend -- or I  
15 mean the Sunset Pumps is actually not very high, but there  
16 are very, very large boulders. And watching the water at the  
17 beginning of this month, the water actually comes down and  
18 pretty much slams on the weir. It's kind of interesting,  
19 depending on the flow how that works. At the lowest that --  
20 I -- I mean at the highest height, I would say I've probably  
21 seen maybe three feet of that structure sticking out of the  
22 water at a point in time. And then they have a chute that's  
23 probably about four feet wide, and we were guesstimating that  
24 the volume velocities were about 15 feet per second.

25 MS. NEUMAN: One more question for Alicia?

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1           Okay.  Thanks, Alicia.

2           Our next speaker is Roger Churchwell from the  
3 Department of Water Resources, and he's going to be talking  
4 about their sturgeon passage studies.

5           MR. CHURCHWELL:  And what I hope to do is go through  
6 our study and then present some of our findings, what we  
7 ended up with.  So I do have a rather long presentation, so  
8 I'll try to get through it.  But if not, we can get to the  
9 findings towards the end.

10           The objective of our study was to research and  
11 evaluate design of an upstreaming sturgeon passage ladder for  
12 use in the Delta Cross Channel/Through Delta Facility.  And,  
13 of course, this was -- we did use white sturgeon and all  
14 white sturgeon.  And by doing -- performing sturgeon swimming  
15 performance and tests, we determined that it identified  
16 physiological and behavioral parameters, and then, of course,  
17 the hydraulics evaluations and measurements were conducted.  
18 And we also considered a 2 percent slope on a passage to be  
19 a -- available for metal passage, so we wanted to do  
20 something greater than a 2 percent slope.

21           This was a coordinated effort with UC Davis and the  
22 Department of Civil and Environmental Engineering, Department  
23 of Wildlife, Fish, and Conservation Biology, and, of course,  
24 Department of Water Resources Fish Facility Tagging.  Other  
25 participation was the Happy Hooker fishing vessel out of

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1 Martinez, and, of course, Natural Resources Scientists, Dave  
2 Vogel to help support this study.

3 This is a CalFed program outlined in CalFed and had  
4 Team participation review and oversight by the Delta Cross  
5 Channel/Through Delta Facility Team, North Delta Technical  
6 Team, and also the Central Valley Fish Facility Review Team.  
7 As I mentioned earlier, a coordinated effort between UC Davis  
8 and DWR engineers and biologists.

9 And the approach was as a three-year effort. The  
10 first two years were to look at and evaluate swimming  
11 performance and behavior of white sturgeon -- this is all  
12 white sturgeon. And then the third year was to develop a  
13 prototype and test that and then evaluate the performance.  
14 And the status right now is that the final report is in final  
15 review, and then hopefully will be out soon.

16 We had to approach this because of infrastructure  
17 limitations within the UC Davis hydraulics lab as a  
18 mid-section of the sturgeon passage. So we're basically  
19 injecting these fish within a section of what would be the  
20 passage. We didn't have a staging area or a full passage  
21 where you would possibly have a resting section within the  
22 passage. We were limited just because of time and the number  
23 of fish that we wanted to test to 60 minutes. Fish did have  
24 a 30-minute acclimation period. All our fish runs were  
25 during daylight hours, and we did -- we did use wild fish, of

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1 course. And our collection was to target the migratory  
2 period of white sturgeon, and we used adult fish four feet  
3 plus.

4 So our -- collected most of hour fish from the Bay,  
5 and we also had some support from another DWR program and  
6 collected some fish out of the fyke trap in the Yolo Bypass.  
7 2003 we collected 32 adult sturgeon, and '04, 51, and then in  
8 '05, 46. Fish collection occurred from the end of January to  
9 the middle of April, and that's what we considered the  
10 migratory period of adult white sturgeon. We didn't have any  
11 way to identify whether these fish were also going to be  
12 migrating, which they don't always -- adult sturgeon don't  
13 always migrate in a given year. As I mentioned, we used the  
14 Happy Hooker, Jim Smith, excellent fisherman. We would not  
15 have had the success that we did without him knowing the bay.  
16 And it was a 42-foot vessel. Fish were collected mainly by  
17 rod and reel and placed in tanks, and water quality measured.  
18 We were able to hold about six or seven adult fish, and then  
19 we had return and take them back. And then, of course,  
20 there's the fyke trap in the Yolo Bypass. We would get the  
21 fish, and we did notice these fish would be moving up where  
22 probably -- you know, were in the migratory process.

23 We had a specially designed haul tank constructed,  
24 insulated that we hauled fish from Martinez up to UC Davis.  
25 And we used specially designed slings for transporting our

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1 fish from the tanks to the flumes. I'll try the pointer  
2 here. Maybe I won't. The slings had compartments within  
3 them where we could hold water so the fish were never dried  
4 out. And all our fish, they were returned after the study to  
5 near locations of where we caught them.

6           And when we got to the university, they were put in  
7 holding tanks and held for a period of time, marked, and kept  
8 information on where they were collected. And, of course,  
9 again I'll say we didn't use any green sturgeon at all; we  
10 used white. Fish were moved from the holding tanks and back  
11 into the slings, and then we would put them into the flume.  
12 And this is a -- it's kind of hard to see in this picture,  
13 but here's our flume site -- one of the sites of our flume.  
14 And I'll go over the size of that in a minute. And they were  
15 held in this as an acclimation period for about 30 minutes  
16 before we started up the flume. And, of course, we collected  
17 tailbeat frequencies, ventilation frequencies, the movement  
18 within the flume, observations, behavior.

19           When we first started this study, we didn't even know  
20 if these fish were going to swim in the flume. So we really  
21 started from scratch really trying to figure out if this was  
22 even going to work our first year. But we were pleasantly  
23 surprised that they did want to move up the flume provided  
24 the right conditions. We also used underwater cameras to  
25 document their movement through the different barriers.

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1           So the total length of our flume system was 120 feet.  
2           Our test section was 80 feet. Our flume pipe was four and a  
3           half feet. We were about seven feet wide. The first two  
4           years we had our main flume body level, zero percent slope.  
5           And then in our last year from studies that we did, we sloped  
6           it at 4 percent. And our final year we had a capacity of 60  
7           cfs in our flume. We kept upgrading as we went, and things  
8           were successful in what we needed.

9           Here's our flume, and our pumps were here. Our head  
10          tank, and we had a flow straightener and a screen. This is  
11          one of our early-on baffles. The flow was going this way.  
12          Here's another baffle. We had another fish screen and a tail  
13          gate for controlling flow, and then the water would  
14          circulate. Then there's a cross section of the flume  
15          section. It gives you kind of an idea. And, of course, this  
16          was -- this was our test section. This was 80 feet from here  
17          to here.

18          This is an overheard view of looking down at some of  
19          the barriers. This one has a center opening, and this has a  
20          two-end opening. And we really just started out just trying  
21          to figure out how these fish would behave around different  
22          hydraulic conditions, different types of eddies, velocities,  
23          just trying to understand their swimming performance and  
24          behavior. So we -- here's one of the barriers. We built  
25          them very simply so we could change them. They were just --

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1 these were four-by-fours. Here's our flume wall. It's not  
2 flowing here. And so we could adjust it, take out  
3 four-by-fours, make it narrower or wider, look at the energy  
4 dissipation, and the fish behavior at different velocities,  
5 different flows. Here's another overhead view. And we --  
6 you know, since these are bottom-dwelling fish mostly, you  
7 know, we were really concerned about what we could do in the  
8 bottom of the flume. And this is -- this is a -- what we  
9 call the vertical barrier. Looking down into the flume, our  
10 opening is here. And then we looked at horizontal barriers  
11 that would go completely across the flume floor, and we did  
12 some direct horizontal, vertical where they were coming to a  
13 vertical surface. And we got very poor passage, and so then  
14 we started looking at, oh, what if we sloped this. So this  
15 is a result of -- after doing some vertical, horizontal  
16 barriers with some slopes and -- so we're still in the  
17 behavior stage of the study, trying to learn how these fish  
18 behave around different types of barriers and what their flow  
19 requirements are.

20 We did a lot of little short type of (unintelligible)  
21 efforts. These are all kind of sort of our horizontal  
22 barriers type of evaluations. We may run one or two fish  
23 through one of these and evaluate that and move on to the  
24 next. With the shortened period of when fish are available,  
25 we had to make quick decisions and move on to the next where

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1 we were going to go. We tried the orifice. There had been  
2 some information given upon the Columbia River that fish were  
3 moving through the bottom of some of the salmon passages that  
4 had holes in the bottom. We got very poor passage through  
5 the orifice situation. Here's one of our barriers with the  
6 center opening. Again, the four-by-fours. This was all in  
7 the first year.

8 In the second year, we started considering, well,  
9 what kind of a slope can these fish swim. So we built a  
10 flume -- we didn't have the time to take and -- and this  
11 is -- this is our flume within our flume. Here's our  
12 original flume walls. And we wanted to look at the -- what  
13 kind of slope these fish would swim. So we constructed this  
14 interior flume and sloped it so we could start to look at  
15 that. This is kind of an overhead view. Here's our flume.  
16 You can see it in, this flume inside.

17 Here's some of our results. And take this in that,  
18 you know, we documented this, but this was not our -- and we  
19 wanted to look at this to help guide us because we took a lot  
20 of the observations and a lot of the information that's not  
21 given here. You know, we did a 4 percent slope that was on  
22 the interior flume. And we did our 8 percent slope. We got  
23 pretty good passage out of that. That actually dictated,  
24 because of its limited time, where we were going to go with  
25 our final year of what we were going to slope our flume to.

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1           And then vertical and horizontal baffle situations.  
2       Like I said, we used different-velocity flow regimes to  
3       evaluate the passage of fish and trying to figure out what  
4       hydraulic conditions would best pass these fish. We also --  
5       I'd like to mention, too, we also -- UC Davis had established  
6       a Health Index on these fish. So we evaluated that and  
7       considered that as fish also with their passage.

8           And then on the third year, we got together and put  
9       together what we thought would be the required type of baffle  
10      design to dissipate the energy and a 4 percent slope for  
11      passage. And so that was fabricated in the flume. We got a  
12      very late start on our plan last year. Our original plan was  
13      to have this ready to go in July and go through hydraulic  
14      testing, balance, and tune the flume, but because of  
15      contracting and funding delays, we didn't have the flume  
16      ready until February, and we had fish coming at that time.  
17      So we actually delayed taking a lot of our hydraulic  
18      measurements until after we ran the fish, and then came back  
19      and did our -- re-set the flume up -- or kept the flume just  
20      like it was and did our measurements because we just didn't  
21      have the time.

22           So we -- our passage, what we found out is that, you  
23      know, sturgeon don't like to turn these big bodies in flow;  
24      they like to move straight. And so that kind of limits --  
25      and, of course, any kind of bottom-type barriers are -- would

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1     impede their flow. There was a movement, so we were kind  
2     of -- kind of limited on what we could do. So we looked at  
3     ways to dissipate the energy by contracting the flow. We  
4     wanted to keep the flow straight. And then another energy  
5     dissipating method is expanding the flow. We did not have  
6     the time to put any roughness into the channel. We think  
7     that would also be a benefit with hoping to control the flow  
8     in the passage.

9             And so this is kind of what we came up with. And  
10    early -- early, simple in that here's our flume, our flow's  
11    coming this way. The flow contracts and is pushed through  
12    this section. These are -- these are overflow weirs here.  
13    We did have the ability to adjust that. We knew when we put  
14    these in that we wanted to have some adjustment. Fish are  
15    moving through here. This side of -- the fish is moving up  
16    here. This side of the baffle was actually sloped because we  
17    did find that adult fish would -- if you had a vertical  
18    surface and they were moving up to the flume, they would ram  
19    into those water plants. They do sometimes want to move very  
20    quickly through these and are capable of doing that. So  
21    these are sloped. As the fish moves up, comes in this way,  
22    they're coming in, and it helps guide them or glance off of  
23    it and they go through the other. And these are set at  
24    45 degrees, which I don't think that drawing is actually at  
25    45; it's a little steeper.

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1           And here's a 3-D rendering. We first started out  
2 with four baffles. I believe these were about 16 feet  
3 spaced. And the other important thing about -- okay. The  
4 other important thing is that, you know, we were only running  
5 one fish. Then we went to six baffles, and that seemed to  
6 dissipate the energy down to where we wanted to go. Of  
7 course, the flume was raised at the back. We sloped the  
8 whole flume to 4 percent. And then we -- moving a little bit  
9 quicker -- I'm running out of time. Here's our baffle  
10 design. Remember this little plank board here, our cameras,  
11 here's a camera here, and there's a camera in that baffle.  
12 We had it wired for video. Here's our flume actually  
13 running. And the fish were moving up through here -- through  
14 the flume. Yes, it's quite surprising the velocity these  
15 fish could handle. Here's an actual sturgeon. There's that  
16 white board you saw going through the passage. So I've got  
17 three -- I don't have a movie; I've got stills. He's getting  
18 ready to go through; then here he goes.

19           Some of our results and findings. We have our  
20 baffles numbered. Here's our first baffle, second baffle,  
21 third, fourth, and fifth. Of course, percent of passage.  
22 And, actually, low tailwater, this -- this scenario and this  
23 scenario are actually the same. The only difference was how  
24 we held the fish. This scenario was a little bit different.  
25 We controlled the tailwater a little bit more than if it was

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1 an actual baffle downstream. That's what we wanted to  
2 create. My throat's getting dry.

3 Also, look at this, baffle No. 5, with this scenario  
4 we were going down to 13 percent. But I'm going to show you  
5 later on by balancing and doing some more pilot work, we were  
6 bringing that up. But, you know, we do have some pretty high  
7 percentage of passage in these baffles.

8 Velocities, I know some people had talked about  
9 velocities earlier. Here are -- here are, of course, some  
10 average velocities. Here are some maximum and minimum  
11 velocities within the chutes, within the baffle passage.  
12 These are running up to about eight feet per second. For a  
13 very short distance that -- and with that widening, you get  
14 the fish actually not sensing -- and straight flow, you get  
15 the fish coming up and they're not actually sensing that high  
16 velocity until they get right there and they've already  
17 started to move through. But also there was some roughness  
18 that, I think, could be slowed down. I hope everybody can  
19 see that.

20 And we kind of developed some guidelines for the  
21 baffle type of system. We don't get into any of the  
22 entrance-type conditions that may be required. Of course,  
23 that resembles what I showed you earlier. I won't spend much  
24 time on that.

25 Some of the criteria, I don't think I probably have

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1 time to go through all that. I'd also like to mention, this  
2 was all for up-passage -- okay, one minute. This was all  
3 done for up passage. We did not consider down passage  
4 because at the facility that we were working on, it did not  
5 require down passage for adult fish.

6 I wanted to go back. We did -- even in the third  
7 year, we did a number of pilot efforts. And I could show you  
8 that, very little, 13 percent. With some balancing intruding  
9 in the flume and with fish later on, we were able to bring  
10 that up to 40 percent.

11 And I'm going to finish up here. I already mentioned  
12 this. After the tests were done, fish were measured and  
13 weighed, put into the slings, put back into the holding tanks  
14 to recuperate, and then return -- we returned the fish back  
15 to the wild. They were put back to the area close to where  
16 they were collected and then released. There was also some  
17 plasma stress -- blood plasma work done by UC Davis that I  
18 didn't present here, but a lot of information that will be  
19 coming out in the report. That's it.

20 MS. NEUMAN: Thank you, Roger. We don't have any  
21 time for questions right now, but write down your questions  
22 for Roger, and at the lunch break you can grab him.

23 Our next presenter is Ann Lucas-Williams.

24 MS. LUCAS-WILLIAMS: I am -- this is a short  
25 presentation. It's an overview of Central Valley Projects

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1 and OCAP and BA. Twelve minutes is not a lot of time to  
2 cover a lot of territory. Okay?

3 This is just some pictures of our dams. Shasta Dam,  
4 Folsom Dam, Friant Dam, our San Luis Reservoir we share with  
5 the state, our pumping plant down at Tracy, and I think that  
6 might be the Delta Cross Channel Gate, but I'm not sure, the  
7 Trinity.

8 Since our focus will be on our take, the state  
9 (unintelligible) consultation, the pumping plants for the  
10 state facility down in (unintelligible) and our Tracy Pumping  
11 Plant -- they have the fish facilities just upstream of the  
12 pumping plants. Just an overview of our Central Valley  
13 Project, all our dams, canals, power plants, et cetera. We  
14 are 20 percent of the state's developed water supply. Most  
15 of our water that we provide the Central Valley is for  
16 agriculture. There is a small amount that has also sort of  
17 been municipal and industrial use.

18 Again, just another little map showing our  
19 facilities. I'll show a little bit better map of  
20 Red Bluff --- I don't know how far up the fish actually  
21 spawn. Just a little bit up the Delta. Since I couldn't  
22 find any good pictures of Red Bluff Diversion Dam, this is  
23 the Trinity/Sacramento Water Quality Network. This is a map  
24 that we will show Red Bluff Diversion Dam down here at the  
25 bottom. And then for our winter-run salmon, we have our Bend

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1 Bridge, Jellys Ferry, Bolles Ferry, compliance points that we  
2 use for our temperature control, see where Clear Creek comes  
3 in, Cottonwood Creek, et cetera.

4 Our current operation of the Red Bluff Diversion Dam  
5 was changed when we did our consultation for the winter-run  
6 back in '92 and '93. So our current operation is, we put the  
7 gates in for the agricultural season, May 15th through  
8 September 15th. We do have -- which provides winter-run  
9 passage, and some of the spring-run -- we may block or delay  
10 some of the spring-run. And there's some steelhead. We have  
11 seen our winter-run obviously above Red Bluff Diversion Dam.  
12 There's a small percentage of spring-run that get above  
13 Red Bluff. I don't know if it's like 6 percent or 9 percent.  
14 And there's also the steelhead that aggregate, migrate but  
15 after the gates are up. That is our current operation.  
16 We'll be talking about that through our consultations.

17 We have several objectives within our operation. One  
18 of the big ones is flood control. All of our dams try and  
19 hold water so that we're not flooding the Central Valley.  
20 Water supply, store the water so that we can move it later.  
21 We try and move it at fish-friendly times. We're trying to  
22 meet our temperature criteria for the chinook. We also have  
23 water-quality issues that we're trying to deal with down in  
24 the Delta. We work with both Fish & Wildlife and NOAA  
25 Fisheries on our ESA issues. There is some recreational use.

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1 There's some seepage, and we have a navigation control point  
2 at Wilkins Slough.

3 We try and meet these multiple objectives while we  
4 also have several agreements and standards that we're trying  
5 to meet. We are joined to the State Water Project under the  
6 Coordinated Operations Agreement that was done in 1986. The  
7 State Water Resource Control Board has a decision -- D-1641  
8 that is our Water Quality Control Plan that we meet with the  
9 state in the Delta. We have our '04 Biological Opinion on  
10 winter-run, spring-run steelhead and coho salmon up in the  
11 Trinity. We have done a final Fish & Wildlife Opinion on  
12 Delta smelt. We have the San Joaquin River Agreement that  
13 helps us with our ramp. Then we also provide funding for the  
14 Central Valley Project Improvement Act through our  
15 contractors who do various projects that are in that Act.  
16 They also do work under CalFed, the Bay-Delta Program. This  
17 is just a few. There's a lot more, but we're not going to go  
18 into those today. Those are the major ones.

19 This is the Water Quality Control Plan Standards.  
20 Here's the summary by month and the various standards that  
21 we're trying to meet. This came out in '95, and the Decision  
22 1641 came out in '99, 2000. Like I said, with the State  
23 Water Project, we try and meet all these standards. You'll  
24 see that most of them -- woops. I'm sorry, I lost my  
25 picture. Most of these standards are for Fish & Wildlife on

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1 the top half, and then we have some M&I standards, some ag  
2 standards. Then there are a few more Fish & Wildlife down in  
3 the San Joaquin River and the Suisun Marsh area.

4 Like I mentioned, we coordinate our operations under  
5 COA and in the Delta as well as upstream we coordinate with  
6 the State Water Project and the Department of Water  
7 Resources, it operates -- excuse me, for our flood control,  
8 we're working with the Corps of Engineers to meet our Control  
9 Plan and some of our state permits with the State Water  
10 Resources Control Board. We work with Fish & Wildlife, the  
11 State Department of Fish & Game, National Marine Fisheries.  
12 On your fish flows that we're doing under CVPIA  
13 (unintelligible), some of our (unintelligible) work with EWA,  
14 obviously the ESA, like we mentioned earlier, and they would  
15 also coordinate with our local stakeholders, ag users, M&I  
16 users, and environmental interests.

17 I just listed the species that we've consulted on  
18 within the Central Valley Projects, and we've done  
19 consultation with DWR. We had our original consultation with  
20 the winter-run in '92, '93, and we re-did it again in 2004 to  
21 bring everything up to date. Our Delta smelt, we had our  
22 consultation in '94, '95, updated it in '94, and then 2005  
23 just to get the critical habitat added. Coho salmon, the  
24 Trinity Restoration Project did a consultation for that in, I  
25 think, 2000. We included it in our (unintelligible)

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1 consultation. Steelhead and spring-run, we had a series of  
2 one- and two-year opinions until we did the long-term opinion  
3 in 2004. And now with the green sturgeon listed, we'll add  
4 that to our consultations.

5 So in '04 we went through our operations criteria and  
6 plan and did our BA. We got our opinions from Fish &  
7 Wildlife in July, and then we got our first opinion from NOAA  
8 in October 22nd, 2004. Like I mentioned, Fish & Wildlife, we  
9 had a critical habitat condition that we needed to re-consult  
10 on, so we got a new opinion. And then in April of this year  
11 we initiated consultation both for the new critical habitat  
12 for spring-run steelhead and for the new listing of green  
13 sturgeon. We're going to turn that conferencing into a  
14 consultation when we -- when the listing takes effect.

15 So we're currently developing a BA for green  
16 sturgeon. We're also going to be updating whatever  
17 information is new from our consultation we did in '04 until  
18 today. It's not a NEPA, CEQA decision document. We're just  
19 identifying the existing actions, and we're going to do the  
20 analysis of the affects on these listed species.

21 Just for those of you that don't know, our Operations  
22 Criteria Plan is an overall description of the project. It's  
23 what we used to build our project description, talk about  
24 some of the legal and regulatory stuff that I just touched on  
25 here lately. We first did an OCAP back in '92, when we did

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1 the winter-run consultations, and the second one was done in  
2 '04.

3 That's all I have to present right now.

4 MR. BIRK: Is there any evidence that there's take of  
5 green sturgeon at the federal facility particularly the  
6 juveniles? And what proactive activities has the Bureau  
7 engaged to get some more credible information of that take?

8 MS. LUCAS-WILLIAMS: I guess we have taken them. I  
9 don't know if you have any more information, Mike.

10 MR. NEPSTED: Other than our usual salvage trucking  
11 and releasing, I don't -- I'm not aware that we're doing  
12 anything special for sturgeon at this moment.

13 MR. McLAIN: No.

14 MR. MICHNY: Just to add to that, do you know if they  
15 rehabilitate some of the larger green sturgeon they catch and  
16 release separate from the salvage operation?

17 MS. LUCAS-WILLIAMS: The ones out on the trash racks  
18 that they sometimes --

19 MR. MICHNY: Yes. Yeah.

20 MS. LUCAS-WILLIAMS: -- will bring into the facility  
21 and rehabilitate?

22 MR. MICHNY: Yeah.

23 MS. LUCAS-WILLIAMS: I was aware of that. I wasn't  
24 aware of the juveniles.

25 Any other questions?

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1           MR. VOGEL: Yeah. Dave Vogel. Has the Bureau  
2 thought about having a hatchery operation for green sturgeon  
3 similar to the winter-run hatcheries?

4           MS. LUCAS-WILLIAMS: I don't know if we've had that  
5 much thought yet. We're still just on the early stages of  
6 consultation. We've just done a couple letters. So I think  
7 as we move through the process, that may come up.

8           Thank you.

9           MS. NEUMAN: Thank you, Ann.

10          Our next speaker is Ken LeGrant -- David Byrd  
11 couldn't make it -- from the Tehama-Colusa Canal Authority.

12          MR. LAGRANT: He did make it.

13          MS. NEUMAN: Oh, you are here.

14          MR. BYRD: They pulled a bait and switch.

15          (Multiple speakers.)

16          MS. NEUMAN: Okay. And Ken is going to be talking  
17 about Fish Passage Improvement at the Red Bluff Diversion  
18 Dam.

19          MR. LAGRANT: Serge, I see you're in your usual  
20 attire for these kinds of things. It's always good to see  
21 that things don't change that much.

22          My name is Ken LaGrant. I'm not in the fish  
23 management business. I farm rice in Colusa County and  
24 somehow was elected under our Water District Board of  
25 Directors, and somehow that Board gave me the -- I drew the

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1 short straw and wound up being the President of the Water  
2 District.

3 So we are -- I'm going to skip a little bit. We  
4 irrigate about 120,000 acres along the west side of the  
5 Sacramento Valley. We're serving 18 water districts, and the  
6 crops are rice, tomatoes, orchards, all of it, almonds that  
7 you see growing in all the foothills, grapes and vines. And  
8 the service is from two canals, but primarily the  
9 Tehama-Colusa Canal, which leaves Red Bluff -- leaves the  
10 river at Red Bluff and comes all the way down terminating  
11 into Yolo County. We divert our water --

12 Ann, you didn't have a picture of the Red Bluff  
13 Diversion Dam because those are classified. We don't --

14 (Multiple speakers.)

15 MR. LAGRANT: -- have those. But it sits in the  
16 middle of the river. So we're the bad guys that the river's  
17 dammed up for. From a water-diversion point of view, this  
18 thing is brilliant; it's just that it was designed  
19 brilliantly before fish were considered as a thing that had  
20 to be considered.

21 The river is -- this is just immediately south of the  
22 City of Red Bluff. The I-5 bridge is just off the slide.  
23 The dam is here, and the water gets -- as the water raises up  
24 behind the dam, it flows into our headworks, through the fish  
25 screens, and then on into the canal. So it's a gravity

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1 diversion. There isn't any pumping that goes on when normal  
2 operations are in play. And you can see that the lift -- we  
3 only dam it up about six feet, but the way that the dam is  
4 unique is that the gates -- this is one of the gates. They  
5 raise up out of the river when we're not using them, and we  
6 lower them into the river when we need to dam up the water so  
7 that it gravity flows in. Water does not flow over the dam;  
8 it's going underneath the gates. But you can imagine that  
9 the pressure of the water under the gates is probably not  
10 negotiable for most fish.

11           So I'm going to back up just a little bit about here.  
12 Initially we were able to put the gates into the river  
13 whenever water was required. But as has been mentioned, fish  
14 considerations have caused those dates that we're allowed to  
15 put the gates in to be restricted over a period of time. And  
16 we would say that the -- you know, the elasticity of that  
17 operation is probably -- isn't "probably," it's stretched to  
18 its limit at this point where the gates aren't able to go in  
19 until May 15th, and they come out in September. It's  
20 stretched to the limit because this is the demand curve for  
21 water that's irrigating 120,000 acres. You can probably  
22 guess that we're planting and need irrigating generally  
23 before May 15th. Now, this year was pretty wet because of  
24 the spring, so it was a little bit unique. But generally we  
25 have a lot of demand out here that's unable to be met from

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1 Red Bluff.

2 Here's where we put the gates in, and we're generally  
3 putting them in at midnight on May 15th. So what we worry  
4 about is that gate moving out this way for any reason because  
5 you're going to see, I think, acres dry up, which concerns  
6 us.

7 I'm going to go back because I want this slide later.  
8 The geography that makes it tricky and makes me feel like the  
9 Far Side cartoon where there are two deer: One of them has a  
10 big target, and the other one says, "Bummer of a birthmark,  
11 Al." Well, that's how we feel, because when you get listed  
12 in the Federal Register thing for the green sturgeon, it  
13 feels sort of like you've got the target. Our diversion dam  
14 is right in the midst of and below a lot of the prime  
15 spawning habitat for green sturgeon, and we know that. But  
16 as I said in the beginning, several years ago our Board kind  
17 of looked at each other and said, "We don't want to be in the  
18 fish management business. We want to get out of the fish  
19 management business. We're in the farming business." So we  
20 started a process about six years ago that went initially  
21 through CalFed and then on through the Bureau of Reclamation  
22 to do a Fish Passage Improvement Project. It has been led by  
23 the TC Canal Authority as the CEQA lead agency and regulation  
24 as the NEPA lead agency. Our purpose is to pass anadromous  
25 fish and other species at the Red Bluff Diversion Dam and

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1 reliably move water to the districts.

2 That's not a green sturgeon, by the way; it's a  
3 salmon that was going up one of our fish ladders.

4 As we went through that NEPA process, we've come to  
5 the conclusion that the way to solve this problem is a  
6 facility that probably most of you are familiar with, you see  
7 them up and down the river, but we would move to pumping.  
8 The good news is, we would only be pumping a lift of five or  
9 six feet at the most. So a fish screen and pumping station  
10 of some undetermined size at this point that would siphon  
11 water into the canal headworks here and it would allow those  
12 gates to be put in the up position as often as the fish  
13 require it and provide as unimpeded passage as possible. We  
14 like that.

15 The time line has been a feasibility study. We've  
16 gone through the NEPA and CEQA documentation but are just  
17 short of a decision. And we've been kind of stuck there for  
18 several years. The TC as the CEQA Authority has selected a  
19 third alternative for the reclamation and for four or five  
20 years been kind of stuck in non-decision mode. The good news  
21 is that just a couple of weeks ago, we have, I think,  
22 initiated a discussion that the Interior is committing to  
23 come under the conclusion of. So we'll try to wrap that up  
24 and move that with a solution. But the good news is that  
25 there is a fix.

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1           The various agencies -- excuse me. The various  
2 agencies that participated in that process really all concur.  
3 And so we feel good about the broad participation that we've  
4 had and the support of the fix that's gone into that. But  
5 the important thing that we worry about is that, as we go  
6 forward, we want to work with the agencies that are writing  
7 these opinions to make sure that there's a balanced approach  
8 to handling how the impacts of the rule making affect the  
9 larger community on the river. It's a complicated community.  
10 We've been an active part in trying to find a solution for a  
11 number of years, and we want to continue to be playing that  
12 role. We're looking forward to Reclamation being a part of  
13 that with us. And what we don't want to see is, frankly,  
14 another Klamath right in the Sacramento Valley because that's  
15 what -- that's what we're going to have facing us in the  
16 event that gate operations are changed and we're unable to,  
17 you know, deal with that in a long-term solution way.

18           I'll take questions.

19           MS. NEUMAN: Thank you, Ken.

20           Questions for Ken?

21           Okay. Thank you, Ken.

22           MR. LAGRANT: Thank you.

23           MS. NEUMAN: Okay. That was our last presentation  
24 for the morning. We actually finished five minutes early.  
25 So let me ask, did anybody have a question for Roger? You

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1 know, we didn't have time for questions, and I know I had a  
2 question for Roger.

3 MR. CHURCHWELL: Okay.

4 MS. NEUMAN: Roger, were any green sturgeon caught in  
5 the weirs? I know you didn't use them in the study, but were  
6 any green sturgeon caught at the bypass when you were  
7 collecting your whites?

8 MR. CHURCHWELL: I'm not sure. Our -- our  
9 involvement in the Yolo bypass is the getting fyke traps.

10 MS. NEUMAN: Right, the fykes.

11 MR. CHURCHWELL: Right. Our involvement in that was  
12 we notified them when they had a fish which usually -- and  
13 also during our period, it was mostly during the white  
14 (unintelligible) were moving up. So I'm not quite sure what  
15 their catch information is. But I could give you a contact  
16 person if you would like to talk to them about that.

17 MS. SEEHOLTZ: I could actually do that for you, Mel.

18 MS. NEUMAN: So was it the wrong time of year?

19 MS. SEEHOLTZ: They don't get green sturgeon in the  
20 fyke. They've never had one in there.

21 MS. NEUMAN: Any other questions?

22 Okay. Well, I think we can break for lunch. Before  
23 we do that, does anybody object to us arranging the room in a  
24 U shape and having our afternoon discussion as one group.

25 MR. McLAIN: That sounds like a good idea.

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1 MS. NEUMAN: Okay. Great. Have a good lunch.

2 (Lunch recess.)

3 MS. NEUMAN: Okay. Everybody, we're going to get  
4 started with our afternoon discussion session. If I can ask  
5 you to, first of all, fill out your name tag if you haven't  
6 done so already and place it on your table, direct it towards  
7 Sandy. But in addition, we're going to go around the room  
8 right now and have you yell out your last name. Sandy is  
9 going to create a seating chart by last name.

10 (Discussion held off the record.)

11 MS. NEUMAN: Okay. So we're going to launch into  
12 discussing each of the focus questions. As I mentioned,  
13 yesterday we also talked about these five questions. We  
14 generated a list of activities and programs that might  
15 directly or indirectly affect Southern DPS green sturgeon.  
16 So that we don't recreate basically everything we did  
17 yesterday, I'd like to show you that list of activities and  
18 programs we generated yesterday, and then I'd like to project  
19 the activities that were identified and programs that were  
20 identified that fall under the general heading of Water  
21 Resource User Activities and Programs and get your input to  
22 see whether we have everything on add that list of import.  
  
23 Perhaps you will want to add to that list. If we add to that  
24 list of activities, Susan will be up here in the front of the  
25 room using the white boards to mark down the activities or

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1 programs that you mention. Once we completed that activities  
2 and programs list, we'll move on to the next question.

3 Now, what happened yesterday was, as we were  
4 discussing these programs and activities, aspects of all of  
5 the other questions came up during our conversations. And so  
6 we know that the conversation might stray a little bit in  
7 that we may cover topics or questions that occur later in the  
8 conversations. We're going to try to keep everything on  
9 track and answer one question at a time. So remind yourself  
10 of these questions, and let's try to stick to them as we move  
11 through the afternoon discussions. But if you stray, it's  
12 okay. And, you know, if you have a comment that isn't  
13 related to these questions, perhaps you have some pressing  
14 comment regarding critical habitat even though we're not here  
15 today to talk about critical habitat, if it comes up in  
16 conversation, Susan's going to have a parking lot of ideas  
17 that fall outside the realm of activities and programs that  
18 might affect green sturgeon, and she'll write those down on  
19 the board. Okay. I think that covers everything I wanted to  
20 say.

21 Any questions before we get started?

22 Okay. So here's the focus questions. Let me show  
23 you the list that we generated yesterday. It's just going to  
24 be a Microsoft Word document, and I'm going to scroll down.  
25 Under -- can everybody see this?

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1 (Multiple speakers.)

2 MS. NEUMAN: Okay. Under fishing-related activities  
3 and programs, we have commercial fishing and harvest, harvest  
4 and bycatch in the Northern DPS. Recreational fishing,  
5 harvest, and bycatch in the Northern DPS. Recreational  
6 fishing and harvest and bycatch in the Southern DPS.  
7 California Fish & Game regulations on recreational fishing.  
8 Oregon and Washington commercial and recreational fishing  
9 regulations. Tribal fishing in the Northern DPS. Poaching.  
10 Delta-Bay Enforcement Program. Development of the Fisheries  
11 Management Evaluation Program. Sports Fish Restoration  
12 Program. As you can see, some of these programs have  
13 positive affects on green sturgeon. We're looking for all  
14 kinds of programs and -- or maybe we don't know the affect  
15 and we want to know it all, if we can.

16 Okay. Next heading is Research and Monitoring  
17 Activities and Programs. We have long-term funding issues  
18 for research and monitoring activities and programs that are  
19 inadequate, and we also have programs and activities that  
20 involve current ESA 4(d) research programs for salmonids.  
21 Activities and programs that promote the conservation and  
22 protection of other species that may have an affect on green  
23 sturgeon. Marine Mammal Protection Act, for example. Salmon  
24 safe does not necessarily equal green sturgeon safe. Other  
25 habitat-related activities and programs. There is a

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1 gravel-injection program, there are flood control programs,  
2 dredging. Land-based development projects resulting in  
3 increased sedimentation. Fire suppression leading to  
4 sedimentation. Gravel mining. RCDs and riparian restoration  
5 programs.

6 Can somebody clarify and tell us what RCDs stands  
7 for?

8 MR. SMITH: Resource Conservation District.

9 MS. NEUMAN: Thank you.

10 MR. SMITH: Jim Smith.

11 MS. NEUMAN: Bank protection by government agencies.  
12 Bay-Delta Enhancement stamp. Activities and programs  
13 affecting water quality. EPA pollution-control programs.  
14 Introduction of exotic species. Agricultural use of  
15 herbicides and pesticides. California Water Quality  
16 programs.

17 And here we are under Water Resource Use Activities  
18 and Programs, and what we came up with yesterday with these  
19 sub-headings: Installation of temperature-control devices.  
20 Water flow alteration and regulation. Fish passage issues at  
21 bypasses. Screening at diversions. Operation of power  
22 plants. Exploitation of water. Operation of pumps in the  
23 South Delta. The CalFed Program. The CVPIA. FERC  
24 re-licensing.

25 Okay. So now I'm going to project just this sub-set

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1 of activities. I know I went through them quickly, but we're  
2 going to focus on water resource use activities and programs.  
3 There may be some overlap with some of those other categories  
4 as well, but we tried to generally come up with categories  
5 that we felt fit the program or activity. Okay? And then we  
6 can start adding to this list if we're missing anything.

7 Okay. What are we missing, programs or activities  
8 that may directly or indirectly affect green sturgeon?

9 MR. SMITH: Just dam operations, Red Bluff, Shasta,  
10 Keswick. I see it's down there under FERC re-licensing, but  
11 just dam operations.

12 MS. NEUMAN: Uh-huh.

13 MR. BIRK: The name is Birk. You may consider adding  
14 the various environmental water programs and acquisition  
15 programs so we have a CVPIA that are helping in that  
16 (unintelligible) water acquisition programs.

17 MS. NEUMAN: So would we put that under CVPIA?

18 MR. BIRK: It's not necessarily CVPIA. It's under a  
19 lot of funding mechanisms. It could be CVPIA; it could be  
20 CalFed; it could be other authorities.

21 MR. ISRAEL: I think to be just more specific on some  
22 things, fish passage issues at diversions like we heard about  
23 at the Sunset Pump today, I think that's a diversion that  
24 could be a fish passage issue at diversions  
25 (unintelligible) -- fish passage at diversions.

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1 (Multiple speakers.)

2 MR. WARD: This is Paul Ward. I would add a number  
3 of sub-sets to your fish-screening diversions. One is a  
4 conflict of fish screen standards versus meander. The other  
5 is the categories of diversions. Those that are in place  
6 that meet salmon standards; those that are in place that meet  
7 salmon standards that need to be modified; those that are --  
8 that don't have screens.

9 MS. WANG: Could you repeat the second one -- or the  
10 first and second one.

11 MS. NEUMAN: Can you repeat the first and second  
12 sub-headings.

13 MR. WARD: The first would be fish screens versus  
14 meander versus natural process.

15 MS. WANG: The second?

16 MR. WARD: And the second one was the efficiency or  
17 the acceptance of currently existing fish screens that meet  
18 salmon standards, both NOAA and Fish & Game.

19 MR. SNOW: This issue might be under water-flow  
20 alteration, but in the Delta, the operation of the Delta  
21 Cross Channel is operated now for salmon primarily. So is  
22 that operation appropriate for green sturgeon?

23 MS. WANG: Operation of Delta Cross Channel?

24 MR. SNOW. Yeah.

25 MR. ISRAEL: One that came up yesterday that I don't

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1 see on list is dredging activities, harbor-dredging  
2 activities. Did that come up yesterday?

3 MS. NEUMAN: Right. And we had it on the list, but  
4 we put it under a different category.

5 MR. ISRAEL: I didn't hear you say it.

6 MS. NEUMAN: Yeah, we put it under our -- the problem  
7 we had yesterday was that some of these programs and  
8 activities fall under multiple categories. So perhaps  
9 dredging should be added to this list as well, if there is a  
10 consensus.

11 MR. ISRAEL: If you consider commerce part water  
12 resources, then I think the one from yesterday was saying  
13 that it is.

14 MS. LUCAS-WILLIAMS: Previously someone also  
15 mentioned Water Quality Control Plans. I think Water  
16 Resource Control Board issues -- I don't know if you want to  
17 add it here as well.

18 MS. NEUMAN: Let's go ahead and add it here.

19 MS. WANG: Water Quality Control --

20 MS. LUCAS-WILLIAMS: What the State Water Resource  
21 Control Board puts out.

22 MR. AMAKER: Tim Amaker. Potential for off-stream  
23 storage programs, off-stream storage projects in the future.

24 MR. MICHNY: Frank Michny. What about the  
25 (unintelligible). I'm not sure where that fits, but that's

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1 presumably an environmental program. But now we're shifting  
2 water exports. But it's coming in question as to whether  
3 will it do any good or not. I mean it's a stand-alone  
4 program, environmental water count if you want to refer to  
5 it.

6 MS. NEUMAN: Environmental water --

7 MR. MICHNY: Environmental water count. We're  
8 basically shifting pumping from this late winter/spring into  
9 the summer basically to save salmon or smelt, but now there  
10 are questions arising that -- I don't know what it does to  
11 green sturgeon, but there's questions arising that it's  
12 shifting some of the dynamics of the ecosystem to the  
13 detriment of some species that it's trying to help. So it  
14 could figure into green sturgeon, too.

15 MS. LUCAS-WILLIAMS: Would you consider that a CalFed  
16 program?

17 MR. MICHNY: Huh?

18 MS. LUCAS-WILLIAMS: Is that a CalFed program?

19 MR. MICHNY: Well, I don't know what it is, but it --  
20 yeah, it could be CalFed. It could be a water flow  
21 alteration. But it's a stand-alone program that probably  
22 merits some looking at on its own.

23 MR. WARD: This is Paul Ward again. I would suggest  
24 another would be new water right applications particularly in  
25 the upper Sac for untypical periods of use.

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1           MR. MICHNY: I have a question. What -- what -- what  
2 are you going to do with the CVPIA ultimately? Because the  
3 CVPIA, the major portion of it is to provide for  
4 environmental restoration. I mean an example is the  
5 Anadromous Fish Restoration Program, which the sturgeon are  
6 anadromous (unintelligible), but it's that other part for  
7 renewal of contracts, you know, do a diversion. And how does  
8 NMFS -- I mean how -- how are you going to break that apart?  
9 Because you can't sit here and say, well, CVPIA is good and  
10 CVPIA is bad, because there's a lot of good stuff in there.  
11 You know, I just think in my head, how do you break that  
12 apart and analyze it? Maybe you haven't gotten that far yet  
13 in thinking about it.

14           MS. NEUMAN: Well, I think we're going to break it  
15 apart, try and make a determination of whether or not it has  
16 a positive affect -- I mean we'll break anything -- any  
17 heading here into its various sub components and try and  
18 determine whether or not it has a positive affect, a negative  
19 affect, no affect, or we don't know.

20           MR. MICHNY: Okay.

21           MS. NEUMAN: And I think that's where we're going to  
22 start. And it may be that many of these programs and  
23 activities won't be considered in our 4(d) rule where we will  
24 not be able to incorporate it into the considerations for a  
25 4(d) rule. It may be that this information we're collecting

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1 today goes towards Section 7 biologists and helps them in  
2 their consultations. It's a 4(d) workshop, but we're  
3 collecting as much information as we can, and we'll use it in  
4 all aspects of the work that we need to do in the future with  
5 green sturgeon.

6 MR. BIRK: I'd like to follow up on that discussion a  
7 little bit. As Frank pointed out here, the CVPIA, there are  
8 probably 38 -- at least 38 provisions that may or may not  
9 affect sturgeon. And you really do need to spend some time  
10 hearing about -- anadromous fish programs is just one of  
11 them, which is a plan. The rest are the implementation  
12 components, which include everything from screens to fish  
13 passage. And I think it would be helpful to show the  
14 robustness of the intent of CVPIA. Same thing applies for  
15 CalFed. This environmental water account, that's really kind  
16 of the notion I had in a water acquisition program. There's  
17 at least four of them. You need to list all four  
18 environmental water acquisition programs and what they're  
19 intended to do. But if you're going to start looking at  
20 CalFed, CalFed also has some major components to it, one of  
21 which is the Ecosystem Restoration Program, one is the Levee  
22 Program, and there's three or four others as well. And you  
23 could argue that, well, we're probably trying to do these  
24 others under the non-PRP programs, the watershed program, for  
25 example, and those investments have been helpful and have

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1 provided some cumulative benefit or may provide cumulative  
2 benefit. So I'm a little concerned that just by saying  
3 CalFed and CVPIA, it's just not going to cover it in terms of  
4 the resolution of this document -- or what the rule needs to  
5 be based on.

6 MS. WINDHAM: Well, I think it's fair to say --  
7 Windham -- that a lot of -- I mean some of us that work  
8 together in this area all the time are much more familiar  
9 with a lot of the -- sort of the vagaries that are not being  
10 fleshed out on the chart and so forth. But the development  
11 of the 4(d) rule and this overall process also is not being  
12 done in a black box down in Long Beach. And, you know, so  
13 I'm sure Melissa's going to be coming to us to illuminate  
14 some of these issues.

15 MR. BIRK: Well, I agree with that, but --

16 MS. WINDHAM: Your point's well taken. I think that  
17 there's no problem with calling out specific components of  
18 these larger programs that we're naming, but also rest  
19 assured that we're all understanding how they function and  
20 most of them will be provided, though it may not be apparent  
21 in the discussions today.

22 MR. BIRK: Fair enough.

23 MS. NEUMAN: And if it would be helpful, we can tear  
24 apart CalFed and CVPIA right here and now or maybe that would  
25 not be productive. I think the reason why they're up here is

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1 because we know we need to go back home and tear it apart and  
2 divide it up into its components, and we don't know whether  
3 we have the time to do that here and now.

4 MR. BIRK: Well, I (unintelligible) that. It would  
5 just be nice to be able to get some feedback to it once you  
6 do it for those two programs. I mean arguably CalFed has  
7 provided a commitment and certainty of \$150 million over the  
8 last five years to the Ecosystem Restoration Program. Almost  
9 every program that I saw under the selection panel said it  
10 was going to do something good for the environment, meaning  
11 it's going to do something good for anadromous fish, meaning  
12 it's going to do something good for every -- that's how every  
13 proposal is ever drafted. I just think it's such a  
14 comprehensive program, we need to get as much as attention to  
15 it and highlight it and notice so that we can keep that kind  
16 of commitment going on in the future and refocus perhaps a  
17 little more on what can be done. Because it's -- for the  
18 most part, most of CalFed's stuff has been generic in terms  
19 of what it can do for sturgeon, except for the site-specific  
20 stuff on genetics and all that. Very few people even within  
21 the CalFed community could tell you what's been done for  
22 sturgeon, although they would state all of this has. And  
23 virtually CVPIA, it's more than indirectly implied that it's  
24 supposed to benefit sturgeon. But then again, you can ask  
25 Jim who actually implements much of the act. He has a better

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1 idea of how many of those specific projects really were  
2 directed -- that's the kind of information I'd like to see.  
3 If there has been some specific projects done for sturgeon,  
4 like the one we heard this morning by the presenter, I think  
5 it would be more beneficial for us to be specific in the  
6 places where we do know.

7 MS. NEUMAN: Do we want -- do we want to break it  
8 down here and now into --

9 MR. BIRK: Well, if somebody has some knowledge, I  
10 think this is a brainstorming session where somebody should  
11 produce it. But if it's going to take some more time, I  
12 don't think it makes a whole lot of -- it looks like what you  
13 guys did yesterday is a pretty comprehensive effort.

14 MS. WINDHAM: Let me ask this, and I want to know  
15 what we can do fit your needs the best. Because what I'm  
16 thinking is that everything that's been said is absolutely  
17 correct and there's a lot of nuances here that are not being  
18 addressed. But some of these are federal activities or  
19 there's some sort of federal nexus involved, and so they're  
20 not going to -- while they affect sort of what we might  
21 call -- what was the term -- baseline conditions, but they --  
22 they contribute to either the conservation of the species or  
23 habitat restoration and so on and so forth. But wherever  
24 there's that federal nexus, those are actions that are not  
25 going to be covered by the 4(d) rule. So given that, how

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1 relevant is sort of deconstructing these big program headers  
2 into more specifics? Is that beneficial to you for the  
3 purposes of the EAA?

4 MS. NEUMAN: I think it's beneficial with respect to  
5 research because research activities may be rolled into a  
6 4(d) program. And it seems like there are a lot of research  
7 activities that are funded by CalFed and CVPIA.

8 (Multiple speakers.)

9 MS. WINDHAM: So if there's federal dollars  
10 supporting that research, it wouldn't qualify for -- it  
11 wouldn't be able to go that route in a regulatory sense,  
12 would it?

13 MS. NEUMAN: Well -- did Qinqin leave? There's  
14 Qinqin. I mean if there is -- I don't know, but if the state  
15 is involved in those activities as well, I don't know whether  
16 there are some -- whether some collaborative effort can't be  
17 funneled through a state board -- I don't know.

18 MS. LIU: It depends, I think, the project. Some  
19 project is federal project and -- but some project is, you  
20 know, university project; it's purely research, PI, and  
21 everything is -- you know, there's the situation of  
22 contracting or there's individuals, independent project. We  
23 cannot just say right now, okay, that's all, very generalize  
24 situation. We have to pick it apart when project comes to  
25 see, okay, is this project objective, is independent from a

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1 federal, you know, management, or is there just pure  
2 research, PI. So I think at this point we should leave this  
3 whole now.

4 MR. BIRK: I'm a little confused with your statement,  
5 Diane. Almost everything up there is in part funded either  
6 by federal dollars or something that's passed through a  
7 federal nexus, you know, CalFed, CVPIA, FERC Re-licensing all  
8 having federal nexuses. I mean arguably there may be some  
9 screens that somebody went out and did on their own under the  
10 4(d) guidelines for salmon, but for the most part, everything  
11 we've done here is either participated in the Anadromous  
12 Screen Fish Screening Program, which has a federal nexus --  
13 and I thought the exercise here is to just list what things  
14 may or may not affect, whether it's negative or positive.  
15 And if we did take the stuff that the feds have been involved  
16 with, directly or indirectly, we won't have anything left to  
17 deal with that's positive or proactive. In fact, we've got  
18 two major legislations, one which is CVPIA, and the other one  
19 is the CalFed Authorization which was targeted specifically  
20 to do this. And I think it's incumbent to continue to say  
21 that we're in a situation -- we're not sure if -- the degree  
22 of risk to this critter, but certainly these are the factors  
23 that are contributing one way or the other. I don't know how  
24 that falls under the 4(d) rule, but -- you may want to call  
25 that baseline, but it certainly is a process, I think, that

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1 lets us highlight and note what things might need to be done  
2 in the future. But I don't know how you're going to get away  
3 from any federal nexus because if anything's making an impact  
4 on -- pursuant to Water Resource activities, it's either the  
5 federal or the state's operations because it's -- just by its  
6 inherent nature --

7 MS. WINDHAM: That's why I was asking Melissa, you  
8 know, what level of detail does she need us to produce today  
9 in this workshop so that we meet your needs.

10 MR. BIRK: But, Diane, my point was not to do that  
11 right here, but it's -- if folks know specific projects that  
12 are targeted -- that really were targeted for the sturgeon,  
13 it could be helpful to do that. I'm saying there's very  
14 little known about that except for the PIs, the people who  
15 are actually funded and doing that.

16 (Multiple speakers.)

17 MR. BIRK: You know, Roger's doing something for me  
18 that makes sense, and I guess that's a water-related type of  
19 activity, but I'm guessing that's going to fall under some  
20 kind of research. I know that the work is being done on the  
21 north coast by the Hoopas and the Yuroks pursuant to learning  
22 about life history, about sturgeon in general. It's  
23 something that's likely to help us in this process even  
24 though they're in a whole difficult area. But to me, those  
25 are things that are going to contribute some kind of

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1 knowledge and skills for us to deal with the 4(d) approach --  
2 4(d) ruling.

3 MS. NEUMAN: Right. It's helpful for me personally,  
4 and I'm speaking for Susan as well, for us to know as much as  
5 we can know about everything that is going on in the Central  
6 Valley that affects green sturgeon. Yes, we're working on a  
7 4(d) rule right now, but next we'll be working on critical  
8 habitat, and then there will be recovery planning, and  
9 there's Section 7 complications. And I think if anybody here  
10 wants to highlight a particular CalFed program or activity  
11 that has gone on that has affected green sturgeon, mention it  
12 here, and we'll know that it's not everything that CalFed  
13 does and that we'll have to go to our CalFed web site or  
14 reach out to folks who are dealing with CalFed all the time  
15 and get an exhaustive list at some point. But I think we  
16 want to know as much as we can even if it isn't going to  
17 directly inform the 4(d) rule or the EA we are happy to be  
18 working on right now.

19 MR. WARD: This is Paul Ward again. I would offer  
20 another -- in the upper Sacramento River is the Sacramento  
21 River Conservation Area Forum which covers the river from  
22 Keswick Dam to the mouth of the Feather. They are currently  
23 working on an NCCP/HCP Safe Harbor Agreement, and this needs  
24 to be considered, presumably -- I'm sure if it's 4(d), but at  
25 least how it impacts that process.

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1 MS. WINDHAM: Paul, are you talking about the  
2 Bay-Delta Conservation Plan --

3 MR. WARD: No.

4 MS. WINDHAM: There's a whole separate --

5 MR. WARD: This is separate from the upper side of  
6 the conservation area. It's tied -- there's a nexus there to  
7 that, but it's a separate process to do this within that  
8 confined area.

9 MR. HOLT: You're talking about the old Kennedy six  
10 process --

11 MR. WARD: Yeah, that's currently the Conservation  
12 Area Forum.

13 MR. HOLT: I've got a question, Paul, about your  
14 thing about fish screens versus meandering. I don't quite  
15 understand what kind of monitoring -- you want to create hard  
16 points instead of letting the stream meander? Is that  
17 what --

18 MR. WARD: We are, as we speak -- in fact, even the  
19 GCID engaged in an exercise to either meet fish-screening  
20 standards hydraulically, which requires a fish cross-section  
21 hard point and/or allowing the river to meander and not to  
22 meet those fish-screening standards. We have at least three  
23 other sites that have current multi-million dollar fish  
24 screens where the river is starting to move away from it  
25 which do not meet fish-screening standards for salmon, which

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1 we either have to stabilize the river or find an exemption.  
2 And if you look at the standard that might be applied for  
3 green sturgeon, it's going to be much more restrictive likely  
4 if that was the case.

5 MR. HOLT: Thank you very much.

6 MR. VOGEL: I'd like to go back to the question or --  
7 I think you had, Melissa. If federal dollars are funding  
8 research or monitoring, does that preclude any involvement  
9 for 4(d)? Is it then only Section 7 or Section 10? I still  
10 like the first answer that I heard.

11 MS. NEUMAN: Yeah, I think I'm searching for an  
12 answer, too. I don't know whether there are activities where  
13 both state and the feds are involved where those activities  
14 are funneled through the state's program. I -- I don't know  
15 whether that is happening in the salmon world right now,  
16 whether there are programs included in the 4(d) anadromous  
17 research program that are in some way funded by the feds,  
18 whether there's a PI that happens to be a fed -- there's a  
19 federal nexus for some of those research activities.

20 MS. LIU: Well, I can pretty much (unintelligible)  
21 for you. And I think, for example, in 40 programs, there's a  
22 quite a few projects that get funding from Sport Fisheries  
23 Restoration Program from the U.S. Wildlife Services. So  
24 there are (unintelligible) programs.

25 MR. WARD: This is Paul Ward again. And I can add to

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1 that. I oversee a research project that not only receives  
2 sport fish funding but receives federal CalFed dollars for  
3 the research project, both of which are covered under the  
4 4(d) rule for spring chinook.

5 MS. NEUMAN: So I think that the answer there is yes,  
6 there may be some federal research activities that are  
7 incorporated into the state's 4(d) -- the state and federal  
8 4(d) program for salmonids.

9 MR. McLAIN: It sounds like we're going to need to do  
10 a little research and find out exactly -- specify exactly  
11 what constitutes a federal nexus and not a federal nexus.

12 MS. WINDHAM: I will say that I think we always  
13 encourage folks to try and find the Section 7 nexus if  
14 possible because it's an easier process to move through.  
15 Perhaps not necessarily easier than 4(d) but easier than  
16 going through either Section 10 HCP for (unintelligible)  
17 individuals or the research permits. But the process seems  
18 to move a little faster in Section 7, believe it or not. So  
19 that doesn't answer the question at all. It's just  
20 information.

21 MS. NEUMAN: So we're going to have to get back to  
22 the group on that question.

23 MR. MICHNY: This -- we brought up the -- Diane  
24 mentioned this Conservation Plan for the Bay-Delta, but just  
25 as a piece of information, the CalFed package, as we know it

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1 now, is probably going to disappear at the end of '07 due to  
2 a number of reasons I'm not going to go into. You know, I  
3 can, but it would take a lot of time. And what's happened is  
4 the water users are meeting with the fishery agencies to  
5 develop a Conservation Program which could morph into an HCP  
6 with NMFS and the Service and the NCCP, Fish & Game that, in  
7 effect, would supplant the existing CalFed package as of '07.  
8 So I'm just giving you this information that if you look at  
9 the CalFed Program and its Ecosystem (unintelligible)  
10 component, it may, as a stand-alone thing, disappear in a  
11 couple of years, and this other process may supplant that, of  
12 which NMFS would then be an integral part of an HCP. And how  
13 that plays into a 4(d), I'm not sure, because you know how an  
14 HCP works; there's no surprise in all that. Just so you're  
15 aware of the process and you think about the juxtaposition of  
16 those and how they interact.

17 MS. WINDHAM: It's still --

18 MR. MICHNY: It just complicates everything more.

19 MR. NEPSTED: It's complicated. You should probably  
20 put the Bay-Delta Conservation Program down there. It would  
21 be covering the Delta and the Bay where green sturgeon are.

22 MR. MICHNY: There's probably an MOU that's going to  
23 be assigned within the next couple of weeks that's going to  
24 commit the agencies to doing it just so you -- it's not  
25 signed yet, but it's going to be signed probably within the

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1 next two weeks that they'll start their process.

2 MR. NEPSTED: And I was going to say, too, you left  
3 off Paul Ward's suggestion of unscreened diversions. And  
4 then also since --

5 MS. NEUMAN: Unscreened criteria?

6 MR. NEPSTED: Well, there's diversions that don't  
7 have any screens on them at all, and he was differentiating  
8 those from the ones that already have a salmon screen.

9 And then also since we've got off-stream storage  
10 programs, we should probably put down the feasibility study  
11 for raising Shasta Dam.

12 MS. NEUMAN: For carrying out that study?

13 MR. NEPSTED: Well, DWR is carrying that out. And  
14 they're also studying (unintelligible) Reservoir, which would  
15 be an off-stream storage. And I suppose --

16 MS. NEUMAN: Is there a time line available for that  
17 activity?

18 MR. NEPSTED: 2009.

19 MS. NEUMAN: For making a decision?

20 MR. NEPSTED: For completing the feasibility study.

21 MS. NEUMAN: Okay.

22 MS. WANG: This program is not in existence yet?

23 MS. LUCAS-WILLIAMS: It's being developed.

24 MS. NEUMAN: We hung these up on this wall yesterday  
25 so that everybody could view them. I hate to -- you won't be

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1 able to see them, unfortunately. I wonder if I could move  
2 you guys to the other side. This is really the only place  
3 where we can hang these up and still be able to view them.

4 (Multiple speakers.)

5 MR. BIRK: I wonder if you could add another item to  
6 this list. Earlier we had a presentation on --

7 MS. NEUMAN: Just hold on one second, Serge.

8 Okay. We're ready.

9 MR. BIRK: Yeah, I think one thing that affects all  
10 the water resource use activities programs is the fact that  
11 they are consulting on green sturgeon under the OCAP. I  
12 think we need to mention that because that's the only deal we  
13 got at this point that affects the federal projects.

14 MS. WANG: So (unintelligible).

15 MR. BIRK: Specifically for green sturgeon, right?  
16 That's what's next, right?

17 MS. LUCAS-WILLIAMS: Green sturgeon and then the  
18 critical habitat. But it really opens that whole  
19 consultation because there's a new species listed.

20 MR. SMITH: Agricultural (unintelligible) or  
21 drainage.

22 MR. OPPENHEIM: Did we already put up the South Delta  
23 Improvement Program yesterday? There is an affect there of  
24 the barriers maybe possibly preventing sturgeon passage.

25 MS. WANG: What was that called?

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1 MR. OPPENHEIM: The South Delta Improvement Program.

2 MR. McLAIN: SDIP.

3 MS. WANG: Oh, SDIP.

4 MS. WINDHAM: D -- as in "dog."

5 MS. WANG: SDIP?

6 MS. WINDHAM: SDIP.

7 MR. BIRK: Also, conservation measures that are being  
8 employed by various user groups most notably agriculture  
9 (unintelligible).

10 One thing we haven't mentioned on (unintelligible),  
11 we are -- and it might fit into this bigger category, but we  
12 are -- we have had some success in consolidating diversions,  
13 by that we eliminate diversions: Two for one.

14 MR. SMITH: State and federal fish salvage  
15 operations.

16 MR. SNOW: Jim Snow. I'm over here now. The  
17 flood-control bypass operation at various gates.

18 MR. BIRK: The VAM Program, V-A-M-P -- Vernalis  
19 Adaptive Management Program.

20 MS. LUCAS-WILLIAMS: Refuge Program.

21 MS. NEUMAN: What did VAMP stand for, Serge?

22 MR. BIRK: Vernalis Adaptive Management. It's a  
23 program or plan --

24 (Multiple speakers.)

25 MR. BIRK: It's more than a plan. I don't...

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1           MR. MICHNY:  What about depletions by -- this seems  
2           like it's all federal stuff.  But there's a lot of  
3           non-federal entities that are taking water out of the system.  
4           And to the extent you need a certain flow, are you guys going  
5           to look at the non-federal depleters to the same extent you  
6           look at federal diverters?

7           MS. NEUMAN:  Who are they?

8           MR. MICHNY:  Well, up in Sacramento Valley, you've  
9           got water rights people that are probably taking close to a  
10          million-acre-feed of water.  They take after-storage water  
11          rights.  So I'm just asking, are you going to address that  
12          sort of stuff so that you're not just looking at the federal  
13          diverters and say, okay, you guys are taking water out of the  
14          system, and you're causing this.  You also -- here's another  
15          guy over here that has a different name --

16          MS. NEUMAN:  We're going to look at anything that  
17          we're aware of.

18          MR. MICHNY:  Okay.  They're not -- put on the thing  
19          non-federal depletions from river systems just as a topic.

20          MR. BIRK:  Use of groundwater pumping in lieu of  
21          diversions, wells that irrigate as opposed to diversions.  
22          Conjunctive use.

23          MR. McLAIN:  Conjunctive use.

24          MS. WANG:  Just groundwater pumping --

25          MS. NEUMAN:  I don't know what the --

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1 MR. McLAIN: Conjunctive use.

2 MR. VOGEL: It's using groundwater conjunctively with  
3 surface water.

4 MR. MICHNY: Did you get an answer? You pump --  
5 conjunctive use is like if you have high flows some year, you  
6 take surface water and put it in the ground in groundwater,  
7 and if the next year is a dry year, then you pump the  
8 groundwater to irrigate with. So you conjunctively use  
9 different water supplies. That's a simple example where  
10 you're meeting your demand while using groundwater and  
11 surface water. And there's an implication because you pump  
12 water out of the rivers at a certain time to put it in the  
13 ground so you can use it at other times.

14 MR. McLAIN: Well done.

15 MR. BIRK: What Frank said.

16 MR. VOGEL: Somebody earlier mentioned the Delta  
17 Cross Channel operations. I'd like to add a broader category  
18 but include that, and that is the provisions with an existing  
19 Biological Opinions. In some cases they negatively impact  
20 sturgeon and perhaps positively affect them.

21 MS. LUCAS-WILLIAMS: Good point.

22 MR. BORTON: The Trinity Restoration Program.

23 MS. WANG: Is that essentially (unintelligible)  
24 consultations?

25 MS. LUCAS-WILLIAMS: Existing BOs.

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1 MS. WANG: And then what's the last one?

2 MR. BORTON: Trinity Restoration Program.

3 MS. NEUMAN: Is that a program or an activity that's  
4 currently underway? Who is examining --

5 MR. BORTON: Well, it's a program. The Trinity  
6 Restoration Program is the only thing I've heard of.

7 MR. BIRK: It's reduced water delivery to the Central  
8 Valley but maintaining greater deliveries to the Trinity  
9 River. So there is the assessment you need to make.

10 MR. HOLT: To the extent you're talking about the  
11 Trinity, you said that you would have any Southern Distinct  
12 Population fish in the Klamath River occasionally. You start  
13 hitting linkages between the Klamath Project, Central Valley,  
14 and all that stuff. It can -- I think it's a question  
15 (unintelligible).

16 MS. NEUMAN: We need to know what's going on in the  
17 Klamath and the Trinity as well if it's affecting what's  
18 happening --

19 MR. HOLT: The Klamath is a particularly difficult  
20 thing in which we have trade-offs between endangered species.

21 MR. BIRK: I would suggest that mitigation for Iron  
22 Mountain Mine is something that should be looked into.

23 Can I ask a question? I noticed in one of the  
24 presentations that when you outlined all the diversions or  
25 fish passage barriers, a lot of them were in the tributaries.

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1 I was struck by the point that there's very little current  
2 presence, abundance, or spawning and recruitment in the  
3 tributaries. There have been some marshes and a fair amount  
4 of removal of small dams, and I think that's something that  
5 should be assessed. But it didn't appear that anybody was  
6 suggesting that there was fish present there. That's not to  
7 say they can't be part of the critical habitat some day. So,  
8 you know, it goes with No. 3, but clearly we've removed over  
9 a dozen structures in tributaries in the last five to ten  
10 years in this area.

11 MS. WINDHAM: So small dam removal?

12 MS. NEUMAN: Small dam removal in tributaries.  
13 Anything else?

14 MR. OPPENHEIM: As a sub-set under safe federal  
15 salvage, you should probably have the research for the fish  
16 facilities themselves. They each have a research program  
17 like trucking and handling programs at the state facility,  
18 and the predation studies at the height technically coming  
19 out of the fish facilities that are used. Yeah, you could  
20 put R&D for both facilities. They would have to get a 4(d)  
21 permit for the state side.

22 And then within Clifton Court, there's a Herbicide  
23 Spraying Program that would need to be permitted since there  
24 are sturgeon with Clifton Court.

25 MR. HOLT: Are there any offshore programs that NMFS

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1 has? Certainly with salmon you have interaction with what  
2 happens in the river valley and what's happening through the  
3 sea phase, marine phase in their life cycle. Is that true  
4 with green sturgeon, or can that be excluded? Or is there  
5 any bycatch of green sturgeon as far as the ocean fisheries?  
6 I don't know. I'm just asking.

7 MS. NEUMAN: Yeah, I think -- I think we have that  
8 listed in our -- under our fisheries --

9 MS. WINDHAM: Bycatch.

10 MS. NEUMAN: Yeah, we have harvest and bycatch for  
11 any fishery happening in the Northern DPS and Southern DPS.

12 MR. BIRK: You might want to consider looking at the  
13 Four Pumps Mitigation Program since you've used salmonids  
14 habitat as a surrogate for habitat for sturgeon. Since most  
15 of those activities are directed for salmonid species, the  
16 Four Pumps Program may have been contributed one way or the  
17 other.

18 MS. NEUMAN: Any other activities?

19 MR. POYTRESS: Bill Poytress. Industrial effluent  
20 wastewater.

21 MS. NEUMAN: Okay. I think we can only fill up one  
22 more page. That's all we have room for.

23 MR. BIRK: I believe there was a program that the  
24 National Fishery Service participated in. It was in  
25 conjunction with the National Fish & Wildlife Foundation.

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1 You know more about that. Perhaps some of those activities  
2 also contribute to this concern.

3 (Inaudible audience discussion.)

4 MR. BIRK: When I was there, there was some 90  
5 some --

6 (Multiple speakers.)

7 MR. HOLT: Update: NOAA may still be putting money  
8 into something like that for about a year -- six or eight  
9 years, DOR -- NOAA Fisheries and NMFS and Santa Rosa  
10 specifically and National Fish & Wildlife had a small branch  
11 of the program supportive of small watershed groups and did a  
12 lot of stuff on the coast particularly.

13 MS. WINDHAM: Restoration programs that comes out of  
14 (unintelligible).

15 (Inaudible audience discussion.)

16 MS. WINDHAM: I think it's the NOAA Restoration  
17 Program or something like that.

18 MR. MICHNY: You have agricultural return flows,  
19 which is valid. And I don't know what the issue in  
20 San Joaquin -- or Sacramento Valley is or -- but the  
21 San Joaquin Valley, return flows off the wildlife refuges are  
22 almost as big an issue as the agricultural return flows. And  
23 I don't know enough about the Sacramento Valley refuge return  
24 flows are an issue or not, but they are in southern  
25 California.

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1 MR. SMITH: Drainage flows, basically.

2 MR. MICHNY: Yeah. Except here we have agricultural  
3 returns --

4 MR. SMITH: Yeah, I (unintelligible). Yeah, whatever  
5 drains off the land, whether it be municipal or agricultural  
6 would be an issue.

7 MR. MICHNY: Okay.

8 MR. URKOV: Mike Urkov. This is simply a 4(d) rule  
9 for state projects and the California Water Bonds. That's  
10 going to hit in November for most of the state-funded  
11 projects. Some of them will be money fronted for federal  
12 facilities potentially, but it's going to be a large number  
13 of state-funded water activities, everything from flood  
14 control to parks.

15 MR. SMITH: Mercury contamination from old mining  
16 sites.

17 MS. NEUMAN: I believe we have that --

18 MR. SMITH: Do you?

19 MS. NEUMAN: -- listed under water quality.

20 MR. SMITH: Okay.

21 MS. NEUMAN: But, again, there's a lot of blur here.

22 MR. SMITH: Okay.

23 MS. NEUMAN: Okay. I think -- unless anybody has...

24 MR. BIRK: Have you captured the TCD at Shasta  
25 somewhere in water quality or any other discussions

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1 yesterday?

2 MS. NEUMAN: Yes. Well, we have --

3 MR. BIRK: I see TCD at Oroville. They have one,  
4 too.

5 MS. NEUMAN: It's No. 1.

6 MR. BIRK: All right.

7 MR. SMITH: That's actually installation. There's  
8 actually one on Shasta that's in operation. So I think  
9 that's an installation...

10 MS. NEUMAN: So maybe we should just say  
11 temperature-control devices, and then we have two issues:  
12 Installation and operation of those.

13 MR. SMITH: Yeah. Uh-huh.

14 MS. NEUMAN: Okay. How many people are ready for a  
15 break? Let's take a five-minute break.

16 (Brief recess.)

17 MS. NEUMAN: Okay. We're going to get started again.  
18 I just wanted to make a couple of clarifying points. If you  
19 take a look at the Section 9 prohibitions, you'll notice that  
20 all of these prohibitions have something to do with either  
21 the sale or transport of a species or take of a species.  
22 These are incredibly broad categories. And when you actually  
23 sit down to write the 4(d) rule, you can get much more  
24 specific. For example, for seller (unintelligible), one of  
25 the activities that is prohibited under the 4(d) rule is take

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1 associated with firearms being shot off on rookeries. So I  
2 just wanted to point out that you can get very specific in a  
3 4(d) rule with what you are prohibiting. It doesn't have to  
4 be that you're prohibiting all take. You can be prohibiting  
5 take at an unscreened diversion unless, for example, you have  
6 a NMFS-approved plan for installing a screen or you have,  
7 okay, a NMFS-approved plan for installing a salmon-safe  
8 screen, let's say for now. So there usually is an "unless"  
9 aspect of the take prohibition as well. We're not sure what  
10 form this 4(d) rule is going to take, but what I can tell you  
11 is it's going to be much more specific than just invoking  
12 these prohibitions. And there are going to be -- very likely  
13 be exceptions. And, again, those exceptions will be allowed  
14 because of NMFS approval in two forms -- one of two forms:  
15 Either through a 4(d) program, and we'll still need to  
16 clarify what specific research activities are okay to  
17 incorporate into a 4(d) program; we have this question here  
18 of federal nexus. And, you know, we are doing Biological  
19 Opinions on the 4(d) program every year for anadromous fish  
20 species, but those buyoffs are because of our own federal  
21 action, our own action of issuing the permit for allowing  
22 that program to move forward. So there may be some projects  
23 that have a federal nexus that we are not doing Section 7  
24 consultations on. We need to figure out what's happening  
25 there and, basically, what qualifies as a research project

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1 that can be incorporated or rolled into a 4(d) program.

2 And then, of course, there is the Section 10  
3 permitting process, where an incidental take permit is issued  
4 for a scientific research and (unintelligible) is issued. I  
5 just wanted to clarify that. We'll have to get back to all  
6 of you on this question of federal nexus and what trumps  
7 what.

8 MR. McLAIN: So in the broad perspective, you have  
9 your Section 9 prohibitions, right, and then within that you  
10 kind of have this 4(d) rule folded in that says, okay, here's  
11 your prohibitions and then your 4(d), those are the things  
12 that we will accept or approve, and we have a list of those.  
13 Is that another way of looking at it?

14 MS. NEUMAN: Right? It is. Before it -- it probably  
15 is going to be a very long list. We prohibit take if it's  
16 occurring in this way. And there may be an "unless" in  
17 there. It all depends on what form the 4(d) rule takes. It  
18 may not follow suit of the salmon 4(d) rules where these  
19 limits were created. We may just create single statements  
20 that prohibit an activity unless. And it's not going to be  
21 just prohibiting all take. It will be take associated with  
22 X, Y, or Z -- unless X, Y, or Z. So it's quite likely that  
23 it will take that form.

24 Okay. The second question, what types of affects do  
25 these activities or programs have on green sturgeon. We'd

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1 like to move through this list relatively quickly. I'm still  
2 going to flash the original list on the screen here.

3 So, Susan, I guess you're going to have to get this  
4 group's input on the affects of our first group of activities  
5 that we had before we added on.

6 And what we're looking here for is positive,  
7 negative, no affect, don't know. So let's try and keep it  
8 simple and get through the list.

9 Okay. I think we named this first activity  
10 temperature-control devices, and it includes sub-sets of  
11 installation and operation in there.

12 MR. McLAIN: A beneficial affect, I assume.

13 MR. BIRK: Go to the next one.

14 MS. NEUMAN: Next one, water-flow alteration,  
15 regulation. It's helpful to break this apart into life  
16 stages of the species, we may, for example, know that there's  
17 a positive or a negative affect on adults, but we don't know  
18 for larvae and juveniles. We can get a little more specific  
19 here.

20 MR. MICHNY: You know, I don't -- because even -- I  
21 mean -- let me -- I mean you're changing water  
22 (unintelligible) just like at Shasta. You've got more water  
23 in the summer than you did before. I mean, I don't know,  
24 without being an expert on green sturgeon, that may be  
25 terrific. I mean I don't know how you know whether these

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1 things have a good or bad affect unless you really know about  
2 sturgeon and water flow alteration. There's a million ways  
3 you alter water. And the water's not always good water; it  
4 may be bad water. It may be benign. I don't know how you  
5 get a handle on that broad of a statement.

6 MR. VOGEL: You know, salt levels, knowing about the  
7 life-history characteristics of the species.

8 MR. MICHNY: Well, that's the other factor, too. So  
9 I don't -- you know, that one's so broad, I don't know how  
10 you get a handle on that.

11 MS. LUCAS-WILLIAMS: We don't know.

12 MR. MICHNY: Yeah, we don't know.

13 MR. NEPSTED: You know, you have less flow in the  
14 winter and more flow in the summer, at least on the  
15 Sacramento River. I'm not sure what they're doing on the  
16 Feather River.

17 MS. LUCAS-WILLIAMS: It depends on the year.

18 MS. NEUMAN: Fish passage issues at bypasses.

19 MR. SMITH: I assume this is the issue where sturgeon  
20 are attracted into the bypasses and being trapped or poached.

21 MS. NEUMAN: Right. I think they're -- they're --

22 MR. NEPSTED: Are they being rescued?

23 MS. NEUMAN: There's entrainment and poaching, and  
24 then there's a Rescue Program that attempts to salvage those  
25 fish. So there really are three components under there. I

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1 think everybody would agree that poaching is pretty negative.

2 MR. MICHNY: Yeah.

3 MS. NEUMAN: We heard yesterday, you know, from a  
4 group of people that, basically, once these fish are  
5 entrained, if they are not salvaged, it is a dead end likely.  
6 It's likely a dead end.

7 MR. McLAIN: Since we're talking about bypasses, do  
8 we want to talk about downstream stuff? I mean there are  
9 some potential beneficial affects for salmonids. Do you want  
10 to mention that?

11 MS. NEUMAN: Sure. But we're talking about positive  
12 affects for salmonids downstream.

13 MR. McLAIN: The growth and, you know -- I don't know  
14 how sturgeon would be affected, but there could be some  
15 positive benefits.

16 MR. SMITH: Could be some negatives, too.

17 MR. McLAIN: Yeah. Could be more entrainment.

18 MR. MICHNY: Yeah, because -- like the Yolo Bypass,  
19 when it floods, it has demonstrable benefits for a lot of  
20 native species of salmonids because it provides all the  
21 shallow rearing habitat. And there may be an entrainment  
22 issue associated with that, but basically it's looked at as a  
23 good environmental thing to flood the Yolo Bypass more than  
24 less. So even with a bypass, there are two different -- at  
25 least two different dimensions there. And I don't know if

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1 that's the case with the bypasses along the Sacramento River.

2 MS. NEUMAN: Screening at diversions.

3 MR. WARD: I would offer both positive and negative  
4 based upon -- the positive from the standpoint it may prevent  
5 sturgeon from being diverted and impinged. The negative from  
6 the standpoint, as I pointed out, that the screen standards  
7 may be contrary to other values that would benefit sturgeon  
8 like meandering and riparian.

9 MS. NEUMAN: Can you repeat that last point --

10 MR. WARD: The negative --

11 MS. NEUMAN: -- negative affects on --

12 MR. WARD: -- could potentially be the restriction of  
13 the meander process and all of the values associated, like  
14 riparian zones and shallow-water habitat.

15 MS. NEUMAN: So are the screens being implicated as  
16 altering flow and potentially reducing flow? Is that the  
17 issue?

18 MR. WARD: To meet federal and state fish screen  
19 standards, you need a component of velocity in flow that is a  
20 constant past the face of the fish screen. And the only way  
21 you can guarantee and achieve that is to have a hard section,  
22 which therefore you have -- as we have VCID, a 3,000 cfs  
23 diversion with the Grady Restoration Program which prevents  
24 the river from moving.

25 MS. NEUMAN: So the screen itself is altering habitat

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1 with respect to flow, with respect to sedimentation rates,  
2 with respect to --

3 MR. WARD: Yeah.

4 MS. NEUMAN: -- other work.

5 UNIDENTIFIED SPEAKER: Although, I don't know if I'd  
6 say the screen itself, but to keep the screen functioning,  
7 you have to alter the habitat and basically armor the  
8 (unintelligible) and keep it in line.

9 MS. NEUMAN: And that work, Paul, is based on  
10 preliminary results from studies that are currently being  
11 conducted? Who's collecting this information on the --

12 MR. WARD: You mean on fish screen standards?

13 MS. NEUMAN: On the negative affects of screens,  
14 their installation, their maintenance.

15 MR. WARD: Well, I think there are a host of programs  
16 that are evaluating this. But the physical reality is it  
17 creates a hard point in the river. In other words -- so  
18 that's the reality.

19 MS. NEUMAN: Right. But --

20 MR. WARD: So the alternative to that is the river  
21 moves back and forth so that studies that support that are  
22 the values of the riparian -- the values of shallow water  
23 riparian habitat that no longer exists. Now, I don't know if  
24 there's a study, yes, that has examined the extent of how  
25 much of that's been foregone by fish screens, but certainly

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1 there is evidence out there that suggests that and would  
2 support it. Absolute evidence. I mean Glenn-Colusa  
3 Irrigation District is a fine example. This is right in the  
4 middle of what could have been a meander zone but now is a  
5 mile-long hard point with riprap banks. And we -- we had at  
6 least six or eight other major sites on the other Sacramento  
7 in my area that are undergoing the same sort of issue, some  
8 of which are (unintelligible) that have already been put in  
9 and met the standard and had the river move a little bit  
10 where we have to go back and start riprapping and renovate  
11 the hard point.

12 MR. HOLT: (Unintelligible) referring to is that  
13 years ago the river moved, the water level would come to the  
14 screen and drop the GCID. The water through the screen then  
15 started to exceed standards. So they had to raise and adjust  
16 the river again. And that's the problem he's talking about.  
17 The trade-off is the values of the screen standard at the  
18 expense of the allowing the river to meander, or do you allow  
19 the river to meander and compromise the status of the screen.

20 MS. NEUMAN: Right. I think I understand that. What  
21 I'd like to know is what the scientific basis of --

22 MR. HOLT: Experience.

23 MS. NEUMAN: -- Paul's comments are. Because any --  
24 you know, if we -- I'd like to know something -- you know, a  
25 study that's underway to examine those affects and --

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1 whenever we can cite a paper, cite a study, cite something  
2 that's published and peer-reviewed, that's the best that we  
3 can hope for.

4 MR. BIRK: You might want to take a look at the EIS  
5 for the construction of the project since it actually looked  
6 at all those factors. And I think what Paul is describing is  
7 a feature of the project that makes the project functional.  
8 So I think there's a fair amount of documentation for that  
9 site. And the other thing is that you can actually just go  
10 out there and see what's happening at the rest of the sites.  
11 And without them, these structures are at a risk of being  
12 abandoned because they don't work.

13 MR. WARD: And I think, in answer to your question,  
14 Melissa, I can give you most of the references. I mean the  
15 conservation area that I talked about has received CalFed  
16 funding to do multiple studies on that very issue. So we  
17 have a whole list. They want to quantify on each site how  
18 much lost, a certain value (unintelligible) through the  
19 process. There's no --

20 MS. NEUMAN: It seems like this is going to be a very  
21 important issue for us because we are talking about screens  
22 and whether salmon-safe screens are beneficial for sturgeon.  
23 And this is really the first time I've ever heard that  
24 installation and operation and maintenance on screening may  
25 have a negative affect on the ecosystem.

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1           MR. WARD: This is new to my operation. In fact,  
2 we're engaged in the very issue just on the salmon criteria  
3 with -- with your -- your agency. No, it's not new. And --  
4 and the other piece that may not be evident here but likely  
5 is the screening criteria for a larval sturgeon is going to  
6 be -- would be more stringent by quite a bit. So that would  
7 be more complicated.

8           MS. NEUMAN: Yeah. Smaller mesh size, right.

9           MS. WINDHAM: Just for the record, I think it's  
10 important to note that there has not been any change made to  
11 the screening criteria for green sturgeon, and at the moment  
12 we're simply following the salmon criteria until there's data  
13 to suggest otherwise. So just so you know.

14          MS. NEUMAN: Okay. Operation of power plants.

15          MR. NEPSTED: I was just going to say on the fish  
16 screens real quick --

17          MS. NEUMAN: Sure.

18          MR. NEPSTED: -- talking with the Fish & Wildlife  
19 Service fish-screening person, he was telling me that they're  
20 not aware of a way to actually make the screen mesh size any  
21 smaller than it already is. And so it's questionable if  
22 there was anything you could do for sturgeon in the first  
23 place. So that's something to think about.

24          MS. NEUMAN: It is. And we also need to think about  
25 whether there's a (unintelligible) on salmon --

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1 (Multiple speakers.)

2 MS. NEUMAN: -- you know, and say something in our  
3 4(d) rule about, you know, encouraging the installation of  
4 salmon-safe screens for the benefit of green sturgeon. We'll  
5 have to balance some of these costs and benefits.

6 Okay. Operation of power plants.

7 MR. MICHNY: I mean that's a negative when you're  
8 entraining (unintelligible) and chewing the fish up. I mean  
9 I don't know if we're going to see any positive about a power  
10 plant directive to fish.

11 MS. NEUMAN: Do all power plants -- all power plants  
12 entrain --

13 MR. MICHNY: There's only a couple on the system that  
14 I'm aware of down at the end of the Delta. There's another  
15 one -- if anyone knows of any others, somebody please say  
16 something. But I only know about two of them.

17 MR. McLAIN: We were talking about those two. That's  
18 what we were focusing on --

19 MS. NEUMAN: What -- what are the names of those --

20 MR. McLAIN: The Antioch and the Pittsburgh --

21 (Multiple speakers.)

22 MR. CADRETT: M-i-r-a-n-t is the company.

23 MR. NEPSTED: Yeah, they did just send in a 90-day  
24 letter to the state saying they were closing the plant. That  
25 was like a month ago in the news.

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1           MR. CADRETT:  What I heard is that the reports in  
2           The Bee misstated that, and that they were -- they were  
3           putting into re-operating but not closing the plant.  That  
4           was something I heard from someone from Fish & Game.

5           MR. NEPSTED:  And they did do -- there was one year  
6           they did do fish studies, I guess, in like 1978 through '79.  
7           And apparently they found no -- no sturgeon entrained at the  
8           plants during that one year that they actually looked -- or  
9           looked and (unintelligible) to report what they found.  So I  
10          don't know if -- you know, how much of an affect they are or  
11          not.

12          MR. BIRK:  The data is buried with the Pentagon  
13          Papers.

14          MR. McLAIN:  That's the entrainment.  Then there's  
15          the water flume, temperature -- yeah --

16          (Multiple speakers.)

17          MS. NEUMAN:  So there is entrainment and --

18          MR. McLAIN:  Temperature.

19          MS. NEUMAN:  Right.

20          Okay.  And heating of the water:  Positive?  
21          Negative?  I'm assuming negative.

22          MR. CADRETT:  I would guess negative.

23          MS. NEUMAN:  Okay.

24          MR. PAULSEN:  Brian Paulsen.  It occurs to me that on  
25          the Colorado River, you know, revenues from power-plant

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1 generation are used to fund fish recovery programs. In that  
2 sense, you know --

3 MR. MICHNY: I don't think they are here.

4 MR. SMITH: Those aren't. The ones we're talking  
5 about here are a little different. I don't think power  
6 plants are associated with CVP and the state water --

7 MR. BIRK: Guys, you know how our boys are paying  
8 their share --

9 (Multiple speakers.)

10 MR. MICHNY: But that's not a power plant.

11 MR. BIRK: They're the ones that buy the power and  
12 distribute it.

13 MR. MICHNY: Never mind.

14 MR. BIRK: Jim, you're right. You're right.

15 MS. NEUMAN: Okay. Exportation of water. I'm not  
16 really sure -- this is so general. These are the ideas that  
17 were generated yesterday. Is there anything that --

18 MR. McLAIN: The removal of water, basically. So not  
19 associated with screening, entraining, but the change in  
20 hydrology maybe.

21 MS. NEUMAN: Okay.

22 MR. AMAKER: The same as No. 2, the water flow and --

23 MR. McLAIN: Yeah. I guess I could be more specific.  
24 That relates to the work that Fish & Game did in the Delta  
25 where they found cumulative water exports affected year-class

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1 strength of white sturgeon in the early nineties. So that  
2 was more focused on the Delta and the Rio Vista standards and  
3 stuff like that.

4 MR. BIRK: What other factors did they identify that  
5 may have contributed to that as well, just pumping?

6 MR. McLAIN: Well, it was just -- it was just water.

7 MS. NEUMAN: So the affect was negative on the white  
8 sturgeon?

9 MR. McLAIN: Right.

10 (Multiple speakers.)

11 MS. NEUMAN: Operation of pumps in the south Delta.

12 MR. BIRK: Melissa, on that one there, a little bit  
13 of detail (unintelligible) --

14 (Multiple speakers.)

15 MR. BIRK: -- who spent a little bit of time with  
16 very few people, including myself know anything about the  
17 affects on it, but certainly would be helpful for talking

18 about a certain size -- I think you suggested over the life  
19 history. I don't know if there's entrainment of juveniles.

20 (Unintelligible) suggested that they're not in the Delta.

21 What size fish are we really talking about here at least for  
22 the south Delta facilities?

23 MS. NEUMAN: Fish that are salvaged at the facilities  
24 were juveniles.

25 (Multiple speakers.)

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1           MR. McLAIN:  Juveniles all the way up based on  
2 salvage records.

3           MR. BIRK:  And then juvenile is something that  
4 doesn't need a fish screen like maybe salmon juveniles?

5           MR. McLAIN:  Right.  These are 200-, 300-millimeter  
6 or bigger.

7           MR. BIRK:  They might have a different solution.

8           MR. McLAIN:  Right.

9           MR. BIRK:  Okay.

10          MS. NEUMAN:  Okay.  So --

11          MR. BIRK:  Then a screen up at Red Bluff where you  
12 have --

13          MS. NEUMAN:  Right.

14          MR. McLAIN:  Exactly, yeah.

15          MS. NEUMAN:  So --

16          MR. OPPENHEIM:  It should be unknown, because we  
17 don't have any studies on survival of green sturgeon through  
18 the fish salvage facilities.  That's something that --

19                 (Multiple speakers.)

20          MS. NEUMAN:  Okay.  So it's an unknown how many  
21 individuals are passing --

22          MR. OPPENHEIM:  Or what the survival rate is through  
23 the trucking and the other things, the operation there.

24          MS. NEUMAN:  Okay.  Because there's a screen in front  
25 of the pumps.

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1 MR. OPPENHEIM: Yeah. The fish are rescued. They're  
2 salvage and they're trucked to the Bay --

3 MS. NEUMAN: Well, some proportion of them are,  
4 right.

5 MR. OPPENHEIM: Well, yeah. Anything that's 200 or  
6 larger would be salvaged (unintelligible).

7 MR. BIRK: Yeah, they're not screened at all.

8 MR. OPPENHEIM: It's 100 percent.

9 MS. NEUMAN: But those animals are not kept --

10 MR. OPPENHEIM: No, they're wild. They're not  
11 tagged.

12 MR. McLAIN: No, she means trapped.

13 MS. NEUMAN: No, I mean they are not tagged with some  
14 kind of devise that would allow you to later detect them.

15 MR. OPPENHEIM: No.

16 MR. McLAIN: What if we were to say "no take, unknown  
17 affect" or something like that? Because we know that they're  
18 taking them, but we just don't know what the affect is.

19 MS. NEUMAN: Okay.

20 MS. LIU: I think there's studies (unintelligible),  
21 right, for all the pumping plants and the action --

22 MS. NEUMAN: Come closer.

23 MS. LIU: Oh. I know there were projects for pumping  
24 and all that that belong to operations at Red Bluff --

25 MR. McLAIN: That's the Archimedes, and that's

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1 different. But that's the Archimedes.

2 MR. BIRK: It might be worth mentioning that that's  
3 the research pumping plant. There may be some information  
4 there dealing with sturgeon. But I don't think they were  
5 catching 200-millimeter fish in their jib. Do you got any  
6 idea?

7 MR. SMITH: Where?

8 MR. BIRK: Right below Red Bluff, the Archimedes.

9 MR. McLAIN: I think you've got one or two over a  
10 number of years.

11 MR. SMITH: I think they're pretty small.

12 MR. BIRK: But certainly they were sampled for four  
13 to eight years minimum, if they're doing it. I don't think  
14 they're doing that anymore right now.

15 MR. SMITH: Yeah, they're sampling --

16 MR. BIRK: Are they?

17 MR. SMITH: It's part of the requirement.

18 MR. BIRK: For sturgeon, too? Are they data for  
19 sturgeon?

20 (Inaudible audience discussion.)

21 MR. BIRK: Whatever you guys -- they're the trash  
22 (unintelligible). That's the screen for them on the pumping.

23 MR. HOLT: Well, there's a pump -- the screen is  
24 downstream of that.

25 MR. BIRK: Where they sample them?

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1 (Inaudible audience discussion.)

2 MS. NEUMAN: Okay. CalFed.

3 MR. BIRK: CalFed, good.

4 MR. ISRAEL: For what it's worth, green sturgeon are  
5 listed in the (unintelligible) species for observation  
6 strategy, and there's a list of actions being taken on behalf  
7 of green sturgeon (unintelligible).

8 MR. McLAIN: We actually assessed all those  
9 conservation measures -- was it the post-listing document or  
10 the -- remember, we went thorough the conservation measures  
11 in CalFed and talked about they generally were helpful but  
12 just not enough to prevent...

13 MS. NEUMAN: I think we did a proposed rule.

14 MR. McLAIN: Proposed rule? Yeah.

15 MR. MICHNY: You know, this -- you know -- I mean I  
16 agree, I think it's positive. I think it's positive overall.  
17 But we're all getting in a box here because it's all part of  
18 CalFed, and CalFed spends close to a billion dollars. And at  
19 the end of that, we if say it doesn't really do any good, I  
20 mean we've all got egg on our face, you know. I just think  
21 there's a little -- there needs to be -- all I'm saying, you  
22 need to be a little careful how you characterize -- when you  
23 write your study, how you characterize CalFed because we're  
24 all part of it.

25 MS. NEUMAN: There's a very specific way that we need

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1 to consider conservation efforts during the listing decision.  
2 And one of those criteria is that we need to have hard  
3 evidence that suggests that that measure, whatever it was,  
4 whatever that conservation measure is, provided a benefit to  
5 the species we're considering for listing. That's where we  
6 ran into trouble for green sturgeon.

7 MR. MICHNY: All right.

8 MS. NEUMAN: A lot of conservation programs met many  
9 of the criteria but fell down on the last one.

10 MR. BIRK: I think sturgeon is one of the big "R"  
11 species now as part of the CalFed solution. You all know the  
12 difference between the big "R" and the little "r", right?

13 (Inaudible audience discussion.)

14 MS. NEUMAN: Okay. CVPIA.

15 MR. BIRK: CVPIA, real good.

16 UNIDENTIFIED SPEAKER: You mean better than CalFed?

17 MR. BIRK: More better. More better.

18 MR. McLAIN: Are there parts of the CVPIA that may  
19 not be good for sturgeon?

20 MR. BIRK: The fish part of CVPIA --

21 MS. NEUMAN: Are not good?

22 MR. BIRK: Are good.

23 MR. SMITH: There are other --

24 (Multiple speakers.)

25 MR. BIRK: (Unintelligible) CVPIA Program that's

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1 funded in perpetuity, right? It's a big deal, right?

2 MR. McLAIN: So, for example, water acquisition  
3 programs and CVPIA are all beneficial for sturgeon?

4 MR. BIRK: I don't know. You haven't acquired much  
5 money for sturgeon, but you have for the other ones. And,  
6 again, my argument before is that you used habitat for salmon  
7 as a surrogate for your critical habitat for -- you can make  
8 that leap of faith that what you do for that is probably good  
9 for sturgeon, too, in some places, right?

10 MR. McLAIN: Right.

11 MR. MICHNY: I think with CalFed what you have to  
12 consider is that CalFed has some water stuff, but one of the  
13 main purposes of CalFed was to make Fish & Wildlife  
14 (unintelligible) project purpose. So if you consider what  
15 life was like without CalFed -- and the CVPIA had no fish or  
16 wildlife purpose and no money for it, and now you have  
17 CalFed, you have a minimum of 50 million bucks a year you're  
18 spending on environmental stuff, I don't know how you could  
19 possibly say it's bad for the environment. It could be  
20 better, but it's a whole lot better as a program -- it's  
21 absolutely going to be beneficial compared to no CalFed,  
22 which there is no project for Fish & Wildlife. It's just how  
23 you look at it.

24 (Multiple speakers.)

25 MR. McLAIN: Well --

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1           MS. NEUMAN:  What Jeff was saying was there may be  
2   some aspects of CVPIA specifically that we're either not sure  
3   or --

4           MR. McLAIN:  Yeah, right.  That's what I was -- yeah,  
5   the impacts of gravel on the species --

6           (Multiple speakers.)

7           MR. OPPENHEIM:  They're great for salmon, but what's  
8   it doing for green sturgeon?

9           MR. McLAIN:  We just don't know.

10          MS. LUCAS-WILLIAMS:  Overall let's just say CalFed  
11   and CVPIA are both beneficial?

12          MR. BIRK:  Well, the "I" in CVPIA is "Improvement,"  
13   right?

14          (Multiple speakers.)

15          MS. NEUMAN:  But I think as Jeff pointed out, we  
16   probably are going to have to break down the programs into  
17   their components at some point.  And when I say "we," you  
18   know, everybody at NMFS who's working with green sturgeon,  
19   whether the rule making or Section 7.  And probably it's  
20   going to be assigning a positive, negative, no affect, don't  
21   know.  We need to refine our scale than just the entire  
22   program.  I don't think anybody would disagree that overall  
23   it's good.

24          MS. LUCAS-WILLIAMS:  There's several processes going

25 on right now to look at the CVPIA. We just had to provide

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1 some stuff (unintelligible) for a federal review, and then  
2 there's an internal review going, and we're going to try and  
3 go through some of those. We don't have to necessarily  
4 agree, but there are some things that we may want to get  
5 copies of.

6 MS. NEUMAN: That would be great. Should we contact  
7 you?

8 MS. LUCAS-WILLIAMS: Yeah.

9 MS. NEUMAN: Okay. FERC Re-licensing. Don't know?  
10 Will know in five years?

11 MS. SEEHOLTZ: I can't tell you.

12 MR. SMITH: I assume, again, we're talking about  
13 Feather River.

14 MS. NEUMAN: We are. Well -- yes, I mean -- but  
15 there may be, as somebody mentioned, other dam-related  
16 activities that are not related to FERC Re-licensing in the  
17 Feather. But we've got up there.

18 MR. SMITH: Or green sturgeon.

19 MS. NEUMAN: For positives, negatives, no affect, or  
20 don't know for green sturgeon specifically.

21 MS. SEEHOLTZ: More than likely it's going to be  
22 positive. I mean we're going to be having -- we're supposed  
23 to be having flow and temperature changes, so I can't see  
24 that being negative. As of this point in time, I haven't  
25 seen any green sturgeon language, but that could have been

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1 determined. So...

2 MR. McLAIN: If we're pooling all the FERC projects  
3 together, I would say it would be variable. We have some  
4 positive effects and some negative effects.

5 MR. WARD: I think I would agree with that. It  
6 depends upon what you decide is the critical habitat. If you  
7 do some of those small (unintelligible), there is a FERC  
8 Re-licensing going on at Butte Creek which could be extremely  
9 detrimental to both salmon and sturgeon, although we don't  
10 have records of sturgeon in that system.

11 MS. NEUMAN: Well, I think we have records of  
12 sturgeon in the Feather River, we just don't know whether  
13 they're spawning or not.

14 MR. SMITH: You're talking about --

15 MR. WARD: That was Butte Creek.

16 MS. NEUMAN: Butte Creek.

17 MR. WARD: But there is a FERC re-license in place  
18 which also affects salmon.

19 (Multiple speakers.)

20 MS. NEUMAN: Okay. Susan's going to move over here  
21 to the additional and write on these sheets.

22 Okay. Dam operations.

23 MR. SMITH: For me that's a positive and a negative.  
24 Taking Red Bluff Diversion Dam is an example of -- prior to  
25 '86, the gates were in all year round, and that was a real

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1 negative operation. Currently they're only in four months,  
2 which means they're up eight months a year, which expands  
3 their range of -- likely expands the range for green sturgeon  
4 spawning. So that's a positive and a negative. But  
5 currently they also go in on September 15th which does limit  
6 that. So to me that's a positive and a negative, the same  
7 operation. So you've got to break it down a bit, I would  
8 think.

9 MS. NEUMAN: With respect to Red Bluff. But what  
10 about dams that are not --

11 MR. MICHNY: Isn't that the same -- because the dam  
12 releases water out, which then changes the water flow  
13 alteration and regulations. That's the end product of  
14 opening and closing gates on a dam. So aren't they kind of  
15 the same thing?

16 MS. NEUMAN: Uh-huh. I think, yeah, one is sort of a  
17 sub-set under another --

18 MR. MICHNY: Or you can even put like dam  
19 operations/water flow alterations -- you know, I think it's  
20 the same thing.

21 MS. NEUMAN: You know, here when I see "dam  
22 operations," I'm thinking about blockage to adult passage,  
23 which in my mind is a negative.

24 MR. MICHNY: Yeah, but what are you going to do about  
25 that in the 4(d) rule? You're not going to come in and say

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1 "take out" -- I mean that's like part of -- I mean they're  
2 there. The 4(d) rule is not going to come in and say "You  
3 have to take out Shasta Dam."

4 MS. NEUMAN: Well, I'm just telling you what I'm  
5 thinking. I'm not saying that what thinking is going to be a  
6 part of the 4(d) rule or whether it has any place in being  
7 part of the 4(d) rule.

8 MR. MICHNY: Yeah, I think we all agree the dams have  
9 negative affects, okay. But I'm just -- you confused me on  
10 how they integrate in the 4(d) rule.

11 MS. NEUMAN: Yeah. You know, this is a 4(d)  
12 workshop, I'll remind everybody again. But it's also a  
13 brainstorming session. And we're trying to determine here  
14 positives, negatives, no affect, don't know of these  
15 activities. I think it remains to be seen when we go home  
16 with this list what we're going to do with it for the 4(d)  
17 rule. But there are many other aspects of what we do which  
18 would benefit from understanding these things and hearing  
19 your ideas on whether these activities are positive or  
20 negative, we don't know. So what we're talking about here  
21 isn't necessarily going to the 4(d) rule.

22 MR. MICHNY: Okay.

23 MS. NEUMAN: You can say that dam operations are  
24 negative, and it might have nothing to do with what comes out  
25 in that 4(d) rule.

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1           MR. BOYTRESS: This is more of a seasonal dam that  
2 we're talking about here.

3           MS. LUCAS-WILLIAMS: Red Bluff?

4           MR. BOYTRESS: So where there's areas where you can  
5 change your operation because it can be, then go ahead.

6           MS. NEUMAN: Well, actually, I have a question about  
7 that. I mean at some point dams need maintenance, dams need  
8 to be replaced. Who -- who makes -- who makes those  
9 decisions about -- about at what point it becomes more cost  
10 effective to put in a dam if it's falling apart anyway that  
11 is more fish friendly? And I'm just wondering about that. I  
12 mean obviously the decisions for Red Bluff came down  
13 because -- why? Was it time to think about --

14           MR. SMITH: The ESA -- it was a Biological Opinion.  
15 (Multiple speakers.)

16           MS. NEUMAN: It was completely governed -- it wasn't  
17 that that dam was falling down and it needed replacing and  
18 this was a good way to be fish friendly.

19           MR. BIRK: All the dam activities at the federal CBP  
20 facilities like Red Bluff do have in some cases biological  
21 conditions that govern operation and maintenance as well. So  
22 those are part of the (unintelligible) or whatever you want  
23 to call it --

24           MS. NEUMAN: There's feasibility studies that are  
25 happening for Shasta Dam, for example. What is that being

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1 motivated by? Is it an ESA issue?

2 MR. NEPSTED: It's one of CalFed's water storage  
3 projects. And so it's for water storage is why they're  
4 looking at it. But a purpose for raising of the dam would be  
5 to get additional water for Fish & Wildlife uses as well as  
6 other uses. And so -- the reason I brought it up is because,  
7 you know, flow turns out to be a limiting factor in the  
8 Sacramento River for sturgeon. There isn't any other water  
9 to give them unless you raise Shasta Dam or you build some  
10 other -- like a side (unintelligible) and then after it's  
11 built up, you could use that to get additional water in the  
12 river for sturgeon. But the principle driving line is water  
13 storage.

14 MR. BIRK: How about beneficial use?

15 (Multiple speakers.)

16 MR. NEPSTED: Beneficial use, one of which would be,  
17 you know, Fish & Wildlife from dams. They'll all maybe need  
18 to be replaced. And the big dams still fall apart and need  
19 to be replaced, so that --

20 MS. NEUMAN: Sorry?

21 MR. NEPSTED: Well, you were observing that, you  
22 know, eventually they crumble apart. The big ones don't  
23 really do that. I mean Folsom Dam isn't even half cured yet.  
24 So, you know, it will be another 50 years before the cement  
25 is even hardened all the way through.

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1           MR. BOYTRESS: But they do fill up with sediment, the  
2 big ones.

3           MR. NEPSTED: Well, that's probably true.

4           MS. NEUMAN: But the cost of doing maintenance  
5 doesn't compare to what the cost of putting in a whole new  
6 dam would be.

7           MS. LUCAS-WILLIAMS: Flood control and some of those  
8 other things that they provide.

9           MS. NEUMAN: Okay. Let's move on. Water acquisition  
10 programs.

11          MR. BIRK: I offered that one up. It's still not  
12 clear to me, and I've heard a fair amount of dispute about  
13 that, whether you acquire more water for sturgeon and whether  
14 that's a good thing or a bad thing. I don't know. I  
15 imagine --

16          MS. NEUMAN: So we don't know.

17          MR. BIRK: -- for certain species' life histories it  
18 could help. But -- and, again, most of those come as a -- or  
19 are linked to your choice of using salmonid habitat as a  
20 surrogate for -- I'm just making a leap of faith. So I'm  
21 still going to say more water in some places is likely to  
22 benefit most life stages. But on this upper Sacramento, you  
23 really don't need more water to generate cooler temperatures,  
24 which is, I think, a factor, I think, because we have the  
25 other ways of doing it.

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1 MS. NEUMAN: Uh-huh.

2 MR. MICHNY: I'll make a differentiation here. All  
3 of the water acquisition programs that I'm aware of are for  
4 environmental purposes, for refuge of fisheries, which is  
5 distinct from people buying water to -- you know, for  
6 contract or M&I or ag use, but it all -- I mean we have a  
7 water acquisition program in our CVPIA administered by  
8 Reclamation and it's all refuge and fish water that they're  
9 buying not for other uses. Just so you have that concept in  
10 mind. When we talk about water acquisitions, it's pretty  
11 much all environmental water.

12 MR. BIRK: I think that's really more accurately  
13 stated that way. It should be environmental water  
14 acquisition, a specific purpose. And there are four programs  
15 at least.

16 MS. NEUMAN: Okay. Fish passage issues at  
17 diversions.

18 MR. CADRETT: So what's the question? Is that -- are  
19 diversions a problem for fish passage or is fish passage past  
20 diversions is good? What are you trying to -- I don't  
21 understand how that's -- what that's saying.

22 MR. ISRAEL: I mentioned that because it seemed like  
23 at some diversions -- I think Alicia mentioned one earlier  
24 today, we mentioned that at Red Bluff there might be some  
25 passage issues at the diversions, and that could potentially

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1 be negative. If there wasn't any downstream for them to  
2 spawn, it could be eliminating spawners. So that's sort of  
3 what I threw it out there for. You know, I don't think -- we  
4 know if there's habitat downstream where they could be  
5 spawning, then maybe fish passage isn't a problem.

6 MS. SEEHOLTZ: Yeah, I think it's largely an unknown.  
7 Because even though our assessment kind of indicated that  
8 passage at the Sunset Pumps is possibly unlikely, we're still  
9 seeing them every year at the outlet. So they're getting  
10 past there somehow.

11 MS. NEUMAN: Just to reiterate the focal -- the focus  
12 question, it's what types of affects of the things that we've  
13 listed here are going to have on green sturgeon.

14 MR. ISRAEL: Well, you mentioned one, but I don't  
15 know if --

16 MR. BOYTRESS: I was going to say that one thought is  
17 that there's been a lot of studies at Red Bluff Diversion Dam  
18 about juvenile salmonid passage being affected by predation  
19 below the dam. Potentially that could be an issue with green  
20 sturgeon juvenile passage as well. But that is unknown, I  
21 guess, at this point as to what extent.

22 MS. NEUMAN: Okay. I think we already covered screen  
23 criteria.

24 MR. WARD: I would offer a nuance to that because I  
25 don't think it's fish screen versus meandering; it's

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1 fish-screening standards versus meandering. You could have a  
2 fish screen and still have meandering but maybe not meet the  
3 current standard.

4 MS. NEUMAN: I guess the question is, it seems like  
5 there's some positives, there are some negatives but there's  
6 also a lot of "I don't know." So I'm not sure what outweighs  
7 what, whether the "I don't know" --

8 MR. WARD: Well, it's relative or -- at this point  
9 right now in the upper Sacramento River, because we have  
10 projects that are awaiting an answer to that or may be  
11 looking to that -- I don't have the answer. I know there's  
12 some very significant opinions on that. Certainly I know  
13 what physical affect there is.

14 MS. NEUMAN: Right. I mean we have evidence that  
15 screens do divert salmonids.

16 MR. WARD: Do prevent them from being diverted.

17 MS. NEUMAN: Sorry, prevent them from being diverted.

18 MR. WARD: Right.

19 MS. NEUMAN: And that might be interpreted as a good  
20 thing for sturgeon depending on the size of the sturgeon as  
21 they pass the screen and -- pass by the diversion, that is.  
22 And then there is this question of whether they do more harm  
23 than good to the ecosystem on the whole.

24 MR. WARD: Well, I think -- in fact, I think Frank  
25 Britney did some study on the value of riprap versus natural

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1 riparian bank, and so there are studies out there that  
2 suggest that the solution is a riprap cross-section, and that  
3 doesn't have a habitat value that a normal functioning  
4 meandering river may have for salmon.

5 MR. MICHNY: Right. And it's going to change the  
6 reach of the river. You know, at the Colusa, the river is  
7 channeled with riprap, and so the screening diversions down  
8 there doesn't affect the ecosystem because the banks are  
9 armored. And I think when you get above Colusa, I think one  
10 mile -- River Mile 144 upstream, the river is meandering, and  
11 there, you know, putting in fish screens and fixing a point  
12 becomes an ecological issue where it's not -- it changes with  
13 the reach of the river.

14 MS. NEUMAN: Operations of the Delta Cross Channels.

15 MR. OPPENHEIM: I can see those mainly as negative.  
16 You have the delay and blockage problem when the gates are  
17 closed. Adults coming up behind -- I think they're holding  
18 or going back all the way down into the Delta and back up the  
19 main stem. And then you have juveniles that could be coming  
20 down and going through the Cross Channel into the Central  
21 Delta and maybe they're preyed on more than they would be if  
22 it (unintelligible).

23 MS. LUCAS-WILLIAMS: These operations are going to  
24 get complicated if you try and change it because there's  
25 stuff in State Resources Control Board, there's stuff in the

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1 river (unintelligible) and salmon operations that we need to  
2 sort of take a look at and see what we do with Cross Channel  
3 operations.

4 MR. BIRK: That brings up a pretty good point. I  
5 didn't want to bring it up earlier, but it's the same thing  
6 with the screens. The reason we're putting screens in is  
7 because they're mandated by the ESA laws to protect one  
8 resource. Now somehow you're going to have to reconcile --  
9 regulatory agencies are going to have to decide what do you  
10 do so you don't compromise what's mandated and we have major  
11 investments in with something that may or may not be a  
12 negative impact. And I think the Cross Channel is another  
13 one of those examples probably. The OCAP opinion, nobody's  
14 doing these things unilaterally; they're being done because a  
15 lot of folks have thought about it, and apparently they're  
16 providing some protection for the stuff that came up first.

17 MS. NEUMAN: Well, yes, you know, I agree. But with  
18 regard to the green sturgeon and the 4(d) rule, it's not like  
19 we would undo what's trying to be accomplished for salmon  
20 through that 4(d) rule and other measures. I think we would  
21 just think very carefully about whether or not encouraging  
22 people to install salmon-safe screens to benefit sturgeon is  
23 really the way we want to go here, or do we want to put some  
24 more thinking into this. And the folks in our  
25 Santa Rosa office, the engineers in our Santa Rosa office I

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1 think are going to be tackling this question, whether there's  
2 a set of green sturgeon screen criteria that could even be  
3 developed. And if that's the case, then it's not going to be  
4 coming down for a long time, I think.

5 MR. VOGEL: If that's the case, then how do you have  
6 authorized -- provide authorized take?

7 MS. NEUMAN: How do you provide authorized take in  
8 the event of what?

9 MR. VOGEL: Well, say green sturgeon are entrained  
10 through the screen diversion. Do you provide a regulatory  
11 protective coverage for the diverters because they would have  
12 an unauthorized take?

13 MR. OPPENHEIM: He's talking about until the rules  
14 come out.

15 MR. VOGEL: Right.

16 MR. OPPENHEIM: You said it might be two years.

17 MS. NEUMAN: Right.

18 MR. OPPENHEIM: So you've got a listed fish that's  
19 threatened, and you've got two years of no take specified.  
20 So --

21 MS. NEUMAN: Right.

22 MR. OPPENHEIM: -- is there --

23 MS. NEUMAN: Unless you're a federal entity. In that  
24 case, you know, you need -- hopefully you're consulting.

25 MR. MICHNY: Wait, wait. You're getting to a point

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1 here that I didn't want to bring up again, but at the break  
2 at lunch, we were -- some of us are totally confused on this,  
3 and it's really important, I think, is that my understanding  
4 when I came in here -- and I asked you a question, and I  
5 thought you agreed in the affirmative -- that, okay, there is  
6 no take prohibition until you issue a 4(d) rule. So if a  
7 federal agency is involved --

8 MS. NEUMAN: No -- right. But you -- you need to be  
9 consulting.

10 MR. MICHNY: Yeah, I know.

11 MS. NEUMAN: That process needs to be --

12 MR. MICHNY: You totally right. I agree.

13 MS. NEUMAN: Because as long as that's happening,  
14 there is grace.

15 MR. MICHNY: Yeah, the point -- okay. We're going to  
16 consult now on federal operations on green sturgeon. We got  
17 a letter. Okay? Okay. In a couple of months -- you're not  
18 going to have a 4(d) rule out for two years. Okay? In a  
19 couple months, we're going to get a Biological Opinion. That  
20 Biological Opinion is going to address the jeopardy question,  
21 right? There's not going to be any incidental take statement  
22 in there because take is now prohibited. So we're going --

23 (Multiple speakers.)

24 MR. MICHNY: -- consult and we're going to follow the  
25 regulations. We're going to consult, and we're going to get

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1 an opinion. But until the 4(d) rule is out, all the opinions  
2 we get are not going to have a take statement --

3 (Multiple speakers.)

4 MS. NEUMAN: It will cover you until the 4(d) rule  
5 comes out.

6 MR. MICHNY: It will cover you. Okay. But it won't  
7 be specific -- so it will, in essence, say, "Here's an SL  
8 take statement. You're just covered procedurally because  
9 you've consulted." That's my understanding. If I'm wrong,  
10 somebody tell me different.

11 MS. NEUMAN: There can be -- there can be an  
12 incidental take statement if there are no take prohibitions.

13 MR. MICHNY: Right.

14 MR. OPPENHEIM: Well, the way I understand it is that  
15 we can go ahead and write an incidental take statement. It  
16 doesn't become effective until the green sturgeon 4(d) rules  
17 come out. And then when it does come out, that holds over --  
18 but we actually specify terms and conditions in this -- in  
19 the interim period.

20 MR. MICHNY: How can you do that if you don't know --  
21 if you don't know what's causing the problem and to what  
22 degree? I thought that's what the 4(d) rule was all about.

23 MR. OPPENHEIM: Well, we know what's causing the  
24 problem.

25 (Multiple speakers.)

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1           MR. MICHNY: Okay. All right. Let's -- yours is  
2 kind of a middle thing.

3           MR. OPPENHEIM: I agree, at the end of the -- we'd  
4 have to evaluate the take at that point and see if it's  
5 consistent with the 4(d) rule, for sure. And then, you know,  
6 if there was some that weren't, we'd probably have to amend  
7 the opinion or something.

8           MR. MICHNY: But we'd want to have something in  
9 place -- otherwise you'd have to re-initiate the whole  
10 opinion again when the 4(d) rule comes out.

11          MR. MICHNY: That's what I thought we had to do. But  
12 what you're saying makes sense, and it's kind of like the  
13 middle ground where I thought we were.

14          MR. OPPENHEIM: It's just like if we had a conference  
15 opinion, you'd already take issues in that, and it would just  
16 roll over once it became effective.

17          MR. MICHNY: Okay.

18          MR. VOGEL: What about all the other non-Bureau  
19 projects, though? From what you said, it sounds like they  
20 all have to initiate consultation. If they receive federal  
21 funding for the screens, if they're installing them this  
22 summer or next year --

23          MS. NEUMAN: Yeah, if there's a federal nexus, they  
24 need to initiating consultation as of July.

25          MR. VOGEL: Okay.

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1           MR. WARD: I heard that you're going to have those  
2 done in two months. I'll send you the list in my area. It's  
3 going to be voluminous.

4           MR. VOGEL: You may want to consider having -- I  
5 think what he was saying is have a blanket --

6           MS. NEUMAN: It's not like the rule just came out.  
7 You know, the proposed rule was out last April, and the final  
8 rules came out in April. This shouldn't be new news to  
9 anybody sitting here that they've got to put together an  
10 initiation package by July.

11          MR. OPPENHEIM: Yeah, if you have a current like  
12 operational federal action, you should already have a  
13 conference opinion in place.

14          MS. NEUMAN: I think we fully understand what our  
15 additional work load is going to be. I think people like  
16 Bruce and Jeff are taking deep breaths every night.

17                   (Multiple speakers.)

18          MR. BIRK: Melissa, I missed something here. I just  
19 basically do the federal projects, and the Section 7 process  
20 covers us, and we do some extraordinary research when we do  
21 the Section 10. What did you say, we should -- other people  
22 should be initiating by July? What's that terminology you  
23 used?

24          MS. NEUMAN: July? -- You should be thinking -- you  
25 should be initiating consultation with us, which means

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1 putting together an initiation package for us.

2 MR. BIRK: For what -- for what diversions? For any  
3 diversion that may be having some take of green sturgeon?

4 MS. NEUMAN: Yes.

5 MR. BIRK: Whether it's federal or any other  
6 diversion? Does it matter?

7 MS. NEUMAN: If there's federal nexus. So it's  
8 operated by the federal agency, it's funded by a federal  
9 agency --

10 MR. BIRK: Okay. So the bigger component, the ones  
11 that are affected by the Tracy pumps, for example, the  
12 screening facility that provides water to the main CVP users,  
13 you guys -- have you done this?

14 MR. MICHNY: No.

15 MR. BIRK: Let me ask this question, because this is  
16 a big policy thing that several of us don't agree on.  
17 Reclamation, we operate the project to put water in a river  
18 for diverters to take at certain times in certain quantities.  
19 Other than the Tracy pumps, we do not own the diverter  
20 facilities, we don't control them, we don't pay them, we  
21 don't do anything with them. So what we've done in our  
22 previous consultations is we've had not asked for any  
23 incidental take coverage for private diverters. It's up to  
24 them how they get the water out of the river. They can take  
25 it by buckets, they can sip it out with a straw, they can do

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1       whatever they want. But the federal action is to provide a  
2       certain quantity of water at a certain time for them to take  
3       to their facilities. And we can argue it, but we are --  
4       we've been through our (unintelligible) on this, and -- and  
5       the answer is that, you know, they are non-federal facilities  
6       that are not controlled, you know, funded, maintained,  
7       anything by the federal government. So our view is that all  
8       of the private -- all of the irrigation districts that  
9       take -- sell water, they've got to float their own boat with  
10      the ESA. You know, we're not going to consult on their  
11      activities. And that's where we're at right now unless  
12      somebody tells us differently.

13               MR. MICHNY: Is that (unintelligible) Diversion Dam?

14               MR. BIRK: What?

15               MR. MICHNY: Is that the (unintelligible) Pump  
16      Diversion Dam?

17               MR. BIRK: No, that's --

18               (Multiple speakers.)

19               MR. MICHNY: You've probably got 250 diverters on the  
20      Sacramento River that take federal water, and we're not  
21      asking for consultation for any of those. They have to float  
22      their own boat.

23               MR. BIRK: At Glenn-Colusa we spent a little bit --  
24      when you guys got your permit for research --

25               MR. MICHNY: That's a report --

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1 (Multiple speakers.)

2 THE REPORTER: Wait, wait, wait. One at a time.

3 MR. BIRK: I don't know if this would be helpful or  
4 not. Federal nexus; federal money, right?

5 (Multiple speakers.)

6 MR. VOGEL: I got an answer to my question earlier.  
7 We have to do Section 7 for federal funds to pay for  
8 monitoring and research. That's how we're going to deal with  
9 it.

10 MR. WARD: There's a fundamental question, Melissa,  
11 for me based on what Frank said. There are 240 CVP contracts  
12 that are competitive for the upper Sac.

13 (Multiple speakers.)

14 MR. WARD: Okay. Whatever. But -- and they're not  
15 covered by you folks under your consultation. Are you  
16 suggesting that each of those, because there's a federal  
17 nexus, must now consult?

18 MS. NEUMAN: You know --

19 MR. WARD: Because they've already been built, and  
20 they're operating to standards and been monitoring --

21 MS. NEUMAN: I guess --

22 (Multiple speakers.)

23 MR. WARD: No, they're not.

24 MS. NEUMAN: -- all I'm able to say is, is that if  
25 they are taking sturgeon and we haven't produced a Biological

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1 Opinion that analyzes the affects of them taking sturgeon,  
2 then they're in violation.

3 MR. WARD: Well, let me play devil's advocate --

4 MS. NEUMAN: And it's not like we're going to go and  
5 seek these folks out. I mean there is some implementation  
6 here in the Act. You know, we can't go seeking out folks and  
7 make them initiate with us. I mean, you know, we have to  
8 have some faith, I guess, in folks out there that they are --

9 MR. BIRK: How are you going to document that they're  
10 taking sturgeon? It's the same problem we had when people  
11 were unscreening diversions and voluntarily said, "We're  
12 going to go ahead and screen" because they were convinced it  
13 was in their best interest even though they said, "We never  
14 took a salmon ever." So it's back to this chicken and egg  
15 thing. How are you going to prove --

16 MS. NEUMAN: Well --

17 MR. BIRK: -- especially for the ones that are  
18 screened?

19 MS. NEUMAN: You know, I don't think that I have the  
20 answer to these questions. You know, if I had the money, I  
21 think it should be part of NMFS's role to be doing more  
22 monitoring and assessment in these places. And, you know, we  
23 understand the limitations here. If these folks don't know  
24 whether they're taking green sturgeon or not, it's really up  
25 to that person to say, "Do I want to go through the process

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1 and cover myself in the event that some day someone finds out  
2 that there is a green sturgeon in my diversion, or am I going  
3 to take the risk?"

4 MR. BIRK: Well, I want to -- the people that I work  
5 for, which are basically federal water users, some of them  
6 are a little easier because they have a nexus to the feds  
7 because they have a relationship with (unintelligible)  
8 Diversion Dam. But it's pointed out that anywhere between  
9 154 and 200 diversions that are part of the CVP of which I  
10 know at least 20 or 30 have been screened in the last ten  
11 years, right?

12 MR. WARD: That's about the limit of them.

13 MR. BIRK: So one might make the conclusion that  
14 there's a bunch of them that are screened. I'm more  
15 concerned about the ones that haven't been screened. They  
16 initiate consultation with you on green sturgeon before July.  
17 That's what they need -- that's the message -- the take-home  
18 message to them? Even though we don't know they're taking  
19 them, whether we know they're even present there, whether  
20 there's no commercial or scientific evidence in some cases to  
21 stop them either way? I'm just asking. I'm not making a  
22 judgment. I just want to be able to give them the best --  
23 I'm meeting with them on Tuesday. This is a big deal for us.  
24 I need to be able to be clear on my message.

25 MS. NEUMAN: Did they do it when the salmon listings

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1 came down while we were screening on the diversions right  
2 now?

3 MR. BIRK: Well, that's a long story, but -- partly  
4 because we have (unintelligible) funding available and we've  
5 had criteria that was accepted by the feds and the state that  
6 was acceptable for the screens in the first place. They were  
7 located in priority zones. They were taking a significant  
8 amount of water. And it was part of the Section 7  
9 consultation. I mean Red Bluff Diversion is certainly part  
10 of OCAP.

11 MR. MICHNY: Red Bluff Diversion Dam is a federal  
12 facility.

13 MR. BIRK: So -- on the ones that I'm most familiar  
14 with. Otherwise, why don't you just put proactively, this is  
15 a good thing for us to just -- as referred to -- the ones who  
16 want to be in the farming business --

17 (Multiple speakers.)

18 MS. NEUMAN: You think that should be --

19 (Multiple speakers.)

20 MR. BIRK: Some people did that. Yeah, what I heard  
21 earlier today is that there aren't any screening criteria and  
22 that should be more stringent than what we have for chinook  
23 right now. So somebody needs to make a decision that if  
24 you're going to put a screen on, how about letting us know  
25 what the criteria is going to be like, whether it -- you

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1 know, all those things. I've worked in the screening program  
2 for ten years, so I have a little bit of history in it. I  
3 just want to be able to know, hey, look, there's something  
4 coming up and it's as soon as July, and I didn't know that  
5 until just today. But then, again, I'm not aware of anybody  
6 having a take for green sturgeon. That's not to say that  
7 they are or not. Anyway, the only way you're going to get  
8 that kind of data is by monitoring.

9 MS. NEUMAN: Right. And we're not doing it.

10 MR. BIRK: No. And neither is Fish & Game. But  
11 there is a fair amount of monitoring done in places where we  
12 put screens because it's a condition of the construction of  
13 one.

14 MR. URKOV: And the folks that don't have screens  
15 aren't monitoring, and a lot of those guys don't know how to  
16 tell NMFS.

17 MR. BIRK: You know, when we started this -- before  
18 AFRP, AFST, and CVPIA, NMFS, Fish & Game, Bureau of  
19 Reclamation, and Fish & Wildlife Service had a workshop at  
20 the Colusa Fair on why screens needed to be done. Something  
21 you might want to consider re-doing for sturgeon and doing a  
22 little more public outreach beyond this 4(d) rule. Because  
23 most of the people I work with, at least in the ag field, are  
24 the fields right now. They're not 4(d)'ing anything.  
25 They're sending me and Dave and other people to come here.

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1 We need something -- you need to do a little more public  
2 outreach to -- and something in the public -- in the Federal  
3 Register or something else to let this message get out, hey,  
4 we listed this thing. We're developing a 4(d) rule which is  
5 likely to take two to three years, who knows. But we need to  
6 get a sense of what the implications are --

7 MS. NEUMAN: We need to -- I need to defend what  
8 we're doing here and say that lots of people commended us of  
9 sticking to the time line for these things and holding these  
10 scoping workshops and making every attempt to get the word  
11 out on these issues. It is very hard to reach out to  
12 everyone. And this proposed rule was published in the  
13 Federal Register notice; it was posted on our web site; it  
14 was published in all of the local newspapers. There were  
15 NMFS press releases. If people don't read the papers, if  
16 people don't look at the web sites, people aren't checking  
17 the Federal Register, I don't know what else we can do.

18 MR. BIRK: I can offer you a few things, but we'll do  
19 that some other time. I'll just send you a memo of what you  
20 can be doing other than looking at a web site.

21 MS. NEUMAN: Okay. Because we're here having a  
22 workshop, too, and we tried to --

23 MR. BIRK: I don't see any diverters here except for  
24 the one presentation we had here this morning, and that was  
25 from Red Bluff Diversion Dam. They're likely to be covered

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1 by Section 7.

2 (Multiple speakers.)

3 MS. NEUMAN: Well, they knew about it but they didn't  
4 come. We can't force people to come. We also had a  
5 recreational fishing workshop yesterday and invited bait shop  
6 owners and recreational fishers. We had one person come. We  
7 had public hearings, ten people showed up in this room.

8 MR. BIRK: Well, something's not working, Melissa.  
9 I'm just suggesting you might want to expand on that effort.  
10 And there's a bigger message here than just this 4(d) rule,  
11 and that message is that by July, people need to initiate  
12 consultation. I will do my part, at least for the federal  
13 people.

14 MS. NEUMAN: If you have suggestions on how we can do  
15 better outreach, we'd love to hear it.

16 MR. WARD: Melissa, I think I have one -- to get back  
17 to these diverters in my area, this happens to be the height  
18 of the ag season, so probably you could assume that you can  
19 get diverters and ag folks to come to Sacramento at this time  
20 of year would be really difficult for them. So if there's a  
21 chance some time to hold a focus session in the upper Sac,  
22 Chico, or Red Bluff, probably at night, in the evening, that  
23 would really help. I think you'd attract some of those folks  
24 that maybe didn't come.

25 MS. NEUMAN: Paul, if you can send me some

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1 information on locations and maybe give me some contact  
2 information as well --

3 MR. WARD: Okay.

4 MS. NEUMAN: -- that would be great. We are  
5 definitely considering holding other workshops.

6 Okay. I think we're getting off topic a little here.

7 MR. NEPSTED: Yeah, to get back to a comment that  
8 Paul's made about four times, but I think the significance of  
9 it is at least settled with me. If there's 150 or more  
10 diverters in the upper Sacramento River and most of those are  
11 unscreened and to screen them means making a mile or so hard  
12 point along the river, then, in essence, we would be -- you  
13 know, it's something to consider that a fish-screening  
14 requirement is basically going to channelize the entire upper  
15 Sacramento River and lose all natural river processes. And  
16 the only reason we haven't seen it so far is because so few  
17 people have gone ahead and actually done the screen. So I  
18 think that is something to at least ponder. And that would  
19 be independent of extra criteria for sturgeon. That's just  
20 screening in general for salmon. That if everyone actually  
21 went out and built a screen tomorrow and did all the  
22 necessary monitoring to make sure that the river stayed where  
23 it needs to be, we would -- you know, there might be a  
24 considerable amount of negative impact to the river as a  
25 whole as a result of that.

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1           MR. URKOV: Mike, you make a good point. And at the  
2 risk of beating this horse further, I said earlier there's  
3 154 diverters on the river. The 20 largest account for over  
4 90 percent of the federal diversions to agriculture and, to  
5 my knowledge, all 20 are screened. So, you know, how much  
6 effort would you really want to spend, you know, going after  
7 that 10 percent and then that 5 percent and then that 2  
8 percent? I mean it's going to take an enormous amount of  
9 effort to go out there for an increasingly smaller and  
10 smaller diversions. So the big guys -- the GCID was the  
11 first screened, basically, and the big ones are all done or  
12 are in progress.

13           MR. WARD: In response to that, I'd agree that what  
14 you just said is true. But would those constituents that  
15 aren't -- I, as a representative of Fish & Game, have nothing  
16 to offer them. You're hanging out there; you're taking a  
17 chance. You're very small and likely nothing's going to  
18 happen, but I don't know that. And so I think in this  
19 process we need to give them some sort of an assurance or the  
20 take authority, which you have the right to give, as do we.  
21 But it needs to be something that gives these folks assurance  
22 that they either know that eventually they have to put a  
23 screen on and/or they have a take authority that covers that.

24           MR. URKOV: And so that's why it would be nice for  
25 this collection of small diverters to be able to say that the

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1 value that they're providing in terms of meandering in the  
2 river instead of screening is worth something because you'd  
3 have a tiny increment of fish protection at the extent of,  
4 you know, probably over 100 hard points on the river.

5 MR. HOLT: For one thing, it offsets that  
6 (unintelligible). There are very few diverters between  
7 Anderson/Cottenwood and Red Bluff, not that many at Red Bluff  
8 down to Hanford City. Now, most of your diversions occur at  
9 Willapa River. It's already full of riprap and  
10 channelization anyway. So -- Jim disagrees. But basically  
11 most of them -- most of your irrigated lands and  
12 (unintelligible). And most of the diversions -- we've got a  
13 big diversion up at Red Bluff (unintelligible).

14 (Multiple speakers.)

15 MR. HOLT: You've got a diversion right there, and  
16 then you've got a section of river where --

17 (Multiple speakers.)

18 MR. HOLT: You've got Red Bluff.

19 (Multiple speakers.)

20 MR. VOGEL: Excuse me. Melissa, I've got a  
21 suggestion. Why -- why can't NMFS issue, for lack of a  
22 better term, an emergency 4(d) rule that would provide  
23 blanket coverage for all these scenarios we're talking about  
24 given the fact that NMFS hasn't decided whether or not there  
25 should be criteria diverting for the salmonids -- you know,

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1 issue to all these diverters -- couple hundred diverters and  
2 so forth that aren't educated on it and so forth, and that  
3 would provide them the regulatory coverage until such time as  
4 the final 4(d) rule comes out and NMFS determines what it  
5 wants to do about the fish-screening issue?

6 MS. NEUMAN: Emergency -- okay. We'll consider it.

7 MR. WARD: I would suggest, too, Melissa that, you  
8 know, I have an old copy here, but we have a fish -- a  
9 screen -- or a diversion inventory that you guys should have  
10 in your hands. That's just the Sacramento River in my area.  
11 And most of them are those smaller diverters, but,  
12 nevertheless, they have no take coverage even for salmonids.

13 MS. NEUMAN: Uh-huh. Okay.

14 All right. We have to be moving on. Harbor-dredging  
15 activities is probably unknown. Does anybody disagree with  
16 that at this point?

17 Water Quality Control Plan?

18 MS. LUCAS-WILLIAMS: Don't know.

19 MS. NEUMAN: Don't know?

20 MS. LUCAS-WILLIAMS: We don't know much about the  
21 fish and what the current standards are (unintelligible)  
22 whether it's helping or hurting.

23 MS. NEUMAN: Off-stream storage programs?

24 MR. WARD: They could be a net negative or a net  
25 positive. It depends, I guess. Using (unintelligible) as an

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1 example, there may be a new diversion in the vicinity of  
2 Colusa that would to 3 to 10,000 cfs, I presume, that would  
3 be -- could be detrimental depending on how it's designed.  
4 On the other side, having an off-stream storage site could  
5 make up for some river diversion at key times of the year  
6 might be a positive.

7 (Multiple speakers.)

8 MR. BIRK: (Unintelligible.)

9 MR. OPPENHEIM: Either way, you know,  
10 (unintelligible) separate Section 7 notification unless it's  
11 totally funded by CalFed or something else.

12 UNIDENTIFIED SPEAKER: I doubt that would happen.

13 (Multiple speakers.)

14 MS. NEUMAN: Environmental Water Account?

15 MR. MICHNY: I would say it's a question mark right  
16 now. I don't think we know.

17 MS. NEUMAN: New water right applications, especially  
18 in the upper Sacramento?

19 MR. WARD: I put that up there. I would suggest that  
20 probably would be a negative because we are finding that many  
21 of the traditional water right users or water users are  
22 finding -- particularly for rice decomposition are finding  
23 the use for water at key times when they haven't in the past.  
24 And so this would be a use at a time and at a place that  
25 normally there hasn't been.

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1 MS. NEUMAN: HCCP, Safe Harbor Agreements?

2 MR. WARD: I asked for that. I think that could be a  
3 net positive. But where it may have some negatives is the  
4 ability for the agencies to actually implement that. And  
5 it's my understanding that, for instance, Safe Harbor is not  
6 a -- it's something for -- for a net -- it's listed as  
7 anadromous fish. Is that correct?

8 MR. OPPENHEIM: We don't do Safe Harbor. Fish &  
9 Wildlife does.

10 MR. WARD: Right.

11 MR. OPPENHEIM: So were you thinking of their actions  
12 that might affect -- or -- were you thinking of something  
13 similar in the upper Sac to that program?

14 MR. WARD: That is -- that is (unintelligible) we  
15 have, an HCCP with a Safe Harbor Authority for that area  
16 along the river which would include any activities because it  
17 would be covered under both of those.

18 MR. OPPENHEIM: Sounds real positive to me.

19 MR. WARD: Well, I think it could be if it, in fact,  
20 could be implemented. But if, in fact, under NOAA  
21 regulations you can't implement a safe harbor --

22 MR. OPPENHEIM: No, but we can do the HCCP. That's  
23 part of it. There would be positive benefits to that.

24 MS. NEUMAN: Bay-Delta Conservation Program?

25 MR. MICHNY: I think it's similar. That would

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1 actually be positive because if you're doing an HCCP of a  
2 listed species, it can't by definition be negative.

3 MS. NEUMAN: Unscreened diversions? Don't know,  
4 probably. Depends on their size.

5 MR. URKOV: Should we talk about that a little bit  
6 more?

7 MS. NEUMAN: No, no. We're done. Probably don't  
8 know, but depends on their size. It may depend on their  
9 size.

10 MR. URKOV: Location, location, location.

11 MS. NEUMAN: Location and volume.

12 MR. WARD: And timing.

13 MR. NEPSTED: Just to go back to look at that --  
14 on -- on harbor and dredging activities, wouldn't that be a  
15 negative? I'm not sure you -- other than if you were maybe  
16 removing some -- some blockage. In the Feather River, I  
17 would think any dredging or stuff you're doing would be  
18 detrimental to the fish.

19 MS. NEUMAN: I don't -- in terms of re-suspending  
20 contaminated sediment and things like that, I don't know what  
21 kinds of affects those -- those things would have.

22 MR. NEPSTED: Well, I was thinking just the suction  
23 dredge actually sucking the sturgeon right off the bottom,  
24 which is what happens in the Columbia, I guess, when they  
25 dredge out there. They just stick --

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1 MS. NEUMAN: So it would be a negative -- some  
2 negatives and some "don't knows" associated with that.

3 Feasibility study for raising Shasta Dam.

4 MR. NEPSTED: I mentioned that one. But that's more  
5 or less -- I mean if -- if we haven't actually fully  
6 determined what we would use there because we haven't gotten  
7 that far, but presumably we still have to operate the dam, so  
8 we need all the existing flows (unintelligible). So I would  
9 think if we finally have not merely any negative impact but  
10 there might be a potential positive if we were actually to  
11 get more water in the dam or greater cold water storage and  
12 things like that. So...

13 MS. NEUMAN: Provisions using existing BOs. I guess  
14 this is primarily for salmonids? Is that, for the person who  
15 mentioned this, what they were getting at, or was it for  
16 other species as well?

17 UNIDENTIFIED SPEAKER: I suggested that  
18 (unintelligible).

19 (Multiple speakers.)

20 (Inaudible audience discussion.)

21 MS. NEUMAN: Trinity Restoration Flows Program?

22 UNIDENTIFIED SPEAKER: The ICDs are mainly there  
23 (unintelligible). You're increasing the flows of the Trinity  
24 River, that would help out the Northern Population. You're  
25 restoring the banks. You're increasing the flood plane. All

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1 that's good for salmon, but it's probably changing it for  
2 sturgeon there.

3 UNIDENTIFIED SPEAKER: I think his focus was not on  
4 the current -- the ramifications --

5 (Multiple speakers.)

6 UNIDENTIFIED SPEAKER: There was no flow device in  
7 the Sacramento River from the Trinity. It was all  
8 artificial.

9 (Multiple speakers.)

10 UNIDENTIFIED SPEAKER: If I could jump back again.

11 (Multiple speakers.)

12 UNIDENTIFIED SPEAKER: Most of the Biological

13 Opinions that people get have work windows in them, either  
14 for salmon or Delta smelt or both. And I think those may  
15 not -- may or may not be protective for green sturgeon. So  
16 that's something to consider.

17 MR. SMITH: LOP -- Limited Operating Period.

18 MS. WANG: What was that?

19 MR. SMITH: LOP --

20 MS. NEUMAN: Limited Operating Period.

21 MR. SMITH: Yeah, for salmon may not benefit  
22 sturgeon.

23 MR. OPPENHEIM: Yeah, that actually came up yesterday  
24 on the section on Bay-Delta dredging and harbor impacts.

25

MS. NEUMAN: Right. Ellen Johnck was here talking

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1 about how the concept of work windows is --

2 MR. OPPENHEIM: Paramount.

3 MS. NEUMAN: -- being lost from her vocabulary.

4 Mitigation for Iron Mountain Mine.

5 MR. BIRK: Good.

6 MS. NEUMAN: Small dam removal in tributaries?

7 MR. NEPSTED: Oh, that was me. I was going say  
8 something on the mine.

9 MS. NEUMAN: Okay.

10 MR. NEPSTED: Reclamation -- since we just spent 2  
11 and a half million dollars on this, I can probably mention  
12 it. Reclamation just finished the cleanup of the Matheson  
13 (unintelligible) Transfer Station, which was part of the Iron  
14 Mountain Mine, and this was the component that was on our  
15 property where the mine drainage -- or the acid mine sledge,  
16 or whatever it was, was going straight into the river. And  
17 so that's a big cleanup effort that's preventing the acid  
18 mine pollution from coming into the Sacramento River.

19 MS. LUCAS-WILLIAMS: (Unintelligible.)

20 (Inaudible audience discussion.)

21 MS. NEUMAN: Small dam removal in tributaries.

22 MR. WARD: That was Serge's, but I think that might  
23 be an unknown. Would you agree?

24 MR. BIRK: Put a question mark there. A maybe?

25 MS. NEUMAN: Question mark.

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1 MR. SMITH: Got any examples, Serge?

2 MR. BIRK: I've got a couple, but I don't know if any  
3 of them apply. Let's stick with the question mark. But like  
4 I said, when we started this this morning, we had a lot of  
5 red dots in some these side tributaries, and dams were part  
6 of the problem. So by removing some of them -- I don't  
7 know --

8 (Multiple speakers.)

9 MS. NEUMAN: Herbicide spraying programs.

10 MR. OPPENHEIM: I would assume it's unknown until we  
11 get some data on the affect on the current program on the  
12 fish in Clifton Forebay or -- I mean we're still trying to  
13 get data on steelhead for that program. And sturgeon is just  
14 another one that we have to add to the list.

15 MR. NEPSTED: Just to add to that, the State  
16 Department of Boating and Waterways is also spraying the  
17 Delta for water hyacinth and (unintelligible).

18 MR. OPPENHEIM: That was mentioned yesterday.

19 MR. NEPSTED: You covered that yesterday? Okay. All  
20 right. So I guess I won't say anything more.

21 MR. MICHNY: Well, wait a minute. Bruce made a  
22 comment, and I know this is something that had already been  
23 said, but the person who brought up the Trinity River -- I  
24 forget who it was, but it was completely a different bent. I  
25 just want to say it just so you're aware. Your bent was that

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1 a couple years ago Bruce Babbot signed a record recission.  
2 The Trinity Project took water off the Trinity River for a  
3 number of years and put it in the Sacramento side, so you had  
4 more water in the Sacramento side. What the Trinity decision  
5 did is it stopped that to a large extent and kept that water  
6 in the Trinity River. So some people are saying that was bad  
7 for the Sacramento River because now you have less  
8 flexibility and less water on the Sacramento side because now  
9 it's all over on the Trinity. I'm not arguing morality here  
10 or nothing like that. I'm just saying that you're aware that  
11 you write this up --

12 (Multiple speakers.)

13 MR. MICHNY: -- (unintelligible) positive thing and  
14 the other side was a negative thing because you're taking the  
15 water out of the system. Just so you're aware of that  
16 argument.

17 MS. LUCAS-WILLIAMS: Well, it falls more to the  
18 Trinity Restoration. What the Restoration Program does is it  
19 sends a bunch of water down in the spring which some people  
20 would see as you're losing all your cold water pool going  
21 (unintelligible) so you don't have a cold water pool to  
22 manage like you do on other rivers that we're managing within  
23 the system. So I don't know if that's a good thing or a bad  
24 thing, but it's a restoration program for geomorphic reasons  
25 that they send down the river instead of like we do on the

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1 Sacramento side where we manage a cold water pool to help the  
2 listed species in the river.

3 MR. HOLT: Sending it down in the spring, you also  
4 avoid fall -- traction in the fall of getting  
5 (unintelligible) in the Trinity which has been a concern the  
6 last couple of years.

7 MS. NEUMAN: State and federal fish salvage research  
8 and development. People view the salvage part of this as  
9 being a positive. Probably the research and development part  
10 of it are positive. I don't know. Let me hear from you.

11 MR. SMITH: Better than no salvage.

12 MS. NEUMAN: Right.

13 Okay. Flood control bypass operations?

14 MR. OPPENHEIM: That's the weir that we were talking  
15 about earlier as having a negative affect because you're  
16 isolating and stranding and killing sturgeon. I think Jeff  
17 tried to bring up the positive point that there may be some  
18 beneficial affects to juvenile green sturgeon, and he  
19 compared them to salmonids in that maybe they may grow up in  
20 the bypass to a larger extent or have a higher survival rate  
21 if they did get to the bypass. But that's kind of unknown.

22 MS. NEUMAN: VAMP?

23 MR. ISRAEL: I think it's sort of unknown because I'm  
24 not sure we know enough about the habitat requirements with  
25 regards to the water. We know the salinity and things like

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1 that, but I think that's what the dam's about is  
2 (unintelligible).

3 (Multiple speakers.)

4 MR. CADRETT: Yeah, that might hold true, not much  
5 affect, but there are green sturgeon in the San Joaquin. So  
6 it might have an affect on Delta conditions.

7 (Multiple speakers.)

8 MS. NEUMAN: Refuge program?

9 MR. ISRAEL: Wasn't someone talking about the re-flow  
10 water out of the refuges?

11 MR. BIRK: Well, it's not the use, basically; it's  
12 part of CVPIA throwing more water on the refuge and some of  
13 it returns to the Sacramento River.

14 MS. LUCAS-WILLIAMS: Some of the water that returns  
15 is good water, but probably more on the Sacramento River is  
16 diluted than on the San Joaquin River.

17 MR. BIRK: That was Frank's. He left.

18 MR. NEPSTED: Yeah, I'm not actually sure why it's  
19 even up there. It's a San Joaquin River problem. I don't  
20 know. But the Sacramento River --

21 (Multiple speakers.)

22 MS. NEUMAN: Okay.

23 MS. LUCAS-WILLIAMS: Most of the federal people are  
24 (unintelligible) contracts, so I don't know who was getting  
25 it (unintelligible).

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1 MS. NEUMAN: Non-federalization of water systems?

2 MR. NEPSTED: That was Frank's, too, I think, wasn't  
3 it?

4 (Multiple speakers.)

5 MS. NEUMAN: Okay. Feather River water rights.

6 MS. LUCAS-WILLIAMS: It's seen as water rights to  
7 divert water.

8 MR. WARD: Well, that's a qualified yes, because even  
9 within the Central Valley Project contracts, there are still  
10 pre-1914 rights that are not really regulated very closely --  
11 not lots of them, but they are there.

12 MS. LUCAS-WILLIAMS: Exactly.

13 MS. NEUMAN: Okay.

14 MR. HOLT: I think it depends on how much water.  
15 You're referring (unintelligible) contract. That water  
16 (unintelligible) water rights probably not regulated  
17 anyway -- at least not too strongly. (Unintelligible)  
18 because they have a component on this water to make it part  
19 of the water (unintelligible).

20 MR. WARD: But there are people that don't have CVP  
21 contracts, though, Buford, in that area. (Unintelligible)  
22 Seco Ranch is one. They are a pre-1914 water right holder,  
23 so there is no federal nexus.

24 (Inaudible audience discussion.)

25 MR. HOLT: It's something the state can take care of.

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1           MR. WARD: Well, I'm not even sure the state takes  
2 care of it, really.

3           MR. HOLT: They should, but...

4           MR. BIRK: Paul, you said this was a good place for  
5 the 4(d) rule to apply?

6           MS. NEUMAN: Groundwater pumping, conjunctive use.

7           MR. BIRK: I brought that one up. That could be a  
8 good thing if you think you want to keep more water in the  
9 stream.

10          MS. NEUMAN: OCAP consultations for green sturgeon.

11          MR. BIRK: I also brought that one up. I think it  
12 has to be mentioned. I don't know if it's good or bad. You  
13 can't overlook it. Hopefully a bunch of this stuff's going  
14 to be covered under that.

15          MS. NEUMAN: Agricultural return of water.

16          (Inaudible audience discussion.)

17          MS. HINOJOSA: It increases the salinity  
18 (unintelligible) contaminant possibly, but whether this is  
19 something sturgeon tolerate -- I mean I honestly don't know.

20          MS. NEUMAN: It's probably a question mark. It might  
21 be a question mark in terms of -- I mean that  
22 (unintelligible) carry enough water back to the system.

23          MR. BOYTRESS: Plus the warmer water potentially.

24          (Inaudible audience discussion.)

25          MR. URKOV: The OCAP consultation for green sturgeon

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1 has got to be positive. It can't be an unknown. Sorry.

2 (Multiple speakers.)

3 MR. NEPSTED: I would think the agricultural return  
4 water is more of an issue for the sturgeon in the Delta where  
5 there's more water going --

6 (Multiple speakers.)

7 MR. NEPSTED: I can't imagine there's too much of an  
8 issue in the Sacramento River.

9 MR. SMITH: It is down further, but, you know --

10 (Multiple speakers.)

11 MR. NEPSTED: If I could go back to the groundwater  
12 pumping (unintelligible). It is generally positive, but it  
13 is -- I would agree that it looks like for some of it that --  
14 you know, what you do is you pump water out of the ground to  
15 make up for diversions, and then at some later point you  
16 divert water to make up for that -- you know, and then refill  
17 the groundwater aquifer. And it's not a one-to-one exchange.  
18 And so you do actually use more surface water to make up for  
19 groundwater. So there is some possible potential for  
20 affecting how much water we have in our storage in our  
21 reservoirs depending on how much conjunctive use you do.  
22 Because we basically have to release more water to keep the  
23 same amount in the river.

24 MS. NEUMAN: Is that SDIP?

25 (Multiple speakers.)

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1 UNIDENTIFIED SPEAKER: South Delta Improvement  
2 Project. That should be probably a negative.

3 MS. HINOJOSA: Well, no. Again, not being a green  
4 sturgeon biologist at all, but part of the aim of that  
5 program is to improve circulation so you actually might get  
6 is to improve circulation, so you actually might get the  
7 benefits to water quality, which has a varying on the  
8 sturgeon, I think.

9 MR. OPPENHEIM: There's no fish passage for green  
10 sturgeon in that. There's no passage in those barriers.

11 MR. VOGEL: It's cold --

12 MR. OPPENHEIM: Well --

13 (Multiple speakers.)

14 MS. HINOJOSA: But there are people (unintelligible),  
15 and they would put them down as (unintelligible).

16 (Multiple speakers.)

17 MR. OPPENHEIM: But that won't pass sturgeon. They  
18 don't swim over gates.

19 MS. HINOJOSA: They go into -- there's something -- I  
20 don't remember what the --

21 (Multiple speakers.)

22 (Inaudible audience discussion.)

23 MR. OPPENHEIM: They don't go flush with the bottom.

24 MR. NEPSTED: Although, wouldn't you say, though,  
25 that when the gates are closed -- I'm just being the devil's

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1 advocate here because I'm not that familiar this program, but  
2 when the gates are closed, the sturgeon on the inside of the  
3 gates are, I guess, trapped next to the export pump, but the  
4 ones on the other side would be protected from the export  
5 pumps.

6 MR. OPPENHEIM: Well, I'm not worried about the  
7 pumps. I'm just worried about them getting passage up and  
8 down the river.

9 MR. NEPSTED: Okay. So it's more of an issue of just  
10 sticking them in the South Delta where there may be  
11 (unintelligible) more rearing habitat.

12 MR. OPPENHEIM: Yeah. Once the gates go up, it turns  
13 that whole area above it into a freshwater lake, basically,  
14 that grows great aquatic weeds, and it changes the whole  
15 dynamic of the river system. It's no longer really habitat  
16 for green sturgeon.

17 MR. NEPSTED: Actually, shouldn't we have had aquatic  
18 weeds (unintelligible)? That's not really -- or was that on  
19 there already because of the spraying program? You guys  
20 covered that yesterday or --

21 MR. OPPENHEIM: You could actually put this whole  
22 program into the same category as the OCAP because there is  
23 in the EIS/EIR on it right now. So we'll have to do a  
24 consultation and Biological Opinion on it. So out of that,  
25 if you -- we can -- out of that process, you would think it

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1 would be a beneficial opinion for -- maybe not --

2 MR. NEPSTED: Well, because I mean the point of at  
3 least one of those four barriers is to keep fish away from  
4 the export facilities.

5 MR. SMITH: Which fish?

6 (Multiple speakers.)

7 MR. SMITH: San Joaquin fish?

8 MR. OPPENHEIM: Yeah, that's to keep the juveniles --

9 MR. SMITH: You get more Sacramento water --

10 (Multiple speakers.)

11 MR. SMITH: I mean you get more Sacramento River  
12 fish --

13 (Multiple speakers.)

14 MR. SMITH: There could be sturgeon.

15 MS. NEUMAN: Conversion measures by user groups.

16 MR. CADRETT: Seems like a positive.

17 (Multiple speakers.)

18 MS. NEUMAN: Consolidating diversions.

19 MR. BIRK: Good.

20 MR. WARD: I think that can be both positive and  
21 negative because by consolidating you create a much bigger  
22 diversion in some cases, which could be a negative for the  
23 reasons we've talked about. So by very small ones, in some  
24 cases that we talked about, there may not even be a need to  
25 be screened.

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1 MR. BIRK: Paul, I was only talking about the good  
2 ones.

3 MR. WARD: I know. But that's why --  
4 (Multiple speakers.)

5 MS. NEUMAN: Four Pumps Mitigation Program?

6 MR. McLAIN: There are some positives.  
7 (Multiple speakers.)

8 MR. McLAIN: Well, they restore habitat.

9 MR. NEPSTED: They did fund ten game wardens through  
10 the Four Pumps.

11 MR. OPPENHEIM: Right. They fund the -- they fund  
12 some of the dam restoration work on Butte Creek.

13 MR. WARD: That should also include the Tracy  
14 Mitigation fund.

15 MR. NEPSTED: That was a separate program, the Tracy  
16 Fish Facilities Direct Loss Mitigation Project. I think it's  
17 not.

18 MR. OPPENHEIM: That agreement was not in place.

19 MR. NEPSTED: In place anymore. But back when --  
20 they did construct a couple of fish screens in the Suisun,  
21 and they did also fund the DD, which was the Fish & Game  
22 warden.

23 MS. NEUMAN: Municipal and industrial effluent.

24 MR. McLAIN: Negative.

25 MR. CADRETT: Negative --

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1 (Multiple speakers.)

2 MR. SMITH: I don't --

3 (Multiple speakers.)

4 MR. SMITH: Beneath water quality standards, at least  
5 under (unintelligible), is that necessarily a negative thing?

6 MR. McLAIN: Well, I just think with all the  
7 information we have on toxicity affects on aquatic organisms,  
8 it's a pretty big deal. There's a limited amount of  
9 information on sturgeon. There's the selenium that fell in a  
10 (unintelligible) habitat that had really high levels of  
11 selenium.

12 MR. SMITH: Where is that coming from?

13 MR. McLAIN: Well, the San Joaquin Basin and-

14 (Multiple speakers.)

15 MR. SMITH: I mean it just doesn't usually come up as  
16 a -- I mean as a -- is it not known when it comes up like  
17 this, or is it an absolute negative right off the bat? I  
18 don't think --

19 MR. McLAIN: It's not a positive.

20 MR. SMITH: No. I didn't say it was positive. I  
21 guess in light of no treatment, but...

22 MR. ISRAEL: Certainly because the green sturgeon  
23 are, you know, long lived, there is a higher likelihood of  
24 (unintelligible) being a problem and could affect, you know,  
25 their fitness, their reproduction, their (unintelligible).

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1 There's all kinds of biological things. But really it hasn't  
2 been studied that much, you know, so it's hard to know --

3 (Multiple speakers.)

4 MR. ISRAEL: -- (unintelligible) standards are  
5 stringent enough for something that is going to be living out  
6 there in estuaries for 10 or 15 years before they decide  
7 they're going to develop 100,000 eggs in their belly.

8 (Multiple speakers.)

9 MS. NEUMAN: Natural Fish & Wildlife -- wait --  
10 natural Fish & Wildlife SDN activities with NMFS. This is  
11 the habitat restoration stuff. I think, again, the  
12 Restoration Programs, it seems like there may be some  
13 positives but also some negatives.

14 MR. ISRAEL: This will be interesting to look at  
15 because the NOAA Restoration Centers community-based grant  
16 programs -- which they're not allowed to directly fund, but  
17 there was some congressional money (unintelligible) where  
18 they weren't directly funding salmonid-specific work. But I  
19 know that there was a lot of interest in the restoration  
20 centers to continue funding the work around anadromous fish  
21 (unintelligible). And there's been some discussions about  
22 trying to -- yesterday about trying to get volunteers more  
23 involved in regards to like fishing and -- you know, trying  
24 to eliminate poaching and things like that. This might be  
25 one, you know, where you found the National Fish & Wildlife

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1 Foundation who is interested in doing some kind of sturgeon  
2 program through community-based restoration grants, you know.  
3 There might be some interest in it. It's not salmonid  
4 explicit, and they don't -- congress doesn't (unintelligible)  
5 make it salmonid explicit. So...

6 MS. NEUMAN: Drainage flows.

7 MR. SMITH: We already covered that.

8 MR. McLAIN: That was the --

9 (Multiple speakers.)

10 MS. NEUMAN: Refuge --

11 (Multiple speakers.)

12 MS. NEUMAN: So we'll just put "see agricultural  
13 and" --

14 (Multiple speakers.)

15 MS. NEUMAN: California Water Bond? State-funded  
16 activity.

17 MR. URKOV: I thought that was a source of upcoming  
18 projects that might warrant 4(d) consideration.

19 MS. NEUMAN: And mercury contamination at mining  
20 sites. Is somebody working with Joe at UC Davis on mercury?

21 MR. ISRAEL: I don't know.

22 UNIDENTIFIED SPEAKER: Yeah, there is that guy Bob  
23 who's working -- yes, he is doing mercury decontamination  
24 (unintelligible).

25 (Multiple speakers.)

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1           MR. McLAIN:  There's a lot of CalFed work on mercury  
2   that we should maybe look at.

3           MS. NEUMAN:  For white sturgeon or salmonids?

4           MR. McLAIN:  Yes, I just think it's generalized  
5   (unintelligible).

6           MS. NEUMAN:  Okay.  Do you know what the end point  
7   is?

8           MR. McLAIN:  I don't.  I mean I know there's high  
9   levels of mercury in resident fishes in the Delta and that's  
10  why they don't want you to eat more than one a month or  
11  whatever.  So sturgeon are long lived, so I'm assuming that  
12  they're impacted.

13          MR. BIRK:  Monterey Bay Aquarium's got a pretty good  
14  list of those, the outreach data.

15          MS. NEUMAN:  A state list or whatever --

16          MR. BIRK:  Yeah.

17          MR. OPPENHEIM:  There's no restriction on sturgeon in  
18  the Fish & Game regs that I know of for health warnings.  
19  They're on striped bass, large-mouthed bass in the Delta and  
20  in the freshwater streams.  I don't think there's any mention  
21  of sturgeon from --

22                   (Multiple speakers.)

23          MS. NEUMAN:  Okay.  We sort of addressed question  
24  No. 3, anyplace where there's a positive, we've identified  
25  the activities that might contribute to the conservation of

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1 green sturgeon.

2           And now instead of re-visiting the list again and  
3 going through it one by one, I think we should just  
4 brainstorm here and fill up a couple of pages on how some of  
5 the activities and programs that are going on now might be  
6 modified in a way that you see doable to help conserved green  
7 sturgeon. Are there things we can be doing differently that  
8 will help benefit green sturgeon in terms of water resource  
9 use?

10           MR. NEPSTED: Well, I mean certainly the Water  
11 Acquisition Programs that are specifically targeting  
12 something like in-flow needs of a particular -- running of  
13 salmon or steelhead. And so, you know, there's no -- there's  
14 no reason -- if we knew what the needs were for sturgeon,  
15 those programs could certainly buy water for them.

16           MS. WANG: I'm sorry, they -- what?

17           MR. NEPSTED: They could buy water for sturgeon if we  
18 knew we needed it and when.

19           MS. NEUMAN: We only have about another 20 minutes.  
20 Actually -- yeah, another 15 to 20 minutes.

21           MR. McLAIN: What about passage barriers -- upstream  
22 passage barriers, just improving those?

23           MS. NEUMAN: How, by removing the --

24           MR. McLAIN: Removing, modifying --

25           MS. NEUMAN: Creating a bypass --

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1 MR. McLAIN: Yeah, a facility passage.

2 MS. NEUMAN: Okay.

3 MR. WARD: I hate to keep beating on the same horse  
4 here, it seems to me on the fish criteria that we might not  
5 be benefiting green sturgeon in the other list of fish if we  
6 were selective on how we relaxed fish-screen standards for  
7 the purpose that I mentioned.

8 MS. NEUMAN: So you're saying adjusting the  
9 fish-screen standards?

10 MR. WARD: Right.

11 MS. NEUMAN: Okay. Adjusting the salmon criteria for  
12 screens in a way that I guess is -- it's more flexible with  
13 respect to spatial placement and size of screen and other --

14 MR. WARD: Well, in terms of implicating hard  
15 sections or cross-sections, I guess, so that we don't damage  
16 another value.

17 UNIDENTIFIED SPEAKER: Since we're talking about fish  
18 screens, what about specifying loci stages protected, in  
19 other words, you're going to protect larva or not, are we  
20 gonna -- you know, what about fish screens? There may be  
21 some way to -- if we're going to decide we're going to  
22 protect them at 14 millimeters when they, you know -- when  
23 they get to the waterfall, or are we gonna  
24 (unintelligible) --

25 (Multiple speakers.)

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1 MS. NEUMAN: How does that -- how does that relate to  
2 modifying -- how -- how would some of the activities and  
3 programs we've mentioned help any life stage of green  
4 sturgeon?

5 UNIDENTIFIED SPEAKER: Well, I guess I'm just  
6 thinking of in terms of 4(d). We may want to draw a line  
7 somewhere as far as everything -- you know, everything taken  
8 prohibited above a certain size and just limit it at that or  
9 something. So you could modify or you could choose not to  
10 modify things.

11 UNIDENTIFIED SPEAKER: It might be modified, too, you  
12 know, by -- by location. It may not be true in the main part  
13 of the river, but it certainly might be in the central part  
14 of the valley.

15 (Multiple speakers.)

16 UNIDENTIFIED SPEAKER: And that's what I was thinking  
17 about. The thing about the Delta smelts situation, is it  
18 practical to screen 14-millimeter fish?

19 UNIDENTIFIED SPEAKER: You know, I'd call that review  
20 current fish-screening criteria for salmon for applicability  
21 for sturgeon and establish new criteria if necessary.

22 UNIDENTIFIED SPEAKER: For sturgeon or for salmon?

23 (Multiple speakers.)

24 UNIDENTIFIED SPEAKER: Paul's got a wealth of  
25 information on that.

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1 MS. NEUMAN: I mean I think that overlaps could work  
2 in the previous --

3 UNIDENTIFIED SPEAKER: Paul's is a little different  
4 in that he's talking about, you know, relaxing some salmon  
5 criteria so you don't (unintelligible). That's what he was  
6 talking about.

7 MS. NEUMAN: Uh-huh.

8 UNIDENTIFIED SPEAKER: What I was suggesting here --  
9 what I started hearing beating around the bush is actually  
10 look at the screening criteria we have, especially in terms  
11 of approach velocities and screening size to see if there  
12 actually -- because you're still gonna have GCID nets.  
13 You're still gonna have some big screening projects out there  
14 at the Red Bluff Diversion Dam that you need to consider. So  
15 that's a little different than Paul's.

16 MS. NEUMAN: So there should be a self-evaluation of  
17 our own salmon --

18 UNIDENTIFIED SPEAKER: And Fish & Game's screening  
19 criteria for salmon and steelhead.

20 UNIDENTIFIED SPEAKER: Along that same vein, you  
21 might want to (unintelligible) --

22 (Multiple speakers.)

23 (Inaudible audience discussion.)

24 MS. NEUMAN: How about spending some money on  
25 monitoring the effectiveness of conservation measures that

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1 are already in place -- with NMFS' help?

2 MR. NEPSTED: Well, not to be facetious, I think you  
3 guys already determined that all those conservation measures  
4 are inadequate anyway.

5 MS. NEUMAN: They're not inadequate; we just didn't  
6 know whether they were effective and being directed at the  
7 sturgeon because we live in such a salmon-centric world.

8 MR. WARD: I have a suggestion. If I could get Dave  
9 down here to chime in because he's doing the work. But with  
10 the conservation measure that's in place and then maybe the  
11 hard -- some of the things we've said about the fish screen  
12 and, you know, the hard processing, he's doing some really  
13 formative research on adult and juveniles -- primarily adult  
14 sturgeon but also larval and juvenile sturgeon on passage of  
15 barriers and the affects of the fish screens, and all of that  
16 is pertinent. So, you know, if you want to put some money  
17 somewhere, there's a good place to do it. I don't know how  
18 many of you tag, but if you tag 40 or 50 so far, adult  
19 greens -- or, again, greens and whites?

20 MS. SEEHOLTZ: So when you're saying "conservation  
21 efforts," you're talking about screening, and that sort of  
22 thing? Because baseline -- we really don't have enough  
23 baseline information to determine if conservation is working  
24 because we don't even know what's the process. So are you  
25 talking about the screening that sort of thing, or are you

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1 talking about conservation efforts?

2 MS. NEUMAN: I'm basically talking about any of those  
3 protective measures that we considered. So pretty much any  
4 program funded by CalFed or CVPIA. I mean the whole host of  
5 things that they have funded. You know, it doesn't seem like  
6 there's been the money to follow through --

7 MS. SEEHOLTZ: Uh-huh.

8 MS. NEUMAN: -- on determining whether those measures  
9 have really been effective, whether the aim of the measure --  
10 what was the goal and did the conservation measures meet that  
11 goal?

12 MR. NEPSTED: Certainly a sturgeon-specific sampling  
13 program would be useful because really the only time we catch  
14 sturgeon is at the bycatch when we're sitting in the river  
15 for something else.

16 MS. NEUMAN: Well, the California Department of Fish  
17 & Game is actually thinking about implementing a directive  
18 Green Sturgeon Monitoring Program. And probably within the  
19 next year or so we'll have more information on whether that  
20 program will take off. NMFS is currently tracking and  
21 monitoring adults in their use of estuaries in coastal areas.  
22 But we -- we lack an in-river monitoring program, that is, we  
23 haven't -- you know, we have not implemented one nor have we  
24 supported an in-river monitoring program of green sturgeon.

25 MR. SMITH: I will say our Red Bluff Diversion Dam,

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1 our Juvenile Monitoring Program has a secondary objective of  
2 monitoring sturgeon. We have that part -- not the salmon  
3 (unintelligible).

4 MR. WARD: And I'd like to amplify just a little bit  
5 on what Dave is doing, because the issue is the hard  
6 cross-section which we're not real pleased about having to  
7 put any in. But the issue was, by creating a barrier or a  
8 head difference to drive the fish screen was whether it was a  
9 barrier to adult (unintelligible) migrations, specifically,  
10 that was the objective to this study. And Dave's evaluation  
11 is, in fact, tagging both white and green sturgeon and  
12 tracking through that grade differentiation, which is  
13 specific to actually several of the questions that have been  
14 raised here about what a hydraulic jump or a waterfall or a  
15 velocity would be detrimental to sturgeon passage.

16 And the other piece of that --

17 I think, Dave, you need to chime in here with me.

18 (Multiple speakers.)

19 MR. WARD: The other piece of that is that to the  
20 4(d) or Section 7 or consultation is -- his study could end  
21 July 7th unless we have some sort of expedited permitting to  
22 keep him going. And he's got fish with tags on them, I  
23 suppose, right now.

24 So this has been really valuable to the department  
25 for one thing, but it should be valuable to this thing.

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1 MS. NEUMAN: Uh-huh.

2 MR. WARD: I'll send you my bill, Dave.

3 MS. NEUMAN: Other ways to modify activities or  
4 programs to minimize the affects of these activities --  
5 negative affects of these activities on green sturgeon?

6 I guess, you know, I just turned that question around  
7 and turned it into how can we modify activities or programs  
8 so that they provide some kind of benefit to green sturgeon.  
9 I think I just turned that question around. I don't know  
10 whether that's the same question.

11 MS. WANG: I guess kind of like for those who are  
12 working with the water like for irrigation districts or for  
13 more specific fish passage work, what kinds of things that  
14 would be reasonable to do that we could like include in the  
15 4(d) rule that would provide passage for green sturgeon but  
16 also allow the operations to continue and result -- you know,  
17 in a reasonable manner. Like what are some things that could  
18 be implemented, I guess.

19 MR. CADRETT: It seems to me like the answers to a  
20 lot of these questions, we need to know more about the life  
21 history before we even say this is what we need to do to  
22 operate with more fish (unintelligible). So I don't know, to  
23 me it's tough to say that -- to make a -- you know, an  
24 upstream passage barrier that's more sturgeon friendly. It's  
25 hard to say, well, operate it this way or change the

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1 operations or put it in a fish -- this kind of fish ladder  
2 when we don't know if that's going to have an affect or when  
3 the juveniles are coming downstream. I don't know how you  
4 answer those questions without knowing the life history about  
5 the fish.

6 MS. NEUMAN: We do know that sturgeon are spawning  
7 between the Glenn-Colusa Irrigation District and up -- we're  
8 not exactly sure (unintelligible) still going to be up  
9 past --

10 MR. SMITH: Somewhere up above Red Bluff.

11 MS. NEUMAN: Somewhere up above Red Bluff. Somebody  
12 mentioned (unintelligible) yesterday.

13 MR. SMITH: We don't know.

14 MS. NEUMAN: What?

15 (Multiple speakers.)

16 MS. NEUMAN: Is it all the way up to Keswick?

17 MR. SMITH: We don't know.

18 (Multiple speakers.)

19 MS. NEUMAN: So maybe we should be focusing in on  
20 that area and specifically focusing in on ways to modify  
21 things that are going on in that area so that adults can pass  
22 up and down and so can juveniles and larvae.

23 MR. NEPSTED: Well, to give you an example of the  
24 person next to Alicia's comment --

25 MR. CADRETT: Paul.

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1           MR. NEPSTED: You know, green sturgeon, I guess, are  
2 more active at night than they are during the day. And so if  
3 someone were to do some studies that show by day they're hold  
4 up in the deep cobble and at night they start to move down  
5 the river, then that would probably mean that they're more  
6 vulnerable to being entrained in an unscreened diversion  
7 operating at night than in the day when some of these small  
8 unscreened diversions could limit their operations for the  
9 daytime. But we'd have to know that. I mean we don't -- you  
10 know, it wouldn't make any sense to impose that now because  
11 we wouldn't know if it would do any good or not.

12           MR. CADRETT: It might do more harm than good.

13           MR. NEPSTED: Right. I mean that could be a --  
14 potentially a low-cost solution to probably hundreds of these  
15 diversions since they just don't pump at night, if that would  
16 do any good.

17           MS. NEUMAN: If we do have some information from the  
18 folks at UC Davis that would confirm that type of behavior on  
19 green sturgeon --

20           MR. NEPSTED: Well, everything I've read, yeah. But  
21 I mean how inactive in the day they are would be the  
22 question, if they're safe from a diversion (unintelligible)  
23 or if they're somewhat vulnerable or not.

24           MS. NEUMAN: Okay.

25           MR. NEPSTED: Then I wouldn't know if the diversions

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1 still work (unintelligible). I'm sure that would be another  
2 question for you.

3 MS. NEUMAN: None of the answers here provide -- do  
4 they provide us with the tools we need to create the  
5 exemption, but we're thinking of creating a 4(d) rule. So...

6 UNIDENTIFIED SPEAKER: Since I'm the only one  
7 talking, I guess I'll do it. There are non-structural  
8 concepts of ways to keep fish out of diversions. And I know  
9 they've been tested: Acoustical barriers and bubble  
10 curtains, and things like that, but I don't know if any of  
11 them have actually been tested on sturgeon. And so that  
12 might be something for somebody to look at.

13 MS. NEUMAN: Have they been tested for salmonids?

14 MR. NEPSTED: I think they have, but they didn't  
15 perform too well. But, you know, if they're already  
16 unscreened and nobody's done an effort for salmonids -- I  
17 mean it's not -- but it might at least be something to think  
18 about for the small diverters in the immediate vicinity where  
19 the sturgeon are spawning, then that could be a vast and  
20 inexpensive thing to do rather than a five- to ten-year  
21 planning -- or project.

22 MR. HOLT: Of course, there's always what Dave is  
23 doing, trying to get CalFed to look at a bubble curtain. The  
24 idea being that you simulate a moving curtain, which is --  
25 all the ones you're using, the curtains are fixed in place.

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1 He was using them for the fact that we know that in the Gulf  
2 of Alaska, the whales were able to herd fish into bubble  
3 curtains to their advantage. And so the question is whether  
4 it can work, and the answer is yes, it can in some fish, some  
5 places. The question is if you had a moving curtain versus a  
6 simulated moving curtain and having multiple (unintelligible)  
7 you could control it with some sort of a computer, the air  
8 emissions -- you know, Mike, in the lab he found some fish  
9 were attracted and some were repelled. So maybe there's some  
10 options there (unintelligible).

11 MS. NEUMAN: Okay. Well, I think we've answered many  
12 of the aspects of Question No. 5 in answering some of these  
13 other questions. And our time is up here today. I hope  
14 everybody got something out of today's workshop. I don't  
15 know whether we feel there's a need for future workshops. It  
16 sounds like Serge felt that there was a need for workshops  
17 that focused on folks actually diverting water, getting them  
18 together in a forum to discuss this -- to discuss issues  
19 regarding the 4(d) rule and perhaps Section.

20 I think we have one major unanswered question, and  
21 that is for projects where there's a federal nexus, what  
22 covers what? Does the Section 7 process trump the 4(d)  
23 program? Can projects with federal nexus be rolled into a  
24 4(d) research program or not? So we're going to have to get  
25 back to you on this. We're probably going to take a look at

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1 those research projects that are currently in the 4(d)  
2 Anadromous Research Program and figure out what it was about  
3 those research projects that made them acceptable projects  
4 for that program. And in that case, they stepped over the  
5 Section 7 process, basically, or side-stepped it. So we'll  
6 have to figure that out.

7 We'd appreciate feedback from all of you on whether  
8 you feel that this workshop was useful; whether there is a  
9 need for conducting future workshops; who, again, the people  
10 that we should be focusing in on are; and perhaps most  
11 important at this point for us to take this information and  
12 to boil it down and get it back to all of you because we'd  
13 appreciate any review of this information once we condense  
14 it, and perhaps in another setting you can provide some more  
15 feedback to us.

16 Any final comments?

17 MR. WARD: I have one final request. I guess it's --  
18 I have at least four projects that are -- that are being  
19 built right now or modified right now that are going to be  
20 impacted by this. And Howard Brown has been the contact,  
21 presumably may still be. But I think it would be real  
22 helpful to have a consistent message from NOAA via whether it  
23 be Howard or whoever because we have federal funding that is  
24 dependent upon having permits in place, and this is kind of a  
25 new wrinkle in this, that could either make the funding go

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1 away or delay it or add a lot of additional costs. So I  
2 think it would be helpful to maybe prioritize some of these  
3 projects that have to have immediate need and then have a  
4 contact and a specific person and voice to address those. We  
5 have at least three fish-screen projects that are 8 or \$9  
6 million apiece that could be put off and have costs go very  
7 high if we don't have an answer.

8 MS. NEUMAN: Your point of contact for all of those  
9 projects in the past has been Howard?

10 MR. WARD: Yes. Or Mike Tucker, I guess would be the  
11 other one.

12 MS. NEUMAN: Then it should be those folks in the  
13 future.

14 MR. WARD: Okay.

15 MR. VOGEL: I just talked to him about two hours ago.  
16 He's now going to be working on the levee emergency. So he's  
17 not going to be working on this anymore at least for the time  
18 being.

19 MR. URKOV: Are you talking about Mike Tucker or  
20 Howard?

21 MR. VOGEL: Howard.

22 MS. NEUMAN: Okay. Well, we'll have to talk to Mike  
23 Acetuno, who is the Assistant Regional Administrator for  
24 Protected Resources here in Sacramento and find out who's  
25 going to be picking up this work for Mike Tucker.

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1 MS. SEEHOLTZ: I don't know if this will help at all,  
2 but I put in a call just trying to ask a question, and within  
3 a very short period of time I had three people contact me  
4 just to try to get some answers. So they're good at trying  
5 to get back to you. (Unintelligible.)

6 (Multiple speakers.)

7 MS. NEUMAN: You contacted the Sacramento office?

8 MS. SEEHOLTZ: I talked to the local office, and she  
9 ended up contacting other people, and they called me.

10 MR. WARD: We have contacts, but the contacts have  
11 work loads are always heavy.

12 (Multiple speakers.)

13 MR. WARD: This is going to require direction based  
14 upon this program, and somebody to write it out.

15 MS. NEUMAN: Right. But you know our time line is a  
16 year and a half to two years from now.

17 MR. WARD: We have four fish-screen projects right  
18 now that either construction -- we'll start construction in  
19 the summer that have not considered the green sturgeon, but  
20 are federally funded.

21 MS. NEUMAN: It sounds like these are Section 7  
22 issues. That's what it's sounding like to me. And this is  
23 something that is apart and separate from the 4(d) rule.

24 MR. WARD: Right. I agree.

25 MS. NEUMAN: If the person who was handling your

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1 Section 7 consultations is no longer going to be handling  
2 them, it seems like he should know who is going to be. And  
3 if he doesn't, then his supervisor should. So contact Mike  
4 Acetuno, the Director.

5 MR. WARD: Okay. We'll do that. Again, I think it's  
6 going to depend upon you guys who would be implementing the  
7 program that all of you folks should have a heads-up with the  
8 contact person. (Unintelligible.) You can't just pass this  
9 back and forth within the staffers and (unintelligible). And  
10 that's a real frustration (unintelligible).

11 (Multiple speakers.)

12 MR. NEPSTED: Melissa, I know we didn't  
13 (unintelligible) or anything, but it would be helpful at  
14 least for me to know who you are at NMFS. Are you in like  
15 the listing branch?

16 MS. NEUMAN: Susan and I, we're within the Protected  
17 Resources Division in the Long Beach Regional Office. And  
18 that is the Headquarters Regional Office for the Southwest.  
19 So our office speaks to all the area offices, which includes  
20 Sacramento, Santa Rosa, and Arcadia. And I do Biological  
21 Opinions but I do them for abalone. And I probably will not  
22 be doing the Biological Opinions for green sturgeon, although  
23 I may be helping in reviewing of them.

24 (The hearing was concluded at 5:00 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 215 pages comprise a  
transcription of the proceedings had at the hearing in the  
hereinbefore-entitled matter.

Dated this 7th day of July, 2006, at Sacramento,  
California.

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SANDRA L. HOPPER, CSR NO. 7110

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