STATE WATER RESOURCES CONTROL BOARD

PUBLIC HEARING

PHASE 2

TO REVIEW THE UNITED STATES BUREAU OF RECLAMATION WATER RIGHTS PERMITS (APPLICATION 11331 AND 11332) TO DETERMINE WHETHER ANY MODIFICATIONS IN PERMIT TERMS OR CONDITIONS ARE NECESSARY TO PROTECT PUBLIC TRUST VALUES AND DOWNSTREAM WATER RIGHTS ON THE SANTA YNEZ RIVER BELOW BRADBURY DAM (CACHUMA RESERVOIR)

WEDNESDAY, NOVEMBER 12, 2003
10:00 A.M.

JOE SERNA CAL/EPA BUILDING
SIERRA HEARING ROOM
SACRAMENTO, CALIFORNIA

REPORTED BY: ESTHER F. SCHWARTZ
CSR NO. 1564

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SACRAMENTO, CALIFORNIA

WEDNESDAY, NOVEMBER 12, 2003, 10:00 A.M.

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H.O. SILVA: Lets see where we are at. First of all, procedurally, we've gone through the Bureau, Member Agencies, City of Lompoc, Solvang and Fish and Game. We still have NOAA. Hopefully we will get through today, I am hoping. And then we have -- my understanding, the County and the parties have come to an agreement on some of the bigger issues. What I am hoping to do, get through NOAA today and maybe in the afternoon, if we get to it, let the County and parties present their agreement, which then frees up the County as far as presenting their case in chief. So hopefully we will do all that today.

And then -- except for one thing, that NOAA wants to put on Dr. Stacy Li for tomorrow, which is okay. We will get to Dr. Lee first thing in the morning. And then again, hopefully, tomorrow we can do Cal Trout, which will be the last party based on the agreement between the County and the parties, the other parties. I think that is where we are at.

Is everybody in agreement with that?

MS. KRAUS: We had understood that Cal Trout was at least going to start today?

H.O. SILVA: If we can. Depends on the cross.

MS. KRAUS: I understand. One issue is one of our witnesses, Dr. Peter Moyle, is not available tomorrow. If possible if we can just do him.

H.O. SILVA: Okay. Let's try to do that. I'm willing to stay to six today at least, to get all the stuff done. My goal is my son's football is Friday afternoon, and this is his last game. They're two and seven, so I am hoping they win today.

No other comments or questions? We are okay on the process?

First of all, we'll get started with NOAA. I think we need to probably swear in some witnesses that have not been here.

Is that true?

MR. KEIFER: I'm sorry?

H.O. SILVA: Do we need to swear in some witnesses that have not been here up to now? Have all your witnesses been sworn in?

MR. KEIFER: Everybody has been sworn.

H.O. SILVA: I thought you had one that was not.

MR. KEIFER: We have crossed off witnesses that were not going to be here.

H.O. SILVA: Is Mr. Lecky -- did he get sworn in?

MR. LECKY: Yes.

H.O. SILVA: Far out. Okay. Let's do the opening statement and then we will get into your panel.

MR. KEIFER: Good morning. All the parties are participating in this hearing today to assist the Board in determining whether Permits 11308 and 11310 should be modified to public trust resources and, if so, what those modifications should be.

In order to make an informed decision on how best to meet its responsibilities under the California Public Trust Doctrine, it is important for the Board to understand the role of the National Oceanic and Atmospheric Administration -- it is important for the Board to understand the structure and processes of the federal Endangered Species Act and the role of the National Oceanic and Atmospheric Administration in those processes.

The Endangered Species Act provides for the listing of imperiled species and their protection once listed. The ESA has five sections which provide the great body of authority Congress has ordered NOAA to exercise. Section 4 describes the criteria and procedure by which a species is listed and also provides for the recovery planning process.

Through Section 7 of the Congress imposed a

limitation on the authority of all federal agencies by barring them from funding, authorizing or implementing an action which would increase the risk of extinction to a listed species and requires federal agencies to consult with NOAA to ensure that any proposed federal action would not violate that ban.

Section 9 prohibits any person, both legal and natural persons, from harming an endangered species. Section 11 provides for civil and criminal penalties for violations of the act. And Section 10 allows NOAA Fisheries to issue permits under certain conditions and for certain purposes.

In Tennessee Valley Authority v. Hill at 437 U.S. 153, the Seminol 1978 Endangered Species Act case, the Supreme Court described the work of Congress in enacting the ESA, quote, the plan intent of Congress in enacting this statute was to halt and reverse the trend toward extinction. Section 4 listings, Section 9 prohibitions on take and Section 7 consultations are part of halting the trend toward extension. Section 4 recovery plans are part of reversing the trend.

While the Supreme Court has stated of Section 7 that, quote, one would be very hard pressed to find a statutory provision whose terms were any plainer and that its, quote, its language admits of no exceptions, and the

federal judiciary has not said the same of Section 4 for recovery planning.

In fact, the Eleventh Circuit Court of Appeals has held that Section 4, quote, makes it plain that recovery plans are for guidance purposes only. And that with respect to the recovery plans, quote, the ESA breeds discretion at every pore, end quote.

This contradistinction is stark and important to the reasons why NOAA Fisheries is here today. While there is significant overlapping between our responsibility under the federal law and the responsibility of various agencies of the State of California under state law, we believe it is important the Board understand that our respective missions flow from different sources of law. For instance, the Public Trust Doctrine traces its roots back to the institute Justinian. Federal Endangered Species Act and the Commerce Clause of the United States Constitution are of a more recent vintage. Our respective missions are driven by different legal mandates and the success of our respective efforts will be measured by different legal standards.

The Endangered Species Act and the California Public Trust Doctrine are, in our view, not congruent. While the studies we are requesting that the Board mandate will, of course, be helpful to NOAA in meeting its own

responsibilities, we believe that these studies are vital to filling in the gaps in missing scientific knowledge of O.mykiss biology and, therefore, are necessary for the Board to make a fully informed decision on how best to carry out its own duty to protect public trust resources.

NOAA Fisheries calls as its first witness James Lecky.

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DIRECT EXAMINATION OF NOAA FISHERIES

BY MR. KEIFER

MR. KEIFER: Before we get started, Mr. Lecky, is NOAA Exhibit No. 1 your testimony today?

MR. LECKY: Yes.

MR. KEIFER: Do you affirm that your testimony is true and correct?

MR. LECKY: Yes.

Thank you. Morning, Mr. Silva and staff. My name is Jim Lecky, and I am the Assistant Regional Administrator for protected resources for the Southwest Region of National Marine Fisheries Service. In my purview is the responsibility for the region to implement the Endangered Species Act in California and coastal waters and high seas adjacent to our state.

This morning I wanted to review the Section 7 process, talk briefly about the specific Biological

Opinion on the Cachuma Project and introduce the NOAA panel that will be testifying for the rest of the day or maybe even just the morning.

Section 7 is the process in the statute that requires every federal agency to review its actions relative to end and threatened species. There are two key components. The first is Section 7(a)(1) which requires each federal agency to engage and use its authorities to conserve threatened end species. And that is more or less viewed as a voluntary program where efforts rely on things like recovery plans to set their priorities and participate in the recovery.

Section 7(a)(2) is the real interagency consultation process where federal agencies are required to consult with the Secretary of Commerce relative to the species under our jurisdiction in order to evaluate the likelihood of the effect of a particular action on a listed species. And if we find an effect, evaluate whether that rises to the level of jeopardy. And jeopardy is defined as appreciable reducing the likelihood of both survival and recovery of the listed species.

The standard that we use in these consultations is the best scientific and commercial data available, recognizing that with endangered species we often find a fairly limited set of information. Nevertheless, we are

required to make an evaluation of the jeopardy standard with the best standard of information available.

Once consultation is concluded, the Secretary is required to issue a Biological Opinion. That obligation has been delegated down to the Regional Administrator level. The Biological Opinion essentially presents the results of the consultation and the analysis of the jeopardy or no-jeopardy standard. And if we arrive at a jeopardy determination, we are obligated to work with the project proponent to develop a reasonable and prudent alternative that would essentially allow the project to go forward without jeopardizing the species.

If we get to that point, we then develop an incidental take statement. An incidental take statement essentially explains the effects of the project on the species. It quantifies and describes the amount of take that is likely to occur once the jeopardy test has been satisfied, and it concludes terms and conditions. Those terms and conditions are measures to minimize and reduce the amount of take even further below that standard.

Finally, the last piece is conservation recommendations. Conservation recommendations again are just that. They are recommendations to the agency. They are really meant to inform the agency on how better to use its authority for their Section 7(a)(1) obligations to

help with the conservation of the species.

Traditionally, this has been pretty much an interagency process involving two federal agencies and usually is conducted within or under the umbrella of a National Environmental Policy Act process. So there is usually an EIS or something of that nature ongoing. We have over the last several years encouraged federal agencies to open the process up and allow other interests to participate, particularly applicants, contractors, folks that get water from the Bureau, for example. And the Bureau has been very good about that. So we have opened this process up, at least relative to the Cachuma Project. And this consultation we have worked closely with the Bureau and the member agencies, COMB, the fish advisory team and others all participated in the development of the project description.

In the Cachuma opinion we focused on the lower river, not the upper basin. And essentially the reason we did that is in the listing decision we decided that we wouldn't include the upper basin until such time as a thorough evaluation of the status of the stock above the basin, how it related to fish in the lower basin, and we could get some input, evaluation help from our recovery team in providing advice on whether and how we should consider reconnecting those. So we have not included

consideration of the upper basin, per se, in the plan and in the Biological Opinion, although there are recommendations to do those studies and evaluations.

The major components of the Biological Opinion are instream flows, which are designed to provide opportunities for migration from the ocean to the Bradbury Dam, additional flows to provide spawning and rearing habitat in areas of the main stem where fish have been found in the last several years spawning and rearing. There is a fish account established to provide those flows, and the mechanism for managing that is incremental increase in a surcharge over -- from a .75 to 1.8 to finely a three foot surcharge that would provide the water for the fish account flows.

And finally, components out of the Fish Management Plan, habitat restoration in some of the tributary streams have been incorporated as measures in the project description in an effort to mitigate the effects of the project. And based on that project description, we were able to arrive at a nonjeopardy conclusion.

I think it is important to recognize that many of these measures were based on pretty limited information. The flow information for providing migration opportunities, for example, is based on extrapolations of migration rates that have been observed in the Carmel

River. And the flow scenario for managing flows in the descending limb after storms has been based on some modeling of the Bureau's ability to manage flows in that way. So our view is that these assumptions, although they are based on the best available science and, therefore, we think a good analysis in the context of the Biological Opinion, we believe those flows and those assumptions need to be tested through observations and some adaptive management. And that will come up in some of the presentations from the rest of the panel.

So what I would like the Board to understand about the Biological Opinion is that it is based on limited information, it is based on some untested assumptions that we believe need to be verified. It addresses jeopardy standard; it is not a recovery plan. And it focuses only on single pieces, steelhead trout. So it doesn't evaluate interactions between others species within the watershed. Tidewater gobies and frogs and other things of that nature are not really evaluated in that plan. And likewise, the Biological Opinion doesn't do any balancing of public trust obligations. It merely evaluates the jeopardy standard.

So with me today are Craig Wingert who is -- among his duties is our regional recovery coordinator. He oversees our recovering planning process across the state

of California. Mark Capelli, who is our southern, or excuse me, Southern California and South Central California recovery coordinator. He is in charge of overseeing recovery efforts in the Southern California domain that focuses in that domain, and steelhead are the only species listed. So Mark is coordinating that effort. They will testify today on the recovery process and timelines and how that is going and what we expect to get out of that.

Dr. Brian Cluer is a fluvial geomorphologist who will testify on the need to verify some of the flow information and how we might go about looking at how these flows actually maintain the functional river and the importance of maintaining a functional river to the life cycle of steelhead trout in the lower river.

Jonathon Mann is a hydraulic engineer from our engineering staff in Santa Rosa, and he's familiar with fish passage and will be providing testimony on things that need to be considered in designing and developing fish passage in the event that we decide that that is an appropriate measure that needs to take place in the future.

And finally, Stacy Li will be here tomorrow who is an in-stream flow specialist who will be providing some testimony on how we might go about evaluating and looking

at testing the assumptions upon which the flow schedules in the opinion are made.

Now I think I would like to conclude with a recommendation for the Board that the Board include in these orders that provide for the studies that are outlined in the testimony here from the rest of the NOAA panel and establish a schedule for completing these studies, that we have a process to review progress and the results of those studies on a periodic basis of three to five years, and that we maintain flexibility within the order so that we can respond to new information in a timely manner so we don't have to go through the process of petitioning the Board to reopen the order.

Thank you. That concludes my testimony.

MR. KEIFER: NOAA calls as it next witness Craig Wingert.

Is NOAA Exhibit No. 2 your testimony today, Mr. Wingert?

MR. WINGERT: Yes, it is.

MR. KEIFER: Do you affirm that it is true and correct?

MR. WINGERT: Yes, it is.

Thank you, Chris.

Good morning, Mr. Silva and Board staff.

My name is Craig Wingert. I am a supervisory

fisheries biologist with the Southwestern Region of NOAA Fisheries, and as Jim indicated, I am the region's recovery coordinator for salmon and steelhead throughout the state. I am also in charge of overseeing, take the lead for, ESA status reviews, listing determinations, critical habitat designations.

Primarily, I'm going to be talking about the recovery planning process that we intend to go through for Southern California steelhead. Start out with some introductory information.

The Southern California steelhead evolutionarily significance for ESU was listed by NOAA Fisheries in 1997. At the time of the listing we believed that the southern extent of the range of the ESU was Malibu Creek. Based on some new information that we got in 1999 and 2000, we went ahead and extended the range geographically down to the Mexican border in 2002. This was based on information that indicated that steelhead had recolonized San Mateo Creek which is a watershed in northern San Diego County. As a result of this range extension, what we now have is an ESU Southern California steelhead issue which ranges from the Santa Maria River in the north all the way to the Mexican border. Basically what that entails is that all anadromous O.mykisses that occur within that range in any watershed are presently listed as endangered. That

includes the fish that are in the lower Santa Ynez River.

Since 1997, there have been a number of conservation efforts enacted or developed to conserve steelhead. A great deal of that has been through the Section 7 process. An example of that, of course, is the Biological Opinion that was issued to the Bureau for the operations and maintenance of the Cachuma Project. It includes some of the elements of the Fisheries Management Plan as Jim pointed out as well.

Despite the fact that a lot of things have been implemented, they simply aren't being done in a coordinated strategy that is aimed at recovering the ESU as a whole, and more importantly they are not being developed within the context of having biological recovery goals that we are trying to achieve. So the purpose of recovery planning is to provide that framework, basically. We believe that it is important to have a comprehensive recovery plan to achieve recovery for steelhead.

The Endangered Species Act requires that recovery plans developed by NOAA Fisheries contain three basic elements. First objective, measurable delisting criteria. The second, a comprehensive list of actions that are necessary to meet or achieve those criteria, and an estimate of the cost and time required to meet those criteria.

In addition to those, NOAA Fisheries' policy is that we also have in a recovery plan two other elements. One of those is a comprehensive assessment of factors responsible for the decline of the species that are impeding its recovery. And, secondly, that we have a comprehensive monitoring program built into the plan.

In California and elsewhere on the West Coast we have organized the recovery planning effort by geographic areas we call recovery planning domains. Many of those domains have multiple listed ESUs. South Coast of California constitutes one of those domains. There are two steelhead ESUs in that domain. One of those being the Southern California steelhead issue.

In all of these domains, whether it is California or up in the Pacific Northwest, we're are engaging or have divided the recovery planning process into basically two phases. The first phase is a technical science-based phase, and the second is planning phase. And I will talk about each of those now.

The initial first phase of recovery planning as I say for Southern California for steelhead in particular will be this recovery science effort. It's going to be directed by NOAA Fisheries scientists from the Santa Cruz laboratory, Northern California. The goal of their work is to basically develop the scientific foundation for the

recovery plan. We recently appointed a technical recovery team or TRT to do this work. That was probably in the last two months or thereabouts. It is comprised of, I believe, 15 different NOAA scientists, academics and folks from other agencies. We went through a public solicitation process to get a pool of candidates. Those candidates were then evaluated by American Fishery Society against a set of criteria. If they met those criteria, they were essentially on a list of potential candidates. There was a recommendation made from our science center to our regional administrator and a team was appointed. If I didn't mention already, that team is going to meet for the first time next week.

There is several tasks that this team has before it. And I would like to list those out now, if I could.

The first is to develop biological viability criteria, or what you might call recovery goals for the ESU as a whole. They are also going to be characterizing and evaluating the relationships between habitat quality and productivity if they can do that. They'll be identifying and evaluating key limiting factors that are impeding recovery. They'll be evaluating recommending early recovery actions. They'll be identifying specific research, monitoring and evaluating needs. And then, eventually as we get a Phase II planning process moving,

the technical recovery team will be advising that team, will be a scientific source for them.

A key part of what the recovery team will be developing are these biological viability criteria or recovery goals, if you will. And the scientific framework for doing that will be a document that our NOAA scientists adopted in 2000. It is entitled Viable Salmon Populations and the Recovery of ESUs. This document is intended to provide a consistent approach for all technical recovery teams up and down the West Coast in the development of their delisting criteria, basically. And the way that will be done is to focus on four main parameters for individual populations. Those are abundance, productivity, spatial structure and universe.

So in developing viability criteria for the Southern California steelhead ESU, the TRT will undertake several different tasks. The first of those will be to look at both the historic and current population structure, essentially, with a goal trying to break the ESU into independent populations. That is sort of the fundamental unit of every evolutionarily significant ESU. So whether the Santa Ynez River constitutes one independent population or several, I can't tell you now, but certainly the technical recovery team will be attempting to make that determination, to see what the population structure

is like.

Once those independent populations have been identified, the team will develop viability criteria for each of those populations, and it will take into account those parameters of abundance, productivity, population structure and diversity. So in essence, and I can't really predict what this will look like, but the Southern California steelhead ESU will be divided into a series of different populations, and there will an abundance and productivity targets for each of those. Those will be aggregated in some fashion as a first step to come up with overall goals for the whole ESU. In some form Santa Ynez River will fit into this larger set of recovery goals for the ESU as a whole.

I guess it is fair to say that the delisting criteria, the core of the delisting criteria, will be viability, biological viability, targets. There will be other delisting criteria as well, I think, that relates more to addressing some of the factors that will respond to the decline of the ESU.

Now the ESA doesn't require that a species or an ESU in this case necessarily be restored to all of its historic range or historic level of abundance for it to be delisted. However, in developing these ESU-wide viability criteria the TRT is definitely going to be taking into

account information about the historic distribution, abundance and population structure of the ESU since that is likely to provide a pretty good indication of what would be of a viable ESU in the long-term or what might potentially be delisted.

Although the Southern California ESU, steelhead ESU, could be viable in the long-term with something substantially different than the historic population and structure and pattern of abundance, I think that the TRT will have to look long and hard and carefully at what might be viable if it is tremendously different from what historically was the case. I think in general we think, based on experience with other technical recovery teams on the West Coast and as just a matter of policy, that the closer that the delisting criteria or the viability criteria resemble the historic distribution and abundance, the more certain we are that we have an ESU that is likely to be viable in the long-term and that could be delisted. The more it departs from that or diverges from that, the more limited the distribution and so forth, the less certain we are going to be that it is viable.

The Santa Ynez River is one of the obviously more larger river systems with the current range of the ESU that presently supports steelhead. Because the Santa Ynez River is known to have been historically productive and

have habitat upstream for spawning and rearing, it was accessible to steelhead before Bradbury Dam was constructed, and we believe that both the current production and potential production of steelhead from this system will be carefully considered and evaluated by the technical recovery team as part of developing this ESU-wide and population specific viability criteria.

In evaluating the production and capacity of steelhead in the Santa Ynez River, we expect TRT is going to need to consider areas that are above Bradbury Dam because the area that is currently below Bradbury only has steelhead production that is limited and the amount of production is small.

The second phase of recovery planning is less of a scientific effort and more of a planning effort, and it's going to be aimed primarily at trying to identify specific recovery actions that would achieve these population specific and ESU-wide viability criteria. It is also going to need to address critical limiting factors that TRT identifies. To carry out this effort NOAA Fisheries intends to work with a wide range of stakeholders to establish some type of planning process that would be comprised of state, local, federal and other interested parties to help develop the planning element of this eventual recovery plan.

In addition to identifying recover actions, the planning team will be asked to estimate time and cost of implementing recovery actions, identify responsible agencies or other parties and formulate an implementation plan. To the maximum extent possible we are hoping that existing conservation efforts, for example, the Fishery Management Plan in the lower river, NMFS or NOAA Fisheries' Biological Opinion for the Cachuma Project and other efforts that are under way, will form kind of the core of any eventual plan that is developed. We expect that that will be built upon.

So, basically, in conclusion what I want to say is that we expect that the TRT is going to need to consider steelhead production throughout Santa Ynez River Basin as part of developing these biological viability criteria and since achieving the criteria may well necessitate providing fish passage between upper and lower basins. I think there are several studies that are necessary. These include investigating the feasibilities of providing steelhead passage at Bradbury Dam, assessing steelhead spawning and rearing habitat above Bradbury Dam that could become available if passage were provided, investigating instream flows that would support migration spawning and rearing of steelhead above Bradbury Dam. These and other studies will be discussed by some of the other NOAA

Fisheries folks providing testimony.

Lastly, in conclusion, I would like to point out or say that we urge the Board to incorporate some specific conditions in the Bureau's water rights permits. First, these studies be required and they be conducted over the next three to four years. And secondly, that the Cachuma Project be operated on an interim basis in accordance with the Biological Opinion and the terms and conditions of the incidental take associated with that.

That concludes my statement.

MR. KEIFER: Thank you.

NOAA Fisheries calls as its next witness Mark Capelli.

Mr. Capelli, is NOAA Exhibit 6 your testimony today before the Board?

MR. CAPELLI: Yes.

MR. KEIFER: Do you affirm your testimony is true and correct?

MR. CAPELLI: Yes, I do.

Morning, Mr. Chairman. My name is Mark Capelli. I am the area recovery coordinator for NOAA Fisheries for the South Coastal half of California. This area includes, as mentioned, two distinct populations segments that have been listed under the Endangered Species Act. And the northern most population of steelhead is listed as

threatened. And the southern population is listed as endangered. The purpose of my testimony today is to briefly review NOAA Fisheries' understanding of the historic and the current status of the Santa Ynez River steelhead that would be in context of the Southern California ESU.

As was mentioned, NOAA Fisheries has listed Southern California steelhead as an endangered species in 1997 as part of Southern California ESU. And this ESU stems from the Santa Maria River down south to Tijuana at the U.S.-Mexican border and includes all drainages where there is physical access from the ocean to the inland surface waters. In the Santa Ynez River the area that is included within the ESU extends from the mouth upstream to Bradbury Dam and includes the tributaries below the Bradbury Dam.

To say a word about the basis for the listing. Southern California steelhead were listed as endangered because there was wide spread and dramatic decline in the abundance and in the frequency of anadromous runs compared to historic levels over the last 50 years. In the Federal Register notice listing the species NOAA Fisheries noted that there were less that 200 adults in each of the six major systems or six river systems for which there were any estimates at all, and one of those was at Santa Ynez River.

The geographic boundaries of the Southern California ESU are defined essentially in terms of similar genetics, psychological, behavioral and other environmental characteristics associated with the species and its habitat.

Prior to the listing of Southern California steelhead, NOAA Fisheries conducted a coastwide status review in 1996. And it drew two basic conclusions which were relevant to the Santa Ynez River situation. The first is that the steelhead between Santa Ynez River and Malibu Creek, which at that time were the proposed southern extent of the Southern California ESU, exhibited distinct genetic characteristics. The second conclusion was that the Santa Ynez River steelhead population at that time was reported to be less than 100 adults per year.

In 2003 NOAA Fisheries completed a status review update, and it drew four basic conclusions regarding the Southern California ESU. And these are: First of all, that the larger river systems in Southern California were probably originally responsible for sustaining the Southern California populations. The second was that of the eight major systems in the Southern California ESU steelhead at that point occurred or were documented in only four of them and one of which was the Santa Ynez River.

As was noted, the Southern California ESU was extended to the U.S.-Mexican border because of some small populations that were documented in two streams, Topanga Creek in L.A. County and San Mateo Creek in San Diego County.

The third basic conclusion was that the runs in the southern ESU had declined from between 32- and 46,000 fish per year to about 500 fish per year. So the conclusion that the staff drew was that the Southern California ESU remains at risk of extinction and there was no recommended change in the status of the ESU.

The status review addressed a couple of additional issues in 2003. One was the relationship between potential upstream resident and anadromous fish and the other was potential effects of the stocking of hatchery fish in the ESU. But the status review drew no conclusions about either one of those issues, and they are currently under investigations. In fact, we just recently completed a genetic survey of the Santa Ynez River which is being used in addressing these questions.

I would like to now just review briefly some earlier estimates of the historic steelhead populations in the Santa Ynez River. The Department of Fish and Game in 1945 provided an estimate of steelhead run in the Santa Ynez River, and estimated that there were between 13,000 and

20,000, 25,000 adult fish per year. It was noted this was probably the largest run supported in Southern California. Couple of points about these observations, and I will say something more about towards the end of my presentation as well. These were direct observations by Department of Fish and Game personnel, and they were made at a time after the construction of Gibraltar Dam on the Santa Ynez River 25 years after, which cut off approximately a third of the historic spawning and rearing habitat. So this estimate did not purport to represent what the prehistoric runs sizes were in the Santa Ynez River. It was an estimate made at a point in time, relatively late, 1945, 25 years after Gibraltar Dam was constructed on the upper portion of the Santa Ynez River.

The Department of Fish and Game in 1994 developed a Steelhead Restoration Management Plan for California, and it reviewed information it had on the Santa Ynez as well as other streams, reaffirmed the Department's earlier estimate that it reported in 1945 and concluded that it still appeared to be -- that the Santa Ynez was probably the largest single run of steelhead in Southern California.

Subsequent to that, Dr. Robert Titus, who testified earlier, conducted a historical survey of the steelhead runs in California south of San Francisco to the

U.S.-Mexican border, identified some additional historical sources, particularly on the sport fishery associated with the Santa Ynez River and other rivers, and came to the basic same conclusion, that the Santa Ynez River supported a substantial run of steelhead that provided important sport fishery.

He noted that while there were not precise quantitative estimates of the runs of adult fish, there were counts made of rescue fish on the order of a million fish in one year, in 1945. That seems to corroborate the earlier estimates for the adult run size. He also noted that those counts of rescued fish were probably undercounts because of when they were done and where they were done.

In 1945, as part of the Cachuma Project, the Bureau of Reclamation issued a report to Congress and this report, among other things, dealt with the steelhead resources of the Santa Ynez River. And it made a number of statements regarding the nature, the size, the significance of this resource. And I will just briefly summarize three of them.

First, he noted that the Cachuma Dam was located downstream about two-thirds of the best steelhead spawning and rearing habitat in the Santa Ynez River. So access to areas above this dam were obviously not possible without

fish passage, and that limited the amount of habitat available by a substantial amount.

The report also acknowledged the general magnitude of the size of the runs that had been noted by the Department of Fish and Game since a 1945 report. The estimate given in the Bureau report was in the neighborhood of 20,000 adult sea-run fish per year.

And finally the report acknowledged that value of the steelhead fishery as a recreational fishery and gave some estimates about the dollar value at that time, and that it had a value of perhaps $200,000 a year in 1945 dollars. And that the construction of the project would result in an annual loss of about $70,000 per year, again in 1945 dollars, without provisions for protection or perpetuation of the runs.

I would like to make a number of observations about all of these historic observations and estimates and evaluations of the Santa Ynez River populations. First of all, the estimates are generally expressed in terms of annual averages and do not provide estimates for interannual variation or longer term sizes. The runs, as the hydrology of the river itself, is highly variable. So these numbers that are cited in previous historic estimates tend to take a static picture rather than a more complex nuance picture of the actual patterns of runs in

the Santa Ynez River.

The second point is that the earlier runs were based on direct observations by what are described in the Bureau's report as competent DFG Department of Fish and Game personnel. However, they were not subjected to quantitative monitoring techniques. I would note here that I am aware of only one instance where there has been an attempt to monitor every fish that moved into or out of a coastal stream in California, and that was the classic study by Shapovalov and White on Waddell and Scott Creek. The reason for this is it is very time consuming, very labor intensive, expensive and technically difficult to actually monitor fish that are moving in a system that is flashy, as our Southern California streams are. All of the efforts to determine run sizes in the streams from coastal California and other places are based on various kind of trapping techniques, which are essentially sampling methods. They provide estimates of run sizes. They don't provide actual total fish counts.

The last point I would like to make is that the estimates have been made for the Santa Ynez historic estimates are consistent with estimates made for other Southern and Central California coastal streams, but that the precise numbers of the historic runs can't now be recovered after the runs have ceased or have been

substantially altered.

So let me just try to summarize a little. The available historical information indicates that the Santa Ynez River prior to construction of Bradbury Dam, 1953, supported an annual run of sea-run trout that numbered in the thousands with a lot of variability from year to year and probably decade to decade as well.

Secondly, this run of fish, as well as the rearing juvenile fish, supported important recreational fishery that served the regional as well as the local angling population. And, in fact, fish were moved from the Santa Ynez River were occasionally planted in other streams in other parts of Santa Barbara County and outside of Santa Barbara County, so that those fish, too, supported or helped to support recreational fishing activities.

The current Santa Ynez steelhead population is extremely depressed. The best estimate we have today is that there is less than a hundred adult sea-run fish a year, and that is an average. There is even variations within that, and runs could be nonexistent in dry years or in periods of extended drought.

Finally, the Santa Ynez River is included in the Southern California ESU because it is considered a high risk of extinction and is listed as endangered and the recovery effort that we are now just getting underway is

going to be addressing how to address the status of the steelhead runs in the Santa Ynez River and what role the Santa Ynez River will play in the ultimate recovery and delisting of the Southern California ESU as a whole.

And that concludes my testimony.

MR. KEIFER: Dr. Cluer will be our next witness. He prepared a PowerPoint presentation that makes up the photographs that are in Exhibits 8A through 8K with selective bits of his testimony. We've got the slides printed out for distribution here.

NOAA calls Dr. Brian Cluer as its next witness.

Dr. Cluer, is NOAA Exhibit No. 3 your testimony today before the Board?

DR. CLUER: Yes, it is.

MR. KEIFER: Do you affirm that that testimony is true and correct?

DR. CLUER: I do.

Morning, Mr. Silva, Members of Board. My name is Brian Cluer. I have a Ph.D. in fluvial geomorphology from Colorado State University. For the last three years I have working with NOAA Fisheries on pretty much anything that has to do with sediment and fish. It's given me a wide variety of experience in salmonid habitat. Prior to that, for about 19 years, I worked for the National Park Service in its national office of water resources, and my

entire professional career I have worked on the effects of large dams on river systems and the effects on endangered fish habitat. Large projects I have worked on Bureau of Reclamation projects, Glenn Canyon Dam and its effects on Grand Canyon ecosystems, Flaming Gorge Dam and its effects on the Dinosaur National Park and Canyonlands National Park ecosystems.

My testimony and presentation today are -- I have two purposes. The first one is to give a basic understanding of river functions of fish habitat. And the second is to suggest the investigations to assess the functional health of the Santa Ynez River steelhead habitat.

Next one.

There are five components in river systems, functions and processes. And those components are hydrology, biology, geomorphology, water quality and connectivity. We have heard in prior testimony quite a lot of information on hydrology. It seems to me we have substantial information in that area, although we are still struggling a bit with some low flow issues that we heard from prior testimony.

In biology, seems that we have quite a lot of information there, although you will hear more from my coworker, Dr. Stacy Li tomorrow. In the area of

geomorphology we've heard very little about the Santa Ynez River and the functional health of that ecosystem. And I'll give you a little bit of information on that today. The area of water quality, I am not certain we need more information there, but my coworkers may make some comment in the area. In the area of connectivity I think we need to think at two scales, small scale and large scale. Of course, the large scale speed bumps in the Santa Ynez River are the dams. As the small scale we can think in terms of geomorphic elements and reach points of rivers. Geomorphic elements being tributary miles or bars or reservoir deposits.

Next slide, Andy.

Thank you.

So just a brief background here in Geomorphology 101. Fluvial stream channels achieve a balance between flow, and this is typically expressed as frequent flood flows in the range of one to five year return intervals, and that is the energy that moves sediment. So flow, sediment load and the nature of the bed and bank are what give us the typical forms and functions of streams that we know and love. And the balance between flow, sediment load and the nature of bed and banks is a dynamic equilibrium.

Next slide please, Andy.

Many parts of the Santa Ynez River are not totally alluvial. And so the alluvial components of confined stream channels, we call these not totally alluvial channels, confined channels; they also achieve a balance between flow, sediment load and the nature of bed and banks. And the result is an overall channel morphology that records rare flow events, those that are highly energetic and may only occur on a decade or century scale, combined with streambed sediment features that are responsive to the one-to-five-year flow events that require -- more frequent flow events are recorded in those streambed features that create fish habitats. So habitat in confined stream channels in many ways is more reliable than it is in unconfined stream channels, at least those that are heavily managed because the morphology of those habitats is more durable.

Next slide, Andy.

This a map of the Santa Ynez watershed that we prepared, and there is a lot of detail here that I'm not going to go into. But my coworker, Jon Mann, and Dr. Stacy Li will also be using this map and explain different features on it. I am showing it as a preface to the next few slides which are about the difference between unconfined and confined channels.

To the left of Bradbury Dam, basically downstream,

we mostly have the unconfined channels, the alluvial channel. And to the right, or upstream of Bradbury Dam, is predominantly confined channels. So Dams are usually located at points where geomorphology is conducive to sighting large structures that can take heavy loads. That is where we find these differences between geomorphic effects in watersheds often.

H.O. SILVA: Could you, as you go through the exhibits, just name them for the record as you are going through the exhibits.

DR. CLUER: That is NOAA Exhibit 7A, the watershed map.

Next slide, Andy.

So brief geomorphic setting of the Upper Santa Ynez River. The upper by my definition is upstream of Bradbury Dam. That stream channel is defined by -- it is confined and it is gravel bedded. In gravel bedded streams we find pools, step pool structures and some boulder steps as well. And upstream of Bradbury Dam we see a number of locations where bedrock influences the channel and the habitat as well. And this photograph is the Santa Ynez River at Red Rock. And that is NOAA Exhibit 8C.

Next slide.

The geomorphic setting for the Lower Santa Ynez River is -- this slide is at the Lompoc Bridge, NOAA

Exhibit 8J. This is an unconfined, sandy stream. It may be gravel bedded in places and there may be gravel underneath the sand. This type is predominant downstream of the Narrows. And the type of geomorphic feature we find here are meanders, alternate bars and riffle pool complexes. So we have two different types to manage in the Santa Ynez Watershed bed. We have alluvial channels and alluvial components of the component channels.

Next slide, please.

MR. KEIFER: Before we go on. In our testimony that we have provided, this is labeled Floradale Street Bridge. What we have on the slide now is correct, Lompoc Bridge, and what we have provided earlier was incorrect.

DR. CLUER: What is on the slide here in front of you is correct. What was submitted was incorrect.

MR. KEIFER: Thank you.

DR. CLUER: Then we have tributaries to the Santa Ynez River, and there is a number of them. These are pictures of Indian Creek, which is our Exhibit 8E, and Santa Cruz Creek, our Exhibit 8J -- or G, I'm sorry, 8G.

And these are -- we can define these as being steep and confined and in that we would find habitat made up of step pool, boulder and again with bedrock influences. And there would be a transition between the confined

tributaries and the unconfined alluvial channels that go in the lower Santa Ynez River where we would find meanders and alternate bar or riffle pool complexes. Each of these different types of habitat requires different types of management approaches.

Next slide, Andy, please.

So I put this slide in here to remind us that dams trap not only water, they trap sediment and disturbances to the equilibrium that create the habitat of stream channels. Trapping water and trapping sediment disturb the equilibrium and we expect to see a shift in habitat that goes along with that.

Just briefly, dams regulate the flow of water. And that is based on or is a function of reservoir size relative to the watershed yield and the operational scheme of the reservoir. Dams also regulate the flow of sediment, and that is a function of sediment yield the watershed and the trapping efficiency of the reservoir. I have already said that trapping water and sediment upsets the balance between effective flows, sediment supply, and that changes morphology and the habitat downstream. So the question is do we still have a functioning river ecosystem, and the answer will be in shades of grey, of course.

Next slide, please, Andy.

Responses of stream channel to flow and sediment regulation are complex, and that is probably the most important thing we have learned over the last few decades studying the big dam projects on various river system in the U.S. and elsewhere. That means that the management of regulated river systems requires site-specific knowledge so we can use literature review to form the hypotheses, but we need not obtain information locally to test those hypotheses and see what processes are being affected and at what rate on the Santa Ynez River.

Next slide, please.

Information is needed on how fishing habitat changes follow channel changes caused by flow regulations and sediment trapping in the reservoirs. This information is fundamental to assessing stability or trends of existing habitat and to assess the habitat resulting from management actions that we may take in the future.

Next slide, please.

So the next several slides are suggesting investigations. Santa Ynez River downstream from Bradbury Dam, I suggest that we should investigate channel changes since completion of Bradbury Dam, and we would want to look at riparian changes, geologic changes, et cetera. We should relate those channel changes to changes in fish migration habitat because that is the primary purposes of

that downstream watershed. And we should investigate mimicking historic channel forming flow regimes to determine how the channel and fish habitat may improve. And this could be done numerically as well as empirically.

Next slide, please.

Continuing with downstream from Bradbury, we should determine where the tributary sediment inputs might achieve a balance of transport capacity. And that probably seems a little confusing to several of you because it confused my fellow panelists. What I mean by that is the effects of flow regulation and sediment trapping may be offset at some distance downstream after a number of tributaries have contributed their sediments applied the river. I think it would be a very useful investigation to determine where that point is in the Santa Ynez River. Once we did that, we would have an understanding of how sensitive the river is to changes in flow and sediment transport, which would make management actions to move that point upstream or downstream to improve fish habitat.

Next slide, please.

The tributaries in downstream of Bradbury Dam area may be accumulating sediment through tributary loss. I believe Mark Capelli has shown you some evidence of that. This happens if the main stem no longer has the transport

capacity to deal with the sediment load from the tributary loss. An investigation should look into that and it should relate fish passage success at those locations.

Next slide, please.

Upstream from Bradbury Dam, Juncal and Gibraltar Dams trap coarse sediment. And it's my understanding that they exert very little influence on the flood flow regime. And just based on geomorphic principles and knowledge of the literature, that results -- that would result in sediment starvation leading to armoring and bed degradation, and this could have positive or negative effects on fish habitat locally. So those areas should be looked into.

Next slide, please.

This is a detail of NOAA's Exhibit 7A, a watershed map. It is the upstream part of the Santa Ynez River. And I'm showing this to indicate what tributary streams could be affected by the process. I just mentioned armoring and bed degradation. I am not going to list all of them. There are numerous streams there.

Next slide, please.

Continuing with recommendations for the upstream of Bradbury Dam environment. We should investigate the sediment trapping efficiency of both the reservoirs, Juncal and Gibraltar, for the storage sediment size ranges

because we need not obtain an understanding of what sediment sizes exist in those reservoir bodies.

We should determine reduction of downstream sediment supply because of storing sediment in those reservoirs. And we should compare pre- and post-dam channel morphology, substrate and habitat conditions. And this could be done, and often is done with historic surveys and photographs, comparing them with modern conditions.

Next, slide, Andy.

There may be some special consideration for tributaries upstream from Bradbury Dam, and I believe we should assess tributary confluences for evidence of headcutting or channel armoring because these processes are operating in companion with main stem armoring or degradation. So we could couple those two studies, for example, if we do not see evidence of main stem degradation. Then we wouldn't necessarily look for evidence in that process. Either way it should be related to fish passage and habitat modification in those important tributaries.

Next slide, Andy.

Special consideration should be given to those tributaries that enter into the Cachuma impoundment. And there is a unique physical process operating at those tributary miles because of the impoundment. I suggest we

should assess tributary confluences for evidence of headcutting, channel degradation or in the opposite accumulation of sediment deltas. And if we -- that information should be related to reservoir levels and operations; in other words, the operational scheme and the operational history of the reservoir. And, again, those studies should relate to fish passage difficulties.

And the next slide is just that, a closer view yet of NOAA's Exhibit 7A of those tributaries that are affected by Cachuma impoundment.

Next slide, please.

So in summary, the Santa Ynez River system provides a complex of physical habitats which are most pronounced, the differences are most pronounced below and above Bradbury Dam. These physical differences are reflected in the distribution of steelhead habitats of the Santa Ynez River steelhead runs.

And the next slide.

Recognizing these distinct physical habitats and managing them is essential for the effective restoration and maintenance of the Santa Ynez River steelhead runs.

That concludes my testimony.

MR. KEIFER: At this time we would like to wait for Mark with the previous handout of NOAA Exhibit 16.

H.O. SILVA: That is fine.

MR. KEIFER: Our next witness has summarily prepared a presentation of previous exhibits of his testimony, and I would like to distribute that right now.

MR. KEIFER: NOAA Fisheries calls as its next witness Jonathon Mann.

Mr. Mann, is NOAA Exhibit No. 5 your testimony today before the Board?

MR. MANN: Yes.

MR. KEIFER: Do you affirm that that testimony is true and correct?

MR. MANN: Yes.

MR. KEIFER: Of the hand out which makes up some of his testimony about other exhibits, we'd like to mark as NOAA Exhibit 17.

H.O. SILVA: Okay. Again, if you can call out the exhibits as you go through, for the record.

MR. MANN: Morning. My name is Jonathon Mann. I am a hydrology engineer for NOAA Fisheries. My primary area of responsibility and duties is to provide engineering support for the coastal watersheds in California. I would like to begin by discussing the need for fish passage.

Fish passage around large reservoirs and dams should be investigated as a means of recovering the restoration

of fish runs. For steelhead, this includes timely and efficient passage of upstream migrating adults and passage of downstream migrating juveniles past an area that is limiting for the abilities and life cycle needs. Bradbury Dam is one of these areas.

Next slide, please.

This is NOAA Exhibit 7A, as previously presented. It is a geographic information system derived map of the Santa Ynez watershed, indicating the watershed outline and significant tributaries in the watershed, also showing the location of the dams in the watershed. The primary need for fish passage to be investigated at Bradbury is that there is a large potential habitat upstream of the dam. Earlier estimates from this analysis is more than 50 percent compared to the total watershed.

Next slide.

Bradbury Dam is approximately 48 river miles from the Pacific Ocean. Just to refresh everyone's memory on this, it is an earth filled structure. The structural height of the dam is listed at 279 feet. However, the hydraulic height of the dam, which is the difference between the normal reservoir water surface and the tailwater water surface, is approximately 190 feet.

It should also be noted that since Hilton Creek may be an important component to fish passage at the dam, the

differences in elevation from the confluence to the normal water surface in the reservoir is approximately 200 feet, confluence of Hilton Creek with the Santa Ynez River. The lower release points difference to the normal water surface elevation with Cachuma is approximately 110 feet, and from the upper release point on Hilton Creek to the normal water surface elevation on the lake is approximately 46 feet.

The next slide, please.

This is just another diagram, and these are -- the previous one and this one are all from CCRB-ID No. 1 Exhibit 226A.

There is basically a lot of room here for different alternatives for fish passage at Bradbury within the boundary of Bureau of Reclamation property. Just downstream of the dam is a large Stilling Basin, and then the Long Pool transitions into and then begins more of a natural river morphology downstream from that. Hilton Creek comes in, confluence downstream of the Stilling Basin, between Stilling Basin and Long Pool.

It is believed, I think, that Hilton Creek had been altered from its natural channel course due to construction of Bradbury Dam. The lower release point is indicated on this diagram as well as the upper release point.

MR. WILKINSON: Mr. Silva, I am going to raise an objection at this point to the testimony, again for the last minute or so of it. None of this appears to be part of the witness' written testimony. None of the written testimony attempted to go beyond what I believe was a general, generic analysis of fish passage. It was a rather abbreviated set of or piece of testimony, and none of it attempted to address specific opportunities for fish passage at Bradbury Dam. So I think it goes beyond his testimony.

H.O. SILVA: I am looking at it right now. Let me go through it.

I would agree. Looking at the written testimony, there is no specific details of alternatives that you get into now. You make a general recommendation of several opportunities, but there is -- I think you are going into much more detail than the written testimony. I would sustain the objection.

If you could summarize your written testimony, that would be preferable.

MR. WILKINSON: In light of that, Mr. Silva, I am going to move to strike the testimony relating to passage opportunities at Bradbury.

H.O. SILVA: I would agree. Again, if you can -- I will strike any of the testimony up to now that has

mentioned -- citing a specific exhibit, starting with this exhibit I believe.

Now cautioning, if you would just summarize your written statement as you have it now.

MR. MANN: I will be more general.

Next slide, please.

So some alternatives for fish passage include fish ladders, lifts, locks, hauling and transporting of fish. A fish ladder is analogous to water staircase that allows fish to make small leaps and bursts from the base of the dam up to the upstream reservoir.

(Reporter break.)

MR. MANN: And a lift is analogous to an elevator that would elevate fish in a water column through mechanical means from the base of the dam up to the water surface.

Go ahead to the next slide.

Locks are something that is analogous to a boat lock, where fish can enter, and it is also very similar to a lift where fish can enter and the water is pumped up, lifted up, fish are crowded up from the base of the dam to the reservoir.

And another alternative is a trapping mechanism to then haul or transport fish from a point below the reservoir, either to the reservoir itself or to upstream

points upstream of the reservoir.

Selection of these depend on a lot of considerations: run size, which is the number of fish expected during the migration season and should account for increases to restoration and recovery efforts. Depends on the run timing and other facility needs for other fish.

This map is also from the CCRB-ID No. 1 Exhibit 226A. It is basically there just to illustrate a problem in the area that alternatives for fish passage would be considered.

It should be noted that any alternative for fish passage, adult fish passage, may include some combination of these facilities, especially for a trapping facility it is common to require a small ladder, fish ladder, to get fish to a collecting area.

Next slide, please.

Juvenile fish passage, there is a couple of alternatives. One is sort of passing; you sort of allow the fish to migrate through the reservoir and downstream through hydraulic controlled structures of the dam. You can also have flushing facilities located at the upstream face of the dam or at the head of the reservoirs or at the head of the reservoir or major tributaries coming into the reservoir.

Collection facilities for the head of reservoir or tributaries, major tributaries, could include nets or a series of nets. It is commonly referred to as a gulper where you bring fish in and narrow it down to a point where fish are collected and then transported.

Again, these options and alternatives need further consideration. Also depends on the timing that fish come -- juvenile fish come through, the amount of them and other facility needs for adult fish. Since steelhead can migrate downstream after spawning, collection facilities need to account for collecting of adult fish as well downstream.

Next slide.

This is also from ID No. 1, 226 A. Illustrating the reservoir, major tributaries and locations that fall within Bureau of Reclamation property for locating these facilities.

Next slide.

In summary, we are recommending that investigation begin through a technical advisory group, an interdisciplinary-type of advisory group. And it could be concurrent and phased, as far as implementation. These investigations themselves as well as design facilities do take a large amount of time, and there is no time like the present to begin looking at fish passage for Bradbury.

The options and alternatives for Bradbury do also apply for other fish passage problems in the watershed such as Juncal and Gibraltar Dams.

I have been involved in past technical advisory groups for fish passage investigations and design implementation of facilities. We do have a good history of success. And as technology is changed, we have been able to incorporate some of that. I believe that the Bureau of Reclamation has that capability, combined with a group of other individuals composed of -- comprised from other agencies and interested groups.

Can I have the next slide.

This is from NOAA Exhibit No. 9. It is a 1948 Department of Interior report to Congress, and in it recommended a trapping and holding facility be provided to transfer steelhead above the dam. I agree that this would be something to be looked at as a first step.

That concludes my testimony.

H.O. SILVA: Thank you.

Again, I will sustain the objection. I guess we would strike -- I think these are okay. As long as we strike the testimony about the specific alternatives at Bradbury Dam. I think that was the objection.

MR. WILKINSON: That is right.

H.O. SILVA: This is No. 17, you say?

MR. KEIFER: Yes.

H.O. SILVA: We are done with your testimony?

MR. KEIFER: That concludes our direct.

H.O. SILVA: Why don't we take a quick stretch break and come back at 20 till. We will begin with the crosses.

H.O. SILVA: We have the panel. Bureau, are you ready to go?

MR. PALMER: Yes.

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CROSS-EXAMINATION OF NOAA FISHERIES

BY BUREAU OF RECLAMATION

BY MR. PALMER

MR. PALMER: Morning. Steve Palmer for the Bureau of Reclamation.

Mr. Lecky, I had a couple of questions for you.

Just curious, in your testimony you describe the current Biological Opinion as, if I understood, an interim. I wonder if you can explain what you meant by that.

MR. LECKY: I don't believe I used the word "interim" as describing the Biological Opinion.

MR. PALMER: I believe you mentioned that in talking about the flows that are included in the Biological Opinion.

MR. LECKY: I indicated that the flows that are in the Biological Opinion were based on some assumptions and that we thought that the assumptions about how well those flows would pass fish and maintain habitat needed to be investigated.

MR. PALMER: You concluded, and I'm reading from your testimony, before long-term flow requirements can be specified. Maybe I misunderstood and how you are referring to that.

MR. LECKY: One of the triggers for issuing consultation, of course, is the availability of new information. So given that little is known about fish migration and timing in this system, as we learn, if there is new information available that flows need to be modified up or down to optimize fish migration opportunities, then at some point it is conceivable that might constitute sufficient new information that we would recommend reinitiating consultation.

MR. PALMER: In fact, reinitiation is always available and, in fact, is required under the regulations when certain events are triggered; isn't that correct?

MR. LECKY: That's correct.

MR. PALMER: That is the only thing that NOAA has as its disposal is reinitiation.

MR. LECKY: Actually, either of the parties

involved have that at their disposal, yes.

MR. PALMER: I want to make sure I understood the focus of the testimony on the recovery planning process. Who is the party that is responsible for developing the recovery plan in this instance with the Southern California ESU?

MR. LECKY: Well, NOAA Fisheries has an obligation to develop the recovery plan.

MR. PALMER: In the some of the studies that have been recommended today by NOAA Fisheries, are those studies intended to address the ESU as a whole or merely the Cachuma Project and the Santa Ynez River?

MR. LECKY: They are meant to provide information to try and clarify the role of the Santa Ynez River in recovery of the ESU as a whole. I think there are some of the studies we recommend that probably go beyond the Cachuma Project. Sediment profile above Juncal is probably one of those.

MR. PALMER: So there are studies that you recommend that really do not directly apply to the Cachuma Project?

MR. LECKY: They are more applicable to a recovery planning strategy, providing sufficient information to have a well-formed recovery planning strategy.

MR. PALMER: I wonder if you would you agree with this statement or rephrase it certainly if you need to.

Isn't it true that the actions that were proposed by the Bureau of Reclamation and also the Member Units that are described in the NOAA Biological Opinion for Cachuma Project operations and also for what is described in the Fish Management Plan do, in fact, benefit the Southern California ESU?

MR. LECKY: I believe a statement in the Biological Opinion says we expect to see some benefits from those measures.

MR. PALMER: And it is your understanding that NOAA or, for that matter, any other party to the petition can petition the Board at any time they feel some issue needs to be reviewed, say, for example, regarding the Cachuma Project operations as it relates to its water rights permits?

MR. LECKY: I believe that is true.

MR. PALMER: Do you know traditionally, at least from your experience with NOAA, where the funding is derived from to develop recovery plans?

MR. LECKY: It comes from a varied number of sources. That is -- NOAA funds recovery planning process. We have worked cooperatively with other agencies, often

who are members, to provide some resources for recovery planning and actually looked to other agencies that have an interest in the outcome to participate as well. So it is a varied number of sources.

MR. PALMER: I assume you would agree that NOAA Fisheries does not need the approval or permission of the State Water Resources Control Board to develop the recovery plan for the Southern California steelhead; is that true?

MR. LECKY: That is true.

MR. PALMER: Mr. Mann, I had a question for you. In your direct testimony, if I read it correctly, you were recommending that there would be, as you put it, a series of systematic investigations performed by a technical advisory group that is led by the State Water Resources Control Board. I wonder if you could explain why you recommend that the Board lead this group. As I understand it, you are talking about actions related to the recovery planning process; is that correct? So my question is: Why do you recommend that the Board lead that effort?

MR. MANN: I think that is just one option.

MR. PALMER: Is that your personal recommendation or is that the recommendation of NOAA Fisheries?

MR. MANN: I think it is the recommendation of NOAA Fisheries.

MR. PALMER: Mr. Lecky, is that the recommendation of NOAA Fisheries?

MR. LECKY: Yes, it is. I think relative to the passage, that is an integral part of the Cachuma Project. It is the impediment to getting fish above the dam. I think relative to the Board's order it would make sense to have that issue on the table.

MR. PALMER: You qualified that by referencing passage, not the recovery planning process itself. You are not asking the State Water Resources Control Board to take the lead in the recover planning process, are you.

MR. LECKY: No, we are not.

MR. PALMER: So the plan you are talking about is more related to just the passage at Bradbury Dam?

MR. LECKY: Yes.

MR. PALMER: Mr. Mann, you talked about various fish passage studies. And then in your testimony you provided some bullets related to, I guess, the study process itself.

How long would it take to complete the study that you would recommend, as you are recommending here today?

MR. MANN: It will definitely depend on the level of effort that is given. I would say that within

three to five years all that could be completed.

MR. PALMER: What is the estimated cost?

MR. MANN: Exactly for what?

MR. PALMER: For the study you are recommending.

MR. MANN: I have not estimated that. Some of the information exists currently and that information could be used.

MR. PALMER: You have not made any estimate of cost?

MR. MANN: No.

MR. PALMER: Have you determined or do you have any idea about the particular studies that would be necessary to be completed prior to engaging in the particular effort on the passage you described?

MR. MANN: Well, in my written testimony there is an outline of steps that -- specifically information that needs to be assimilated and looked at to be begin with.

MR. PALMER: But you haven't determined whether any particular or all of these steps are necessary in this instance regarding Bradbury?

MR. MANN: It is a general outline. There would be some that might not apply at Bradbury. Some that would apply more than others.

MR. PALMER: That is all the questions I have. Thank you.

H.O. SILVA: Thank you.

Member Units?

MR. WILKINSON: Yes.

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CROSS-EXAMINATION OF NOAA FISHERIES

BY MEMBER UNITS

BY MR. WILKINSON

MR. WILKINSON: Mr. Wingert, I would like to start with a few questions about the recovery planning process that you were describing.

Is my understanding correct that the process has now been initiated; is that right?

MR. WINGERT: I would say it is just now being initiated. The technical recovery team will be meeting really for the first time next week.

MR. WILKINSON: The technical recovery team was appointed, I think your testimony was, within the last two months; is that right?

MR. WINGERT: Approximately, yes.

MR. WILKINSON: Just to address a subject Mr. Palmer was asking about. Is it your understanding that, in fact, it is NOAA Fisheries that is required to produce a recovery plan by the Endangered Species Act?

MR. WINGERT: That's correct.

MR. WILKINSON: Is it also your understanding that NOAA has to, in developing that plan, incorporate specific management actions necessary for the conservation and survival of the species?

MR. WINGERT: That is correct.

MR. WILKINSON: Is it your also your understanding that NOAA has the obligation to include objective, measurable criteria that would result in the removal of the species from the list?

MR. WINGERT: That's correct.

MR. WILKINSON: Is it also your understanding that as part of this recovery planning process that NOAA is obligated to include as part of the recovery plan estimates of the cost and the time required to achieve the plan's objectives?

MR. WINGERT: That is correct.

MR. WILKINSON: I gather from your answers to my earlier questions that the recovery team has not yet developed site-specific management actions for the Southern California ESU?

MR. WINGERT: No. I just want to clarify if it wasn't clear previously in my testimony, the technical recovery team will take care of -- will implement really the first phase of recovery planning, the science part of

it. And the principal task they have to come up with, they have to develop our recovery goals or viability criteria for individual populations that make up the ESU and for the ESU as a whole. The measures necessary to achieve those would actually be the task of a second team, more of a planning team stakeholder, populated team, if you will. So I just want to make clear that you aren't mistaken that the TRT itself will be developing those measures.

MR. WILKINSON: Those measures will be part of the recovery planning process and those measures have not yet been developed; is that right?

MR. WINGERT: That's correct, yes.

MR. WILKINSON: Is it also true that the recovery planning process has not yet developed objective, measurable criteria for the recovery of the species?

MR. WINGERT: That's correct.

MR. WILKINSON: You have divided the process into two phases. Is my understanding correct that the studies that NOAA Fisheries is recommending that the Board require are directed to part one or Phase 1 of the this planning process?

MR. WINGERT: I think they would actually contribute to both phases.

MR. WILKINSON: Can you give me a time

estimate of the time required to complete Phase 1?

MR. WINGERT: Based on my observations of the progress of other technical recovery teams on the West Coast, I would think that in three years or thereabouts the technical recovery team could be completing its work, depending on when we establish the Phase 2 process. I think we want to wait a little while to see the TRT move forward. I am thinking that the second phase and perhaps the completion of the plan might take five, six years. So the TRT work, I'm hopeful, could be completed in three years.

MR. WILKINSON: We are talking about a five- to six-year period, then, for completing a recovery plan?

MR. WINGERT: Probably practical, reasonable, yes.

MR. WILKINSON: Is it your understanding that in these proceedings that the Board has retained continuing jurisdiction over the permits for the Cachuma Project?

MR. WINGERT: I believe so.

MR. WILKINSON: Mr. Lecky, I am going to hand you a letter that we will mark as the Cachuma Member Units next in order. I believe it would be Exhibit 248.

Are you familiar with the letter, Mr. Lecky?

MR. LECKY: Yes.

MR. WILKINSON: If we go to the last page of the letter, is that your signature?

MR. LECKY: Yes, it is.

MR. WILKINSON: Can you tell me what the purpose of this letter is? And I will identify it for the record as a letter that appears to be dated October 7, 2003, addressed to Mr. Andrew Fecko, Division of Water Rights, State Water Resources Control Board.

MR. LECKY: These are NOAA Fisheries' comments on the Draft Environmental Impact Report that the Board published.

MR. WILKINSON: In the letter, and I gather that the purpose of the letter was to comment on the State Board's Draft EIR; is that correct?

MR. LECKY: That's correct.

MR. WILKINSON: That is the Draft EIR developed for these proceedings?

MR. LECKY: That's correct.

MR. WILKINSON: In the letter it appears that you propose six different studies to be undertaken regarding steelhead; is that an accurate account?

MR. LECKY: Yes. I believe that is correct.

MR. WILKINSON: And you say in the letter, I believe, that these studies should be undertaken and implemented before the State Board develops a final EIR.

Is that also right?

If you look at Page 3, up near the top, there appears to be a statement to that effect.

MR. LECKY: What we are asking is that they identify these studies as part of the final decision, I believe, not that they be done before they make that final decision.

MR. WILKINSON: When NOAA Fisheries says that NOAA Fisheries recommends the following six steelhead investigations be undertaken and incorporated into the Final EIR and the State Board deliberations before making any final decision on the public trust interests in the steelhead resources of the Santa Ynez River, does that mean that you simply would have them identify those studies or complete the studies and include the results of the studies in the Final EIR?

MR. LECKY: Consult with my colleagues here real quick.

Okay. Our view is that these are studies that need to be conducted to fully inform an understanding of achieving, in the Board's case, public trust obligations for dealing with steelhead. So the context of this statement is we feel these are important studies that need to be in order to collect information in order to have a well-informed study. The final decision we refer to here

today is not necessarily that the decision of this hearing, but ultimately at the end of the day how are we going to run the system to achieve a functional, viable steelhead population.

MR. WILKINSON: You are not saying, then, that the Board should not issue a water rights order as a result of this proceeding until these studies are complete; is that correct?

MR. LECKY: That is correct.

MR. WILKINSON: Nor are you saying that the Board should hold off on finalizing its EIR until the studies are complete?

MR. LECKY: That's correct.

MR. WILKINSON: Now the studies that you have recommended in your letter to Mr. Fecko, are those studies intended to help develop site-specific management actions regarding the conservation and survival of the steelhead?

MR. LECKY: They certainly fall under that umbrella.

MR. WILKINSON: They're also intended, are they not, to help NOAA Fisheries develop objective, measurable criteria that could result in the removal of the steelhead from the endangered species list?

MR. LECKY: It would contribute to that.

MR. WILKINSON: If the State Board does ont

order these studies to be undertaken, Mr. Lecky, wouldn't NOAA Fisheries do these studies as part of its recovery planning process?

MR. LECKY: I think these are also elements of the Biological Opinion. And so I think in addition to recovery planning, and in an effort to assure NOAA Fisheries would directly undertake these studies or try to find partners within the state to undertake them or other interests to look to have them done. There are -- some of the studies require the Biological Opinion, to verify the assumptions that are made and the conclusions that are in the Biological Opinion. So I think there is -- these would be, I think, first important to have, to understand whether or not we made the right call and whether or not that question of jeopardy and no jeopardy needs to be revisited. And then secondly, this would help define the role of the Santa Ynez River in the overall recovery strategy for the ESU.

MR. WILKINSON: In other words, if the Board does not order these studies, you believe you have a mechanism in terms of the Biological Opinion to require that these studies be done; is that correct?

MR. LECKY: Yes, I believe so.

MR. WILKINSON: Thank you.

I would like to look a little bit at the study

process that you proposed to the State Board, Mr. Lecky. In the studies that are identified in your letter to Mr. Fecko, it appears that in each and every instance you have proposed that the studies would be carried out, quote, buy an independent consultant under the auspices of the State Board; is that right?

MR. LECKY: Yes, I believe that is in the here.

MR. WILKINSON: Can you tell me what you mean, sir, by the "independent consultant"?

MR. LECKY: Essentially it is an effort to get an unbiased view of these answers to these questions.

MR. WILKINSON: Is it not the case that we already have a functioning, existing Adaptive Management Committee.

MR. LECKY: Yes, we do.

MR. WILKINSON: That committee also includes a relatively broad representation, does it not?

MR. LECKY: Yes.

MR. WILKINSON: NOAA is represented on that committee?

MR. LECKY: That's correct.

MR. WILKINSON: Department of Fish and Game is on that committee?

MR. LECKY: Yes.

MR. WILKINSON: Fish and Wildlife are on that Committee?

MR. LECKY: Yes.

MR. WILKINSON: Is it not the case also that the committee is already committed to undertaking a relative broad range of studies?

MR. LECKY: Yes.

MR. WILKINSON: And those studies include fish passage opportunities at Bradbury Dam; is that right?

MR. LECKY: I believe so.

MR. WILKINSON: If you want independence, Mr. Lecky, wouldn't it make sense to use the Adaptive Management Committee and then have independent peer review of the AMC's work?

MR. LECKY: Yes. Actually, I think that is good. We do want to have a cooperative program that builds on the existing efforts that are in place. I don't mean to undermine that effort by the language in this letter.

MR. WILKINSON: Is it the case, then, that the Member Units who have contracts for water supply from the Cachuma Project would also be included within the investigation group that we are talking about?

MR. LECKY: Yes. I believe they have a role to play here.

MR. WILKINSON: Thank you. I didn't see them mentioned in your letter, and that was of concern to us, frankly.

Mr. Palmer was asking a couple questions about payment for the studies, and it was a little unclear to me at least from the answers that he got. Would the expectation that NOAA has be that all of these studies would be paid for by the Bureau or the Member Units, or would NOAA be willing to cover the cost of these studies itself?

MR. LECKY: NOAA doesn't have much of budget for this. So I think we would be looking for most of these studies to have significant contributions from the Bureau.

MR. WILKINSON: And since the Bureau doesn't have much of a budget either, that would be mean Member Units, correct?

MR. LECKY: How the Bureau does their business is up to the Bureau.

MR. WILKINSON: Would be that true, Mr. Lecky, also of the studies that are above Bradbury Dam?

MR. LECKY: For some of them. I think the studies difficulties relative to looking at opportunities to -- well, let me take a step back.

Part of the passage is get -- part of the passage

issue is getting fish into the tributaries that empty into Bradbury Lake. So to the extent that there are issues on how to reintroduce fish up there and also on how to collect or provide migration through the lake for juveniles downstream migrating, I think those are legitimate issues that would fall under that category.

MR. WILKINSON: One of the studies that has been proposed in your letter is an investigation of fish passage at Bradbury Dam and Cachuma Reservoir; is that right?

MR. LECKY: That's correct.

MR. WILKINSON: I'm going to hand you another letter. This is dated November 5, 1998, Cachuma Member Units next in order, which I would believe would be Exhibit 249.

MS. DIFFERDING: 248. The prior one should be 247.

MR. WILKINSON: Thank you. 248.

Do you recognize the letter, Mr. Lecky?

MR. LECKY: Yes.

MR. WILKINSON: It appears to be addressed to Santa Ynez Consensus Committee members. What is the Santa Ynez River Consensus Committee, if you know?

MR. LECKY: I believe this is the committee working on the Fish Management Plan, but I don't know

exactly why it is addressed that way.

MR. WILKINSON: Were you on the Consensus Committee?

MR. LECKY: No.

MR. WILKINSON: Was anyone from NOAA on that committee?

MR. LECKY: I don't know -- I don't believe so.

MR. WILKINSON: Do you recall whether the committee was chaired by the Department of Fish and Game?

MR. LECKY: No, I don't.

MR. WILKINSON: The letter appears to be signed for a William Hogarth, Ph.D.

MR. LECKY: That's correct.

MR. WILKINSON: Who is Mr. Hogarth?

MR. LECKY: At the time Dr. Hogarth was the administrator for the Southwest Region. He currently is the administrator for the agency.

MR. WILKINSON: He is now the top person at NOAA Fisheries?

MR. LECKY: That's correct.

MR. WILKINSON: His letter appears to be in the nature of comments on the Santa Ynez River Fish Management Plan, as you identified; is that right?

MR. LECKY: That's correct.

MR. WILKINSON: The comments were made on behalf of NOAA Fisheries?

MR. LECKY: Yes.

MR. WILKINSON: If you would turn to Page 2 of the letter, the very bottom the page you will see a heading entitled Southern Steelhead Supplementation. Do you see that?

MR. LECKY: Yes, I do.

MR. WILKINSON: Would you read the paragraph that follows.

MR. LECKY: It is unclear from the description of this proposed action how stocking streams above Bradbury Dam with steelhead/rainbow trout from the population above the dam would benefit the native steelhead in the Lower Santa Ynez River. It is unclear if native steelhead can be located above the dam as both CDFG and the U.S. Forest Service have planted non-native hatchery fish in the watershed above the dam for many years. Fish spilling over the dam may compete with native steelhead in the Lower Santa Ynez River, reducing their chance of survival.

(Reading)

MR. WILKINSON: Is it your understanding from what you just read that Mr. Hogarth was not favorable to the idea of moving steelhead from below Bradbury Dam to areas above the dam?

MR. LECKY: No.

MR. WILKINSON: That is not your understanding?

MR. LECKY: My understanding of this paragraph that I just read is that supplementation as part of an ESA recovery strategy is a tricky issue, and you need to have pretty well-thoughtout information about, one, what the supplementation program is doing to the population from which you are collecting your brood stock and, two, what the interactions between that brood stock and the outmigrant -- between the plants and the resident fish is.

This basically is just saying there is not enough information presented in the Fish Management Plan for us to have a well-informed view of whether this would be good or not.

MR. WILKINSON: When you use the term "supplementation program," what are you describing?

MR. LECKY: Well, typically, a supplementation program involves collecting, relative to drought, collecting fish, rearing them in captivity, and then outplanting them, maybe even breeding them in captivity

and then planting those fish out. It is a way to get around some of the various bottlenecks in small population dynamics.

MR. WILKINSON: Would trap and truck be considered a supplementation program?

MR. LECKY: No.

MR. WILKINSON: From what you read, is it your understanding that Mr. Hogarth had concerns about fish that would be above Bradbury Dam moving below Bradbury Dam and competing with fish below Bradbury Dam for available habitat?

MR. LECKY: Well, actually the concern is that there may be non-native fish up there that are less fit, and that's an issue that needs to be investigated and understood before we could evaluate whether this was potential. And a concern is that those may have fish that are not native, less fit and be placed -- and would create competition issues below Bradbury.

MR. WILKINSON: To your knowledge, Mr. Lecky, are steelhead below Bradbury Dam habitat limited at this point in time?

MR. LECKY: I don't know the answer to that question.

MR. WILKINSON: Do any of the panel members know the answer to that question?

I don't hear any answer so I assume the answer is no.

MR CAPELLI: It is not clear what the question is.

MR. WILKINSON: Let me restate it.

Do you have an idea, Mr. Capelli, as to whether or not steelhead located below Bradbury Dam are habitat limited?

MR. CAPELLI: I still don't understand what you mean by "habitat limited."

MR. LECKY: The question is: Are they fully occupying their existing habitat, and is that a constraint on population growth? I don't think we have enough information to know that.

MR. WILKINSON: Mr. Lecky, would you turn to Page 3 of Exhibit 248, and you will see that a heading on that page that talks about downstream passage for outmigrating juveniles from the upper basin.

MR. LECKY: Yes.

MR. WILKINSON: I wonder if you can read that first paragraph for us.

MR. LECKY: This action is not developed enough for NMFS to evaluate it. The degree to which the number of returning adults is a limiting factor in the Lower

Santa Ynez River is unclear. Increasing the number of adults may not improve the steelhead population unless other steps are taken to better provide for other steelhead life history stages. Moreover, the degree to which returning adults would actually be increased is also unclear. National Marine Fisheries Service is experienced with trapping and trucking in other areas of the West have not met expectations. Finally, how would downstream migrants intending to smolt be distinguished from fish moving downstream as part of a localized habitat preference change? Non-anadromous fish from the upper basin would compete with the steelhead in the lower river, potentially reducing their chance for survival. NMFS believes that the trapping and trucking proposals are best integrated into a Santa Ynez fish management after other options have been totally implemented and their success evaluated. Such proposals need to be carefully assessed for feasibility and long-term benefits and costs.

(Reading)

MR. WILKINSON: As the Assistant Regional Administrator for NOAA, are you familiar with the experiences that Mr. Hogarth was referring to when he said that trap and truck operations in other areas of the West have not met expectations?

MR. LECKY: Well, some of them -- there are trucking programs in the Central Valley, for example, that have contributed to vast amounts of strain. There are transport programs on the Columbia River that are designed to get juvenile fish around many of the dams up there, and there is some question about how beneficial that program has been.

MR. WILKINSON: You had those concerns with regard to the Santa Ynez, also; is that correct?

MR. LECKY: Yes.

MR. WILKINSON: Now, Mr. Hogarth also appeared to tell the Santa Ynez Consensus Committee that trap and truck proposals are best integrated into the Santa Ynez fish management after other options have been fully implemented and their success evaluated.

I didn't read that very well, but you get the gist of it?

MR. LECKY: Yes.

MR. WILKINSON: Has the Fish Management Plan,

which I believe you are familiar with, which provided the basis for the Biological Opinion, as I understand it, has that been fully implemented at this point in time?

MR. LECKY: No, I wouldn't say it is fully implemented. Pieces of it have been implemented. Other parts of it are yet to come.

MR. WILKINSON: Has its success been evaluated?

MR. LECKY: No, I don't believe so.

MR. WILKINSON: Let me give you another letter to take a look at. Mr. Lecky, this appears to be a letter dated January 8, 1999, on NOAA Fisheries letterhead. It is addressed to Mr. William Luce at the Bureau of Reclamation, and it appears to be signed by you; is that correct?

MR. LECKY: Yes.

MR. WILKINSON: Was the purpose of this letter in January of 1999 to provide certain updated comments of NOAA Fisheries on the draft biological assessment that was being prepared by the Bureau for the Cachuma Project?

MR. LECKY: Yes.

MR. WILKINSON: In fact, as part of the letter, there are about ten pages of comments that are attached to your letter?

MR. LECKY: That's correct.

MR. WILKINSON: I would like to direct your attention to the last sentence, actually the bottom paragraph on Page 1, and ask you to read that last sentence in that paragraph.

MR. LECKY: Starting with "Issues such as"?

MR. WILKINSON: Yes.

MR. LECKY: Issues such as trapping and trucking of steelhead, Oncorhynchus mykiss, and a steelhead hatchery require careful long-term development and assessment and are not appropriate for consultation at this time. (Reading)

MR. WILKINSON: Had the notion of trapping and trucking steelhead been proposed by the Bureau of Reclamation?

MR. LECKY: It is an issue that is identified in the Fish Management Plan. I don't recall if it was proposed by the Bureau. My sense is, it wasn't.

MR. WILKINSON: You were telling the Bureau, nonetheless, that -- did you mention --

MR. LECKY: I'm sorry, I said I don't believe the Bureau proposed it.

MR. WILKINSON: You were, nonetheless, telling the Bureau of Reclamation by means of your letter that NOAA did not want to consult with them about trapping and

trucking operations; is that right?

MR. LECKY: That's correct.

MR. WILKINSON: Let me give you one additional letter.

Mr. Lecky, this appears to be another letter on NOAA Fisheries letterhead that is dated December 5, 1997, and is signed by Rodney McInnis for Mr. Hogarth. Who is Rodney McInnis?

MR. LECKY: At the time, Rodney McInnis was Deputy Regional Administrator.

MR. WILKINSON: Where is he now?

MR. LECKY: Right now he is acting as the Regional Administrator.

MR. WILKINSON: So he succeeded Mr. Hogarth, then, as the --

MR. LECKY: Acting Regional Administrator.

MR. WILKINSON: For the Southwest Region?

MR. LECKY: That's correct.

MR. WILKINSON: Is it your understanding that the purpose of this letter was to comment upon the draft Santa Ynez Fisheries Management Plan?

MR. LECKY: Yes.

MR. WILKINSON: The letter appears to be addressed to a Ms. Ramona Swenson. We should probably identify this as Exhibit 249 of the Member Units.

Do you recall who Ms. Swenson was?

H.O. SILVA: Excuse me, Mr. Wilkinson. That would be 250; the previous one is 249. Just for the record, the January 8, 1999 letter would be Exhibit 249. And then the December 5th, 1997 letter would be Exhibit 250.

MR. WILKINSON: Thank you.

Now the draft plan -- I think I asked you whether you knew Ms. Swenson. Did you have an answer for that question?

MR. LECKY: I think I know -- yes, I do.

MR. WILKINSON: She was working at Entrix at that time?

MR. LECKY: Yes.

MR. WILKINSON: Entrix was assisting the Santa Ynez River Technical Advisory Committee, was it not, in preparing the Draft Fisheries Management Plan?

MR. LECKY: That's correct.

MR. WILKINSON: If you would turn to the second page of the letter, Mr. Lecky, and there is a heading entitled Alternatives Recommended for Omission. My assumption was that meant alternatives recommended for omission from the Fish Management Plan. I wonder if you would be kind enough to read the first sentence under the heading.

MR. LECKY: For reasons we describe below, we recommend that the following alternatives not be considered further. (Reading)

MR. WILKINSON: Would you read alternative No. 18 under that sentence?

MR. LECKY: Trap and truck adults from main stem to above Bradbury.

MR. WILKINSON: And No. 35.

MR. LECKY: Trap and truck adults to tributaries downstream of the dam.

MR. WILKINSON: And No. 39.

MR. LECKY: Trap and truck adults from main stem below dam to main steam above Lake Cachuma.

MR. WILKINSON: And No. 40.

MR. LECKY: Trap and truck downstream migrants from the main stem above Lake Cachuma.

MR. WILKINSON: No. 45.

MR. LECKY: Trap and truck adults from main stem below dam to tributaries above dam.

MR. WILKINSON: Would you read, please, the paragraph that follows just above Mr. McInnis' signature?

MR. LECKY: Generally, we recommend omission of these alternatives because many would require inordinate human

intervention and technical complexity, and, therefore, human mechanical errors seem inevitable. Some alternatives would likely provide only temporary biological benefit. Technical feasibility of these alternatives for alleviating limiting factors has not been evaluated. Some of the alternatives are not appropriate surrogates for the national environment. Simpler alternatives are available. We hope this information assists you in the development of the plan and look forward to reviewing the future drafts. Please contact Mr. Anthony Spina at a phone number given if you would like additional information. (Reading)

MR. WILKINSON: Is it fair to summarize that paragraph that you just read as an indication that NOAA Fisheries was again recommending the trap and truck operations not be studied?

MR. LECKY: I would characterize it as NOAA Fisheries thinks that trapping and trucking operations are premature given the lack of key information.

MR. WILKINSON: And are you aware of any new information that has been collected since the date of that

letter, Mr. Lecky, indicating that trap and truck would be appropriate for the Santa Ynez?

MR. LECKY: No, I think there are some studies just getting underway.

MR. WILKINSON: I have a couple questions, Mr. Lecky, about the other studies that you were recommending in your comment letter on the Board's Draft EIR.

Was one of those studies also a study of fish flows to support migration, spawning and rearing above Bradbury Dam?

MR. LECKY: Yes.

MR. WILKINSON: Can you tell me what the purpose of that study is?

MR. LECKY: It's essentially part of the evaluation characterization of the habitat above Bradbury Dam to identify where, if you did have passage, where suitable spawning habitat would be.

MR. WILKINSON: Apart from Lake Cachuma, does the Cachuma Project, to your knowledge, include any facilities above Bradbury Dam?

MR. LECKY: Not to my knowledge.

MR. WILKINSON: Does the Bureau of Reclamation, to your knowledge, have any facilities above Lake Cachuma that can affect flows for migration, rearing

and spawning above Bradbury Dam?

MR. LECKY: Not to my knowledge.

MR. WILKINSON: And, in fact, the only substantial facilities located above Bradbury Dam are Gibraltar and Juncal Dams; is that not correct?

MR. LECKY: That's true.

MR. WILKINSON: Are either of those facilities owned or operated by the Bureau?

MR. LECKY: No.

MR. WILKINSON: To your knowledge, sir, are the permits for those facilities before the Board in this proceeding?

MR. LECKY: No.

MR. WILKINSON: Is it your understanding that the flow releases from Gibraltar Reservoir were approved by the California Supreme Court in the Gin Chow litigation?

MR. LECKY: I am unaware of that.

MR. WILKINSON: Do you think that the people who do operate those facilities might have an interest in studies that could affect their operation?

MR. LECKY: I would think so.

MR. WILKINSON: Your letter, same letter of October 7th, also refers to a third study regarding channel forming flows in the lower main stem of the Santa

Ynez. I believe that Mr. Mann also talked about that.

Do you see that study?

MR. LECKY: Yes.

MR. WILKINSON: I think your letter explains that the purpose of the study is to examine the effects of on-channel formation created by the current operation of the Cachuma Project; is that right?

MR. LECKY: Right. Actually, I think it was Dr. Cluer who presented testimony on this.

MR. WILKINSON: Right. Maybe it was -- I guess it was Dr. Cluer.

For either of you men, does the current operation of Bradbury Dam, to your knowledge, include the winter storm operation procedures that have been implemented by the Bureau since the mid-to-late 1990s?

MR. LECKY: Yes.

MR. WILKINSON: That operation is undertaken, is it not, for flood control?

MR. LECKY: I believe so.

MR. WILKINSON: Effectively, what the Bureau does is make pre-releases from the dam in order to accommodate a larger storm?

MR. LECKY: Correct.

MR. WILKINSON: Is it your understanding, Mr. Lecky, that the Bureau does that to prevent or minimize

damage to life and property downstream of the project?

MR. LECKY: Yes.

MR. WILKINSON: Is it the purpose of this study that you're recommending to determine whether the current operations, including these winter storm operations, should be modified?

MR. LECKY: It's to look at those current operations, provide a river system that's functional for maintaining salmon -- steelhead, excuse me, spawning and rearing habitat.

MR. WILKINSON: Mr. Lecky, are you aware of any State Board order that has ever attempted to modify the flood control operations undertaken by the Bureau of Reclamation?

MR. LECKY: No, I'm not.

MR. WILKINSON: Are you aware of any State Board order in which the State Board has agreed to assume liability for flood damage from a federal project operated for flood control purposes?

MR. LECKY: No, I'm not.

MR. WILKINSON: Have you or anybody else at NOAA discussed with the State Board or its staff the potential liability that might be incurred if the State Board attempted to regulate flood control operations?

MR. LECKY: No.

MR. WILKINSON: Your study -- your letter of October 7 also asked the Board to study alternative flow regime for the lower main stem Santa Ynez River.

Do you see that?

MR. LECKY: Yes.

MR. WILKINSON: And the alternative flow regime that you recommend is one that NOAA apparently founded in the 1995 EIR/EIS that was developed in connection with renewal of the Cachuma contracts; is that correct?

MR. LECKY: Yes.

MR. WILKINSON: That is Alternative 3A2 that was discussed in the EIR/EIS for contract renewal?

MR. LECKY: Yes.

MR. WILKINSON: Mr. Lecky, I hope what I have handed you is Page 4-32 from the 1995 EIR/EIS for contract renewal. And on that page, under Alternative 3A2, are several bullets.

Is it your understanding that those bullets -- and if you could, Mr. Silva, tell me I'm up to 251?

H.O. SILVA: Yes, 251.

MR. WILKINSON: This is Exhibit 251.

Are those the elements as you understand them, Mr. Lecky, for Alternative 3A2?

MR. LECKY: Yes.

MR. WILKINSON: I believe your letter of October 7 indicates that it is this flow regime that should be evaluated to determine its suitability to meet the public trust interests in the steelhead resources of the Santa Ynez River; is that right?

MR. LECKY: Yes.

MR. WILKINSON: Your letter says nothing, does it, about the impact of the flow regime on people who depend on the Cachuma Project for water supply?

MR. LECKY: It does not.

MR. WILKINSON: Does NOAA Fisheries have any concern about impact of Alternative 3A2 on Cachuma Project water supplies?

MR. LECKY: Of course.

MR. WILKINSON: Do you know what those impacts are?

MR. LECKY: No, we haven't evaluated this.

MR. WILKINSON: So before recommending Alternative 3A2 for consideration by the Board you didn't consider the water supply impacts; is that your testimony?

MR. LECKY: No, we didn't.

MR. WILKINSON: Did you consider the impact of Alternative 3A2 on public trust resources in the Santa Ynez River before you recommended it?

MR. LECKY: Only the steelhead trout.

MR. WILKINSON: If you look to the final page of Exhibit 251, Mr. Lecky, there appears to be a table summary of Cachuma Project average annual deliveries and releases. And if you -- go ahead and examine the table.

Let me ask you: Isn't it a fact that Alternative 3A2 had the largest average annual impact upon water supplies of any of the alternatives studied?

MR. LECKY: Yes.

MR. WILKINSON: The reduction in Cachuma Project yield would be down from a yield of about 25,684 to 14,235 acre-feet annually, correct?

MR. LECKY: I'm searching for those numbers on the table.

MR. WILKINSON: The first one is at the top of the second column and then -- find it?

MR. LECKY: Yes. That's correct.

MR. WILKINSON: That would be a reduction in the Cachuma yield of about 45 percent, wouldn't it?

MR. LECKY: I assume your math is correct.

MR. WILKINSON: I think you can assume that.

Before NOAA recommended the study of Alternative 3A2, did you or anyone else at NOAA determine the impacts on water supplies in a drought condition?

MR. LECKY: No.

MR. WILKINSON: Are you aware, Mr. Lecky, of

any Bureau of Reclamation project in the United States where the annual yield for consumptive use long-term has been reduced by 45 percent under the Endangered Species Act?

MR. LECKY: Yes.

MR. LECKY: Which one?

MR. LECKY: The single event, the Klamath Project.

MR. WILKINSON: We both have been involved in that. I will let that pass.

Mr. Lecky, I think in your oral testimony this morning you described the difference between a biological opinion which uses a nonjeopardy standard and the standard of recovery for a species.

Do you recall?

MR. LECKY: Yes.

MR. WILKINSON: The standards are different, are they not?

MR. LECKY: Yes.

MR. WILKINSON: In fact, NOAA Fisheries pointed that out to Mr. Silva earlier this year, did they not?

MR. LECKY: Yes, I believe we have.

H.O. SILVA: This will be 252.

MR. WILKINSON: Thank you.

Mr. Lecky, Exhibit 252 is a letter to Mr. Silva that -- who signed that?

MR. LECKY: Signed by Scott Hill for Rodney McInnis.

MR. WILKINSON: I would appreciate it if you would read for us the last sentence in the second full paragraph on Page 1, starts with "Although the."

MR. LECKY: Although the 2000 opinion concluded the Cachuma Project operations were not likely to jeopardize the continued existence of the Southern California steelhead ESU, it did not address or identify those specific conservation management measures that would be necessary for recovery of the ESU, including population of steelhead in the Santa Ynez River. (Reading)

MR. WILKINSON: You were involved in the development of the 2000 Biological Opinion for the Cachuma Project?

MR. LECKY: Yes.

MR. WILKINSON: Does that statement that you just read reflect your understanding of the Biological Opinion?

MR. LECKY: Yes.

MR. WILKINSON: What I have handed you, Mr. Lecky, is a portion of the Biological Opinion. This will be Exhibit 253 of the Member Units. I would ask you to take a look at Page 66, which is attached as part of Exhibit 252, and read for me the heading that appears on that page about just below the mid point of the page.

MR. LECKY: Impacts on ESU Survival and Potential for Recovery.

MR. WILKINSON: If you would, turn to the next page, Page 67, attached to Exhibit 253, and would read the -- maybe it is highlighted, hopefully on your version -- the first full paragraph on the page.

MR. LECKY: Thus it is likely?

MR. WILKINSON: Yes.

MR. LECKY: Thus it is likely that the population's chance of persisting into the foreseeable future will be appreciably improved when the project is fully implemented. (Reading)

MR. WILKINSON: And the proposed project that we are talking about in that sentence is the operational regime for the Cachuma Project that was proposed by the Bureau of Reclamation?

MR. LECKY: Basically the project description in the Biological Opinion.

MR. WILKINSON: And what's your understanding of the words "appreciably improved"?

MR. LECKY: I would characterize that as observable improvement.

MR. WILKINSON: Would you then read for me the text of the next paragraph on the Biological Opinion?

MR. LECKY: The Cachuma Project is one of the major factors affecting steelhead in the Santa Ynez River. Proposed Cachuma Project operations and maintenance, if carried forward many years into the future, will provide the small Santa Ynez River steelhead population with improved critical habitat conditions in the form of increased migration opportunity and better access to spawning and remembering areas in the watershed below Bradbury Dam, allowing the population to increase in size. Therefore, the proposed project is likely to appreciably increase the likelihood of survival and recovery of the ESU by increasing its numbers and distribution. Monitoring will be needed to confirm this expected population trend. (Reading)

MR. WILKINSON: What is your understanding of the words "appreciably increase" as used in that paragraph?

MR. LECKY: Again, I would characterize it as observable.

MR. WILKINSON: Observable.

The Biological Opinion told us what would have to happen for that to occur, did it not? In other words --

MR. LECKY: We would have to have a monitoring program.

MR. WILKINSON: And the proposed Cachuma Project would have to be carried forward many years?

MR. LECKY: That's correct.

MR. WILKINSON: Has the Bureau's proposed project been fully implemented?

MR. LECKY: No.

MR. WILKINSON: In fact, it's only been three years since the Biological Opinion was issued; is that correct?

MR. LECKY: That's correct.

MR. WILKINSON: In fact, the Draft EIR/EIS for the Fish Management Plan was just recently issued?

MR. LECKY: That's correct.

MR. WILKINSON: And a number of the passage barrier removal projects and other elements of the Fish

Management Plan remain to be implemented?

MR. LECKY: That is correct.

H.O. SILVA: You have about ten minutes left.

MR. WILKINSON: Mr. Lecky, even before the Bureau's project is complete, even before we evaluate the success of the project, it is NOAA's recommendation that the Board order a study of an alternative that would reduce project yield by 45 percent?

MR. LECKY: I think we are just asking the Board to evaluate a broad set of issues and studies that might be needed to decide how those would weigh in their public trust considerations.

MR. WILKINSON: Mr. Lecky, your testimony also discussed this morning that difference between recovery and public trust; is that right?

MR. LECKY: I don't believe I -- well, maybe I did just mention public trust. Yes, I did.

MR. WILKINSON: Considering the public trust is part of the Board's responsibility; is it not?

MR. LECKY: It is the Board's responsibility, correct.

MR. WILKINSON: Isn't it also true that the guiding criteria, though, for the State Board is not the public trust, but the public interest?

MR. LECKY: I am not an expert on what the

Board does and how they weigh this.

MR. WILKINSON: Is it your understanding that the public trust uses, like all other uses of water, are subject to the reasonableness considerations of California law?

MR. LECKY: Yes.

MR. WILKINSON: Is it your understanding that the State Board may approve the diversion of water even though it may unavoidably harm public trust uses?

MR. LECKY: If its part of the balancing, I propose they do that.

MR. WILKINSON: Mr. Lecky, does NOAA support the use of surcharge at Lake Cachuma for fishery purposes?

MR. LECKY: Yes.

MR. WILKINSON: If Lake Cachuma is surcharged, additional water will be made available for fishery uses; is that correct?

MR. LECKY: That's correct.

MR. WILKINSON: Is my understanding correct that NOAA Fisheries is not asking the Board for a change in the flows required by the Biological Opinion?

MR. LECKY: That's correct.

MR. WILKINSON: In fact, NOAA supports the Biological Opinion?

MR. LECKY: Yes, we do.

MR. WILKINSON: Does NOAA also support the Fish Management Plan?

MR. LECKY: Yes.

MR. WILKINSON: You've heard testimony previously about the Settlement Agreement. Is NOAA opposed to the Settlement Agreement?

MR. LECKY: No.

MR. WILKINSON: In the testimony that was presented by NOAA was there any efforts by NOAA to balance competing beneficial uses of water?

MR. LECKY: No.

MR. WILKINSON: It is your understanding that the Board does have that obligation; is that right?

MR. LECKY: Yes.

MR. WILKINSON: Mr. Silva, I have finished my examination of Mr. Lecky. I've got some questions for other NOAA witnesses, however. And I'm wondering whether maybe now would be a good time to take the lunch break; is that possible? I think I have ten minutes. I suspect I have a little more than that.

H.O. SILVA: I counted 53; you have a minute 53.

MR. WILKINSON: I mean that I may have more than that left in our mind. I may have more than that left here. I am going to be asking for --

H.O. SILVA: How much more are you going to be asking for?

MR. WILKINSON: I suspect I've got a half an hour.

MR. CONANT: Mr. Silva, if it would help at all, I am prepared to yield part of my time to Mr. Wilkinson so he can complete his questions.

H.O. SILVA: Why don't we take a break now. Then I'll take that under advisement and come back to you.

Dana has something she wanted to hand out and comment for all of you before we break.

MS. DIFFERDING: If you recall, when the staff offered exhibits into evidence by reference, we had some unfinished business with staff Exhibit 10, which was the Draft EIR including the references. So what I have done is printed out a document. I'll leave it for you all to look at over the break. I have crossed out those exhibits that are not in our possession and that we do not intend to offer into evidence. With one exception, these will all remain references in the Draft EIR. It is that we are not offering them into evidence as exhibits. And I will formally offer them into evidence once you've all had an opportunity to review this. I will leave copies, I guess, probably just right here for people to pick up.

H.O. SILVA: With that, why don't we break and

come back promptly at 2:00.

(Luncheon break taken.)

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AFTERNOON SESSION

H.O. SILVA: Why don't you make your objection.

MR. KEIFER: I am going to object at this time to counsel's request for additional time. The hearing notice states that the Hearing Officer has discretion to allow additional time for cross-examination if there is a good cause demonstrated in an offer of proof, and I don't believe Mr. Wilkinson's desire for an extra 30 minutes constitutes good cause.

H.O. SILVA: Couple of things. I wanted to make sure Mr. Conant offered up some of his time. Is that true?

MR. CONANT: I did.

H.O. SILVA: Also, I just want to say that Mr. Wilkinson's questions have been appropriate. I think he has not gone over, in my view -- he is not repeating questions. So I am going to allow time. I think you want a half hour more?

MR. WILKINSON: I'm going to short cut this real quickly. One of the failings of lawyers, including this one, is they frequently don't know when to sit down

and shut up. So that is what I am going to do.

I've concluded my cross.

H.O. SILVA: You know what, objection sustained.

MR. KEIFER: Write that down.

H.O. SILVA: I like that. Maybe you should object more often.

MR. KEIFER: I didn't want to encourage him, Mr. Silva.

H.O. SILVA: Thank you for that.

Mr. Conant, you're next.

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CROSS-EXAMINATION OF NOAA FISHERIES

BY SANTA YNEZ RIVER WATER CONSERVATION DISTRICT

BY MR. CONANT

MR. CONANT: Ernest Conant for Santa Ynez River Water Conservation District. I just have a couple quick questions that I think will be directed to Mr. Capelli.

Mr. Capelli, in your testimony in part you rely on the legislative history leading up to the construction of the Cachuma Project, which I think is NOAA Exhibit 9, correct? I think it is referred to at Page 4 of your testimony.

MR. CAPELLI: Yes, that is correct.

MR. CONANT: I notice that a portion of the

legislative history that you appended as Exhibit 9 is missing. In particular views of the State of California; is that correct?

MR. CAPELLI: Yes.

MR. CONANT: In fact, the state did provide recommendations relative to this project that were included as part of the Congressional record; is that your understanding?

MR. CAPELLI: My understanding is there were some recommendations that were identified but not implemented.

MR. CONANT: At this time I would like to introduce Santa Ynez River Water Conservation District Exhibit No. -- I believe it is -- 5. It's next in order, And I will describe what it is in a moment.

Mr. Capelli, what I have given to you is a cover page which I think is part of your Exhibit 9. And then Page 1 is identified as Views and Recommendations of the State of California on Proposed Report of the Secretary of the Interior on the Cachuma Unit, Santa Barbara County Project, California, February 1948. And then following that is Page 17 which is the end of that report, entitled -- you'll see there about a third of the way down the page, entitled Recommendations. And then on the last page, Page 18, is a final recommendation.

Could you read that last recommendation that was offered by the State of California and signed by the State Engineer?

MR. CAPELLI: The one that is highlighted?

MR. CONANT: Yes.

MR. CAPELLi: It is recommended that because of the limited water supply available in the Santa Ynez River to meet the present and anticipated future domestic, municipal and irrigation requirements in the area dependent on that source of supply, no water from the Cachuma unit or other storage on the Santa Ynez River be dedicated to protection or propagation of fish life in that stream. Any release from such storage in interest of fish life should be on a temporary basis only and one which would result in no impairment of the water supply for higher uses, namely municipal, domestic and irrigation. (Reading)

MR. CONANT: Thank you.

That is all the questions I have, Mr. Silva.

H.O. SILVA: Thank you.

City of Lompoc?

MR. MOONEY: No questions.

H.O. SILVA: Is the City of Solvang here?

MR. CONANT: They are not here.

H.O. SILVA: They are not here anymore, my understanding.

Thank you.

The County, Santa Barbara County.

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CROSS-EXAMINATION OF NOAA FISHERIES

BY COUNTY OF SANTA BARBARA

BY MR. SELTZER

MR. SELTZER: Alan Seltzer for the County of Santa Barbara.

Initially, Mr. Lecky, your written testimony states on Page 2 that the Cachuma Project Biological Opinion, and I quote, does not balance competing public trust obligations; is that correct?

MR. LECKY: That is correct.

MR. SELTZER: Is it correct to state that the Biological Opinion did not take into account impacts on recreational resources of Lake Cachuma?

MR. LECKY: That's correct.

MR. SELTZER: The Biological Opinion also assumed that the impacts of a three-foot surcharge on the lake would be studied and evaluated by the Bureau and COMB

in their Environmental Impact Report and Statement for the Fish Management Plan Biological Opinion; is that correct?

MR. LECKY: That's true.

MR. SELTZER: Let me ask you this, then: If Reclamation and COMB were to agree to address impacts to recreational resources at the lake through a plan that allows a maximum of five years for relocation of critical park facilities before a three-foot surcharge and that during that interim period, so long as augmented flow releases for steelhead occur, as if there were a three-foot surcharge condition, wouldn't that plan be consistent with the intent of the Biological Opinion?

MR. LECKY: Yes, that I believe it would.

MR. SELTZER: For Mr. Wingert.

With respect to the recovery planning process. For Phase 1 and 2 recovery planning, does NOAA have any procedures to ensure that recreational resources at Lake Cachuma are considered in the investigation of steelhead passage to and spawning and rearing habitat above Bradbury Dam?

MR. WINGERT: I don't believe it would be considered during the Phase 1 one aspect of the recovery plan. But I do think that in Phase 2 that would be an issue that we would want to be considering. We'd have stakeholders involved that would be looking at ways to

achieve whatever the delisting criteria or viability criteria were, and to the extent that there were conflicts of the sort you are referring to, I think, we would expect there would be some assessment or evaluation of those by the Phase 2 planning process.

MR. SELTZER: That would include sportfishing at the lake?

MR. WINGERT: Yes.

MR. SELTZER: Thank you.

H.O. SILVA: Thank you.

Fish and Game?

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CROSS-EXAMINATION OF NOAA FISHERIES

BY DEPARTMENT OF FISH AND GAME

BY MR. BRANCH

MR. BRANCH: Good afternoon. Harllee Branch, staff counsel for Fish and Game. I would like to start with Mr. Wingert.

To your knowledge, when was NOAA Fisheries technical memorandum entitled Viable Salmonid Population and the Recovery of the Evolutionary Units published?

MR. WINGERT: I believe in 2000.

MR. BRANCH: Do you know what month.

MR. WINGERT: I am not positive. I believe it was June.

MR. BRANCH: When was the Lower Santa Ynez Fish Management Plan finalized?

MR. WINGERT: December 2000, I believe.

MR. BRANCH: Was it following the issuance of the NOAA Fisheries' memorandum I just mentioned?

MR. WINGERT: I believe so, but I am not certain.

MR. BRANCH: Do you know, to the best of your knowledge, if the Fish Management Plan was developed consistent with the NOAA Fisheries viable salmonid population conceptual framework?

MR. WINGERT: I would say no.

MR. BRANCH: Would it be possible to conduct the necessary field investigations and analysis identified in the NOAA Fisheries Viable Salmonid Population technical memorandum within the five-month period between the publication the VSP technical memo and the final publication of Fish Management Plan? That is a mouthful.

MR. WINGERT: I can see what you are saying. I would say no.

MR. BRANCH: Did the Fish Management Plan identify or attempt to identify independent steelhead populations within the Lower Santa Ynez River?

MR. WINGERT: Not to the best of my knowledge.

MR. BRANCH: According to your testimony, wouldn't that be a fundamental step in developing a scientifically sound and effective Fish Management Plan for the Santa Ynez River to ensure a viable run of steelhead in the Santa Ynez over the long term?

MR. WINGERT: Certainly I think a critical element of the federal ESA recovery planning. I don't know whether it necessarily is for a fisheries management plan.

MR. BRANCH: You discussed recovery planning in your testimony, correct?

MR. WINGERT: Correct.

MR. BRANCH: A recovery plan, say, for steelhead would cover the ESU as a whole?

MR. WINGERT: That's correct.

MR. BRANCH: Do you think it is reasonably possible that with implementation of a recovery plan for steelhead that you might, in fact, with the measures described recover the ESU as a whole without recovering the Santa Ynez run in and of itself?

MR. WINGERT: I don't think that I can answer. Be certainly presumptive of me to answer that question. But I think what I tried to say in my testimony is that I believe that the technical recovery team's analysis and evaluation would lead to viable population criteria and

ESU criteria, delisting criteria, if you will, will take a look at the historical distribution abundance as we know it for steelhead. And the closer the delisting criteria or viability criteria can match up with the historical distribution abundance, the greater assurance that they would be able to recover the population.

So I'm probably going on more than I should. It is a little difficult to answer, and I think that I would expect the technical recovery team to try to make a call as to how important the Santa Ynez is in that overall recovery system, inasmuch as it was historically important. It is a big river system. Seems that it would be likely important.

MR. BRANCH: To the best of your knowledge, are recovery plans prepared by NOAA Fisheries mandatory? Do they absolutely, legally require any action?

MR. WINGERT: The implementation, you mean?

MR. BRANCH: Yes.

MR. WINGERT: No.

MR. BRANCH: Is it foreseeable, then, that you could put a recovery plan in place that doesn't force any action at all on the Santa Ynez River in the operations, say, the Bureau's Cachuma Project?

MR. WINGERT: I would say generally yes, but I would imagine that if there were some actions that were

identified in the plan as being the responsibility of the Bureau of Reclamation, I suppose in the case of our Cachuma Project opinion, it could potentially reinitiate consultation. I suppose that is an option.

MR. BRANCH: Was one of the factors contributing to the decline of steelhead in the Southern California ESU and the subsequent listing and the loss of upstream habitat due to the blockage by dams?

MR. WINGERT: Absolutely.

MR. BRANCH: How important to the viability of the Santa Ynez River steelhead population was the construction of Bradbury in 1953?

MR. WINGERT: Well, it obviously blocked access to a significant amount of spawning and rearing habitat. So I would say that with what is left below Bradbury, we don't have much opportunity to have a very large viable population. I am not even certain how viable that population can be below the dam. That is about all I can say.

MR. BRANCH: Thank you.

Mr. Cluer or Dr. Cluer --

DR. CLUER: You can call ME Mr. Cluer.

MR. BRANCH: Mr. Cluer, how does channel morphology influence fish migratory opportunities for steelhead, to the best of your knowledge?

DR. CLUER: Well, that is a rather broad question, and I don't really want to give you a lengthy answer. So they are definitely connected.

You want to narrow it down a little bit?

MR. BRANCH: Will improvement in channel morphology create better migratory opportunities for steelhead?

DR. CLUER: Yes.

MR. BRANCH: To the best of your knowledge, does channel morphology influence other aspects of fish behavior in the lifestages of steelhead? And this is for you and anybody else on the panel who wants to check in.

DR. CLUER: Fish habitats are formed by geomorphic features within a channel. So the short answer is, yes, morphology influences all the lifestages of habitat, all lifestages have fish.

MR. BRANCH: In your opinion, what are the most important factors determining the geomorphology of the Lower Santa Ynez below Bradbury?

DR. CLUER: Two factors, at least two factors. There may be a third one I think we suggested to be looked at. But the first two factors are channel forming flows. The second one is sediment supply. And the third factor would be a combination of other anthropogenic influences, such as groundwater pumping, riparian removal,

channelization, just a whole host of anthropogenic influences that visit upon the lower Santa Ynez channel.

MR. BRANCH: In your opinion, to what extent is it possible to alter the influence of these factors that you described, some other way to transform the natural channel characteristics of the Lower Santa Ynez?

DR. CLUER: In my opinion, there is a lot of potential to change channel form and the function and, therefore, habitat downstream of Bradbury.

MR. BRANCH: Do you want to expand on that?

DR. CLUER: The sequence of flood flows, for example, will have dramatic effects on how riparian vegetation is established or not established. And I could go into great detail on that, if you like. But flood flows of certain magnitude, that being particularly the one assigned here, the current general flows, not the really big decade or century flood flows, but those that are visited on the channel more frequently are considered to be a channel forming flows. And I think in terms of fish habitat that means that those are the habitat forming flows as well.

Now for those flows to be effective, there has to be a sediment supply available for those flows to not only rework sediments and transport individual sediment particles downstream, but there has to be a new supply of

new particles from upstream to replace alternate bars or pool riffle complexes. So you can't have long-term viable fish habitat components without having both the proper sequence of flood flows and sediment supply to go with those flows.

MR. BRANCH: Now, as far as the main stem above Bradbury, what are the most important factors determining the geomorphology in that stretch of the Santa Ynez?

DR. CLUER: It is my understanding that the two other reservoirs, Juncal and Gibraltar, are trapping the coarse sediment load and have for many decades now. It is also my understanding that those facilities do not significantly alter the flood flow sequences in their magnitude nor timing. So the biggest influence would be the sediment supply being trapped in the reservoirs.

MR. BRANCH: What elements of the geomorphology of these middle reaches are conducive to fish utilization, in particular, adult and juvenile steelhead? And I will address to you and anybody else who wants to chip in on that.

DR. CLUER: What I have seen there in my field visits was well-formed pools and pool riffle complexes that would be suitable rearing, spawning habitat.

MR. BRANCH: Is access to tributaries with

perennial flow, physical diversity and cover integral to this part of the Santa Ynez River suitability for steelhead utilization?

DR. CLUER: It is our understanding that those tributaries are productive salmonid habitat. So access to them is integral.

MR. BRANCH: What is the role of periodic higher flood flows in channel formation or maintenance?

DR. CLUER: What magnitude of high you thinking of? Flood flows greater than an five- year --

MR. BRANCH: Address flood flows. What is the role of flood flows in channel formation?

DR. CLUER: If I understand your question, I think I already answered it, but I will try it again.

MR. BRANCH: If you answered it, don't do it again.

In your opinion, does groundwater extraction have a more profound effect on high or low flows or can it affect both significantly?

DR. CLUER: In my opinion, it would more profoundly affect low flows.

MR. BRANCH: Thank you, Mr. Cluer.

Mr. Capelli, some questions for you.

First of all, Mr. Conant showed you a document from the Department of the Interior. What was the date on that

document?

MR. CAPELLI: 1948.

MR. BRANCH: To the best of your knowledge, was this document put out before the California Supreme Court recognized the Public Trust Doctrine as it relates to fish?

MR. CAPELLI: I don't know the answer to that question.

MR. BRANCH: Mr. Capelli, you are the Southern California recovery coordinator --

MR. CAPELLI: Yes.

MR. BRANCH: -- for NOAA?

Would I be correct in saying that NOAA Fisheries wants the Board to require a number of studies on passage, habitat, instream flows, et cetera?

MR. CAPELLI: Yes, that's been our testimony.

MR. BRANCH: These studies will inform NOAA's steelhead recovery planning process; is that correct?

MR. CAPELLI: Those studies would provide information for both Board and NOAA Fisheries and Bureau and member agencies. It will be public information that would be available for all.

H.O. SILVA: Could you speak into the mike. Make sure you speak into the mike.

MR. BRANCH: Should I readdress the question?

The studies that NOAA Fisheries is asking for will inform NOAA steelhead recovery planning process, correct?

MR. CAPELLI: Yes.

MR. BRANCH: Why do you -- actually, why does NOAA Fisheries believe that the Board should require these studies instead of NOAA just conducting the studies on their own if it is part of their recovery planning process? And I will address that to the whole panel, other people can chip in.

MR. CAPELLI: Both the State Board and NOAA Fisheries are working under their own legal mandates. Our testimony has been to the effect that in order for the Board to have a fully informed decision making process with respect to public trust, it needs this kind of information regarding steelhead habitat, utilization, so on.

MR. BRANCH: Now I actually already addressed this question to Mr. Wingert about the mandatory nature of recovery planning process. Does NOAA Fisheries need the Board to require certain measures, certain studies, as part of its recovery planning process? Actually, it sounds like I already asked and answered that question.

Why would NOAA Fisheries not just wait until a recovery plan was in place to petition the Board to reopen the permits to put measures in place? Again, I will

address this to anybody who wants to answer it.

MR. LECKY: Quite frankly, they might say no. And I think asking the Board to retain jurisdiction over this and revisit it on a regular basis as we learn provides, in my view, an open process to get full consideration of information on a timely basis. And I think that is the question we want the Board to deal with, is are we doing the best we can to satisfy public trust obligations and do good things for steelhead trout.

If we come to -- put it this way: If we come to them and petition them, that is a much different question that we are asking them. We think that we really are challenged by a lack of information in this system. We think there is a lot we have to do, and that these studies are really important to make progress. We think some of these studies will directly inform a wise decision on the best operation of the of Cachuma Project, in addition to contributing to recovery strategies, and we would like to just maintain that open process so that we can engage in more of an adaptive management scenario.

MR. BRANCH: Would I be correct in saying that NOAA Fisheries would prefer not to petition the Board reopen these permits when the time comes?

MR. LECKY: My sense is that is a more complicated process, and we would like to put it in place.

MR. BRANCH: Would NOAA Fisheries like to instead see the Board reopen these permits on their own motion on a date certain?

MR. LECKY: Yes. I think we would like to have a fixed schedule of revisiting, seeing how we are progressing.

MR. BRANCH: Earlier, under cross-examination by Mr. Wilkinson, there was a discussion regarding Alternative 3A2 under the Cachuma contract renewal with the EIS/EIR. There was a shortage in water deliveries that was identified.

Do you recall that.

MR. LECKY: Yes.

MR. BRANCH: Is there a way that that shortage can be mitigated, Mr. Lecky? Are their ways?

MR. LECKY: Yes. I think we frequently engage in those kinds of discussions. There are drought relief scenarios. We can provide conservation scenarios that might help offset the shortage events. There are tools that could be evaluated.

MR. BRANCH: In CCRB -- labeled CCRB Exhibit 250 -- there was on the second page of that I believe a number of alternatives that NOAA recommended for omission from consideration in the Fish Management Plan.

Do you recall that?

MR. LECKY: Yes. Most of them dealt with trapping and trucking.

MR. BRANCH: When was that letter drafted?

MR. LECKY: December 5th, 1997 is the date on it.

MR. BRANCH: That is almost six years ago, correct?

MR. LECKY: Right.

MR. BRANCH: Mr. Lecky, is it possible in your experience for government agencies to change their position on issues in the space of six years?

MR. LECKY: Yes, it is.

MR. BRANCH: Is this list of measures that were recommended for omission from consideration, is it NOAA's position now that these should forever be off the table as far as consideration or investigation?

MR. LECKY: No, it's not.

MR. BRANCH: Why is your position different now?

MR. LECKY: I think we've heard that the Santa Ynez was -- is a large river, one of the few that still has steelhead in it and expect it will be a big, important part of the overall recovery strategy, and there are issues and interest in looking to connect the lower river back up with the upper river where there is a lot more

spawning and rearing habitat available. What we have said back in '97 was we don't know enough about that. We even said that, I think, in precursor letters on the Biological Opinion, that we wanted to wait before we evaluated that.

And I think what we are proposing now is a set of studies to look at what are the fish up there and what is their genetic composition, how do they relate to the fish downstream, should we really consider mixing the, and if so what is the best strategy for doing it. Trapping and trucking is one strategy that should be evaluated.

MR. BRANCH: In what was labeled CCRB Exhibit No. 247, on the bottom of Page 3, the last sentence, if you'd take a look at that.

MR. LECKY: Can you help me with that?

MR. BRANCH: This was the October 7, 2003 letter.

MR. LECKY: I've got it.

MR. BRANCH: You and Mr. Wilkinson had an exchange, I believe, about the last sentence on this page.

MR. LECKY: Page 3?

MR. BRANCH: On Page 3, the last sentence. Have you have found that passage yet?

MR. LECKY: No.

MR. BRANCH: This is the sentence that analyzes alternatives, under the auspices of the SWRCB.

MR. LECKY: Uh-huh.

MR. BRANCH: In response to Mr. Wilkinson's question, you stated that peer review of fish passage investigation might be a good thing.

Do you recall that? Are you in the right place?

MR. LECKY: Yeah, we had discussion about independent consultation, independent consultants, and whether there might be alternatives to doing that.

MR. BRANCH: Again I'll ask, you stated in response to Mr. Wilkinson's question that peer review of fish passage investigation might be a positive thing, correct?

MR. LECKY: Yes.

MR. BRANCH: You said that using the Adaptive Management Committee would probably be a positive thing?

MR. LECKY: Yes.

MR. BRANCH: Do you also think that having the State Water Resources Control Board as an overseer of the process, setting deadlines, et cetera, would be a positive thing?

MR. LECKY: Yes, I do.

MR. BRANCH: I have no further questions.

H.O. SILVA: Thank you.

Cal Trout?

CROSS-EXAMINATION OF NOAA FISHERIES

BY CAL TROUT

BY MS. KRAUS

MS. KRAUS: Karen Kraus for Cal Trout.

Start with Mr. Lecky.

Would it be possible to modify flows for steelhead without affecting flood control operations?

MR. LECKY: I don't know. That is a pretty broad scenario. I suppose there might be some in there.

MS. KRAUS: Wouldn't any proposal to modify flows for steelhead address all impacts, including impacts to flood control? Would impacts to flood control be something that a study regarding steelhead flow requirements could consider?

MR. LECKY: It could consider that, yes.

MS. KRAUS: Isn't it true that many of the reservoirs on the Sacramento River system are operated for multiple uses, including water supplies, flood control and fisheries?

MR. LECKY: That's true.

MS. KRAUS: Aren't these good examples, then, of how competing interests can be accommodated in dam operations?

MR. LECKY: I believe so.

MS. KRAUS: Mr. Lecky, do you know is there

currently a requirement that studies conducted by the Adaptive Management Committee be independently peer reviewed?

MR. LECKY: I am not aware of that requirement.

MS. KRAUS: Going back for a moment to the questions that were raised about Alternative 3A2. Does NOAA Fisheries have any basis to know whether water deliveries as described -- I'm sorry. Let me start that over.

Does NOAA Fisheries have any basis to know whether water deliveries will, in fact, be reduced by 45 percent if Alternative 3A2 is implemented?

MR. LECKY: I don't believe so. We really just recommended that alternative be considered to fully evaluate its effects on beneficial uses and fishery resources and provide -- essentially assure a broad suite of alternatives being considered, as I think CEQA requires the state to do.

MS. KRAUS: Are you aware that Alternative 3A2 in the contract renewal document requires the flow schedule identified there every year, whether or not it is a dry year or wet year or normal year?

MR. LECKY: No.

MS. KRAUS: Assuming that it does, in fact,

require those same flows every year. If 3A2 were modified to reduce flows during dry years, would you expect that to reduce any impacts to water supplies?

MR. LECKY: That would be a mechanism to reduce impacts.

MS. KRAUS: Mr. Lecky, are you aware that the Settlement Agreement between the water agencies that was raised to your earlier --

MR. LECKY: Yes.

MS. KRAUS: Are aware that that agreement relies on imported state water being released into the lower river to improve groundwater quality for downstream users?

MR. LECKY: I know that it has that measure in it, yes.

MS. KRAUS: Are you aware that up to 50 percent of lower river flows during the summer rearing period -- I will start that over.

Are you aware that of that state water being released, it could be up to 50 percent of the lower river flows during the summer rearing period when juveniles imprint on home waters?

MR. LECKY: Yes.

MS. KRAUS: Are you aware of any scientific studies or biological information that supports the use of

50 percent foreign water during an imprinting period for juvenile steelhead?

MR. LECKY: No, I'm not.

MS. KRAUS: Returning now to the letter that Mr. Wilkinson provided you, NOAA Fisheries' October 7, 2003 comment on the Draft EIR to Mr. Fecko.

MR. LECKY: Okay.

MS. KRAUS: As I heard your responses, you stated to MR. Wilkinson that the BO included a mechanism to carry out some of the studies that were identified in this letter?

MR. LECKY: Yes.

MS. KRAUS: Could you identify which those studies are required by the Biological Opinion?

MR. LECKY: I believe there is a requirement to look at spawning and rearing habitat assessments. There are -- I don't remember if fish passage is a required study or a conservation recommendation. It is identified as a conservation recommendation. It is not required.

Fish flows to support migration spawning and rearing habitat I think would come under the umbrella of the monitoring effectiveness of the flows that are in place. Certainly -- I think that is it.

MS. KRAUS: When you say that's it, those

studies you have identified?

MR. LECKY: The other studies in this letter are not covered by those recommendations -- by the requirement of the Biological Opinion.

MS. KRAUS: Thank you.

Mr. Mann, you testified today that you thought fish studies regarding fish passage should begin to be studied now or as soon as possible.

Is this still your position?

MR. MANN: Yes. Given the length of time that it can take, might as well begin now and lead off with what's already been done or at least initially in the Fish Management Plan.

MS. KRAUS: Thank you.

Mr. Wingert, as I understand from NOAA Fisheries testimony, the purpose of the ESA Section 7 consultation process, which in this case culminated in the September 7th Biological Opinion, was to determine whether operation of the Cachuma Project was likely to jeopardize the continued existence of the Southern California steelhead ESU; is that correct?

MR. WINGERT: Generally true. The consultation addressed the proposed actions, so that included project operations, also some lower tributary habitat fixes, things that were in the Fish Management Plan.

MS. KRAUS: And the conclusions as stated in the Biological Opinion was that operation of the Cachuma Project for project operations as proposed were not likely to jeopardize the continued existence of the Southern California steelhead ESU; is that correct?

MR. WINGERT: Correct.

MS. KRAUS: As I understand it, then, NOAA Fisheries' conclusion in the Biological Opinion is premised on the Bureau's implementing operations of the Cachuma Project in the manner described in the BO; is that correct?

MR. WINGERT: That's correct.

MS. KRAUS: And it is also premised on the Bureau's ongoing compliance with the reasonable and prudent measures identified in the BO and the terms and conditions that exempt the Bureau from the ESA take prohibitions; is that correct?

MR WINGERT: Yes.

MS. KRAUS: So if the Bureau does not implement the project in the manner described in the BO or does not comply with the reasonable and prudent measure or term of condition, NOAA Fisheries' conclusion of the operation of the project operations would not jeopardize steelhead in the Santa Ynez would no longer been supportable; is that correct?

MR. WINGERT: When we initiate consultation, we make that judgment to determine whether the nonjeopardy determination was still basically valid.

MS. KRAUS: Is it NOAA Fisheries' opinion that compliance with the Biological Opinion guarantees that steelhead in the Santa Ynez River would not go extinct?

MR. WINGERT: I am not sure I can answer that question.

MS. KRAUS: Did NOAA Fisheries conclude in this Biological Opinion that the measures identified in the BO would restore the Santa Ynez River population to a point it is viable and self-sustaining?

MR. WINGERT: No, I wouldn't say we made that conclusion.

MS. KRAUS: I would like to direct your attention to a letter that's already been submitted as Cal Trout Exhibit 1. This is a letter from Rebecca Lent to Harry Schueller.

Are you familiar with this letter, Mr. Wingert?

MR. WINGERT: Yes.

MS. KRAUS: This letter describes the relationship between that Biological Opinion and the State Water Board's decision regarding measures necessary to protect public trust; isn't that correct?

MR. WINGERT: Yes.

MS. KRAUS: According to this letter, and I direct your attention to Page 5, put a star next to the area I think is relevant here. According to this letter, does the BO address the issue of what river condition, either above or below Bradbury Dam, must be restored or maintained to achieve restoration of the steelhead runs of the Santa Ynez River?

MR. WINGERT: Not specifically, no.

MS. KRAUS: Thank you.

Mr. Lecky, in NOAA Fisheries' opinion, does the Biological Opinion protect the public trust interest in steelhead located below Bradbury Dam?

MR. LECKY: It doesn't address that issue.

MS. KRAUS: Does the BO protect the public trust interest located above Bradbury Dam?

MR. LECKY: It doesn't address that issue either.

MS. KRAUSE: Does the BO fit any specific provision for steelhead above Bradbury Dam, including their ability to migrate to the ocean?

MR. LECKY: It only includes conservation recommendation on restoring -- to study restoring connectivity.

MS. KRAUS: Does the BO include any specific provision or ability for steelhead below the dam to access

spawning and rearing habitat above the dam?

MR. LECKY: Only that conservation recommendation.

MS. KRAUS: Are there deadlines for implementation of the conservation recommendations?

MR. LECKY: No, there are not.

MS. KRAUS: Is implementation of conservation recommendations required to avoid jeopardy to steelhead?

MR. LECKY: No.

MS. KRAUS: Why not?

MR. LECKY: Conservation recommendations are potentially voluntary actions to do a number of things. Improve our basic level of knowledge, maybe even further mitigate take or impacts below the level they have already been mitigated to. But essentially they are -- and they also are in place to advise the federal agency on how they might contribute to conservation or recovery of a species.

MS. KRAUS: Thank you.

Is it NOAA Fisheries' opinion that implementation of the conservation recommendations may be necessary to restore steelhead runs in the Santa Ynez River?

MR. LECKY: I'm sorry, repeat that.

MS. KRAUS: Actually I will rephrase it slightly. Is it NOAA Fisheries' opinion that implementation of the conservation recommendations may be

necessary to facilitate the restoration of steelhead runs in the Santa Ynez River?

MR. LECKY: I think, as we tried to point out here, we have an expectation that the upper river is probably going to turn out to be important, and there are studies underway now that will inform that view, and we are looking to our technical recovery team to give us advice on how important that will be. And at the end of the day it may be that we need to restore use of the upper river by steelhead in order to have a recovered population.

MS. KRAUS: Thank you.

Back to Mr. Wingert.

Regarding instream flow requirements for the lower river in the BO. They are identified as, quote, target flows. I am wondering what the term "target" means here. Does it mean that the Bureau has to shoot for these amounts?

MR. WINGERT: I am not sure I can really answer that. I think it was the Bureau's proposal. But basically I think that's -- that's, I think, the view. Aim for that target and let's do the best we can to hit it. Probably recognizing it is not that easy to specifically meter things out and measure that accurately or know for sure what you have to release to achieve that

target given the variety of conditions that might exist.

MS. KRAUS: The target flow are really just goals to be met, sounds like?

MR. WINGERT: Probably wouldn't go so far as to downgrade it that much. I think it is try to hit that target and let's monitor it and see what it takes to -- if we have to adjust it to either release more or release less, over achieving that target, then you would do that.

MS. KRAUS: In carrying out -- NOAA Fisheries carrying out its obligation under the Endangered Species Act, what is NOAA Fisheries' ultimate goal for recovery of the Southern California steelhead ESU?

MR. WINGERT: That is a pretty general question, but I guess it would be to achieve basically a self-sustaining, naturally reproducing ESU that is viable for the foreseeable future and, therefore, would be delistable.

MS. KRAUS: Will recovery of this ESU then mean that the public will be able to utilize the Santa Ynez River as a recreational fishery for steelhead?

MR. WINGERT: Certainly would hope that that is a goal of the plan, yes.

MS. KRAUS: How many steelhead ESUs are there for West Coast steelhead?

MR. WINGERT: Take me a while to add them up.

There are six in California? I want to stay 15, 14 or 15.

MS. KRAUS: Of those how many has NOAA Fisheries issued a final recovery plan for?

MR. WINGERT: None of them.

MS. KRAUS: When were these ESUs listed?

MR. WINGERT: First listing would have occurred in 1997. Some occurred subsequent to that. I don't believe that the most recent one was probably the Northern California Coast steelhead here in California, obviously, which was in 2000. I think they were all listed between 1997 and 2000.

MS. KRAUS: Does the Endangered Species Act have a deadline to complete a recovery plan?

MR. WINGERT: No, it does not.

MS. KRAUS: Once a recovery plan is complete, is NOAA Fisheries required to implement the provisions in the plan?

MR. WINGERT: No.

MS. KRAUS: Would the Bureau be required to implement the plan?

MR. WINGERT: I anticipate the plan would identify a lot of agencies that are responsible for various actions that are recommended in the plan. And I would imagine that if there was some action that modified or required some modification of Cachuma Project

operations, that would probably trigger some kind of reinitiation of the consultation. And, therefore, they might be required to make some change.

MS. KRAUS: They might be required to make a change, but if consultation was reinitiated?

MR. WINGERT: Yes.

MS. KRAUS: If consultation was not reinitiated, would the Bureau be required to implement --

MR. WINGERT: Any measure that is in the plan and there is an agency that is identified, whether it is the Bureau or anybody else, there is no requirement under the statute that those actions be implemented. It would require, I think, some -- something like Section 7 to be a forcing tool basically to make that happen.

MS. KRAUS: Mr. Mann, you testified earlier about the effective height of Bradbury Dam and hydraulic height. From a total lift perspective, which of these is most relevant to fish passage?

MR. WILKINSON: Excuse me, I think that testimony was stricken from the record.

H.O. SILVA: Yes, it was. You shouldn't ask.

MS. KRAUS: Can I ask what the effective height is at this point, then, as a relevant question under cross?

H.O. SILVA: No, I don't think so. It wasn't

in his testimony.

MS. KRAUS: I understood that I could ask any relevant question on cross-examination.

MR. WILKINSON: It seems this does go beyond his testimony that we all had on which we cross-examined. Since that testimony was stricken, I don't think there is any basis to ask any cross-examination questions on it.

H.O. SILVA: Give me a second here.

MR. KEIFER: Mr. Silva, I believe the standard in the hearing notice is relevance, and that there is a great deal of latitude granted to cross-examination. And the question for you to examine is whether or not her question for Mr. Mann is relevant to the understanding that the Board needs and not whether it was beyond Mr. Mann's written testimony.

H.O. SILVA: I guess -- where are you going with this? I guess, you can answer if it is not going to get into some kind of testimony about detailed fish ladders or that kind of thing. I think it's okay. I will let you go.

MS. KRAUS: I don't think I will be.

What is the effective height of Bradbury Dam?

MR. MANN: It has a range basically from 160 feet up to a 190 feet, maybe 200, depending on how you measure from the tailwater elevation up to the normal

water surface elevation of the reservoir, which would be important for determining analysis of fish passage.

MS. KRAUS: Do you know what the hydraulic height of Bradbury Dam is?

MR. MANN: It is listed at 190 feet. That is from the stream bed access of the dam up to the normal water surface elevation of the lake.

MS. KRAUS: From a total lift perspective, then, which of these is most relevant to fish passage?

MR. MANN: That would be generally the maximum lift, 190 feet.

MS. KRAUS: Which is the hydraulic height that I asked you about.

MR. MANN: Yes.

MS. KRAUS: Thank you.

You testified earlier that a study should be designed and implemented to evaluate passage for steelhead. Is it helpful to have milestones associated with a study of this nature?

MR. MANN: Yes, I believe so.

MS. KRAUS: Mr. Wingert, are you familiar with the downstream water rights releases that occur from Bradbury Dam for downstream users?

MR. WINGERT: Generally.

MS. KRAUS: Given what you know, could

modifying the downstream water rights release schedule further avoid or further minimize adverse effects to steelhead?

MR. WILKINSON: Excuse me, I don't believe this was the subject of anybody's testimony for NOAA Fisheries. MS. KRAUS: I'm sorry, as I understand the --

H.O. SILVA: I will allow it. If you want to answer, it is up to you.

MR. WINGERT: I am not sure I can answer it. Basically, I'm not sure you can answer that question.

MS. KRAUS: Mr. Wingert, is a population size of less than 100 adults a viable population on a river system -- on a river the size of the Santa Ynez?

MR. WINGERT: I wouldn't think so, no.

MS. KRAUS: Is it large enough to provide environmental variation of magnitudes that have been observed in the past?

MR. WINGERT: I wouldn't think so.

MS. KRAUS: Is it large enough to provide resilience to environmental perpetuation?

MR. WINGERT: I wouldn't think so.

MS. KRAUS: Is it sufficiently large to maintain its genetic diversity over the long term?

MR. WINGERT: No, I wouldn't think so.

MS. KRAUS: Is it sufficiently abundant to provide important ecological function in all of the environments it occupies?

MR. WINGERT: I am not sure I quite understand that. I'd probably say no, also.

H.O. SILVA: If you understood it, you'd say no.

MS. KRAUS: How would NOAA Fisheries quantitatively measure habitat improvement in order to evaluate whether or not a management action is successful?

MR. WINGERT: I am not the right person to answer.

MS. KRAUS: Is there anyone on the panel who might?

Is that no?

MR. CAPELLI: Would you repeat the question?

MS. KRAUS: How would NOAA Fisheries quantitatively measure habitat improvements in order to evaluate whether or not a management action is successful?

MR. CAPELLI: It might begin setting forth what the habitat characteristics should be. For example, what the pool riffle ratio should be or what the average pool depth should be, what the canopy cover for returning habitat should be. And then measure those particular parameters in response to the management actions that you

take and see if, in fact, you create those conditions that you set out as appropriate to support the life history stages of fish.

MS. KRAUS: Would there be temporal aspects to the criteria you set?

MR. CAPELLI: I am not quite sure I understand.

MS. KRAUS: Would you look for certain habitat improvements to occur within a certain period of time?

MR. CAPELLI: You could set a time frame up or you expect certain responses in a certain amount of time. That might be an artificial construct if you are talking about how long you expect these habitat conditions to persist. That is not so much an artificial construct so I am not sure the time frame, what kind of time frame you are referring to.

MS. KRAUS: Mr. Lecky, the Bureau has testified or pointed out that the Biological Opinion includes a statement that the proposed project is likely to appreciably increase the likelihood of survival and recovery of the ESU by increasing its number and distribution.

Are you familiar where that statement?

MR. LECKY: Yes, I am.

MS. KRAUS: Does the BO indicate the magnitude

of the projected increase in steelhead numbers?

MR. LECKY: No, it doesn't.

MS. KRAUS: Do you know whether the projected increase in numbers was expressed in absolute terms as a percentage or in any other quantitative way?

MR. LECKY: No, it wasn't.

MS. KRAUS: In fact, doesn't the BO state that the information available on population numbers and distribution does not allow accurate quantification of the expected project effects on steelhead?

MR. LECKY: I believe that is true?

MS. KRAUS: So the conclusion of the proposed project will increase numbers and distribution of steelhead is not actually supported by any quantity assessment of the project effects on steelhead population; is that correct?

MR. LECKY: Right; it is a qualitative view.

MS. KRAUS: Thank you.

I have no further questions.

H.O. SILVA: Thank you.

That completes cross. Do you have any redirect -- I'm sorry, staff. I always forget my staff.

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CROSS-EXAMINATION OF NOAA FISHERIES

BY BOARD STAFF

MR. FECKO: Just a few for the panel. Actually, probably Mr. Lecky would be the one to start with.

NOAA Fisheries' letter to the Board, actually to me, on October 7th, 2003, Page 4, bullet 5 there, you ask us to analyze and evaluate 3A2 which is part of the Cachuma Project contract renewal EIR.

Are you familiar with how the flows in that alternative were derived?

MR. LECKY: No, I am not.

MR. FECKO: Is anyone on the panel familiar with how they arrived at the flow recommendations in 3A2?

Thanks.

H.O. SILVA: That's it. Okay.

Now, any redirect?

MR. KEIFER: May I take a moment to confer with the panel?

H.O. SILVA: Sure.

MR. KEIFER: We have no redirect.

H.O. SILVA: What I want to do now is I want to take care of the County. My understanding is that there has been an agreement between the County and Member Units.

MR. SELTZER: We will need about ten minutes for a panel which I'd just have them affirm their testimony and hand out the agreement to the various parties.

H.O. SILVA: While you're coming up, on the exhibits for NOAA, what you have right now.

MR. KEIFER: I actually was intending to take care of all our exhibits at the conclusion of our case in chief after Dr. Li goes tomorrow, if that is acceptable to the Board.

H.O. SILVA: That is fine. I forgot about that.

Why don't we come to order and get started with the County now.

Mr. Seltzer.

MR. SELTZER: Thank you.

Mr. Silva, my name is Alan Seltzer. I am the Chief Assistant County Counsel for the County of Santa Barbara.

First, I would like to thank the panel again for allowing Supervisor Marshall to complete her testimony out of order. And as the testimony of Supervisor Marshall emphasized, the County supports three major public policies goals at stake in this proceeding: ensuring a reliable water supply, protecting endangered species and protecting public trust, recreational resources at Lake

Cachuma and the river.

As the manager of public trust recreational activities occurring on and around Lake Cachuma, the County has appeared in these Phase 2 proceedings to specifically address hearing Issues 3 and 7, and more particularly, first, whether the proposed surcharge of the lake to revise fish release requirements would adversely affect public trust recreational resources at the lake and, second, the measures necessary to protect those recreational resources.

The written testimony of the County's witnesses demonstrate that a three-foot surcharge of the lake to elevation 753 feet would damage critical water treatment facilities and accessory facilities essential for public health and safety, and that an interim surcharge to 751.8 feet would prevent use of the boat launch ramp, a facility essential for persons to have the opportunity to recreate on the lake. The main purpose why persons visit the lake and recreation area.

The County's testimony originally recommended a phased surcharge of the lake from the existing 750.75 feet to 751.8 after two years and subsequently to the full 753 after five years. This phased surcharge would have allowed for the development, funding and implementation of a facility relocation plan prior to surcharge and would

have provided an initial two-year period to modify the boat launch facilities and a subsequent three-year period in which to modify essential water treatment and accessory facilities. That was our original proposal.

But as Supervisor Marshall's testimony also made very clear, the County believes that local solutions that bring together concerned governmental agencies are most effective in balancing competing public policies, achieving resolution and serving the public interest. And for this reason the County accepted the invitation of CCRB, ID Improvement District No. 1 and the Bureau to continue ongoing discussions to identify means to address adverse or potentially adverse impacts to recreational facilities at the Lake Cachuma county park from the proposed surcharge of the lake. And our panel has moved to this -- what was anticipated to be a final time slot in hope that such a resolution would be possible.

Over the past two weeks, the County, CCRB and ID No. 1 have engaged in further discussions on how best to effectively and fairly balance the interest affected by the implementation of the proposed surcharge of Lake Cachuma for fish rearing and passage releases. And these efforts have resulted in a Statement of Agreement between the County, CCRB and Improvement District No. 1 for presentation to your Board, which I will ask that you mark

as County's Exhibit No. 11.

As Park Director Terri Maus will confirm, the Board of Supervisors has approved Exhibit 11 as has CCRB and ID No. 1. Through this agreement the County, CCRB and ID No. 1 have identified a local solution to allow for critical park facility modifications before a three-foot surcharge to elevation 753 feet; that is, we have agreed that modification of the Cachuma operations manual, project's manual, to provide a no surcharge above 751.8 feet elevation, except for winter storm operations, shall occur for five years or until completion of relocation of the water treatment plant and accessory facilities, whichever occurs first, that this measure is the appropriate measure to address potential impacts to recreational resources at the lake from the proposed surcharge of the lake.

In addition, we have agreed to help make park facility relocation a reality. CCRB and ID No. 1 have agreed to assist the County in obtaining a long-term land management agreement with the Bureau and to support efforts to obtain funding from state and federal governments for relocation of the water treatment plant and other facilities within the lease area. The Member Units and ID No. 1 have also agreed to work with the County to identify an alternative water treatment plant project that ID No. 1 may install for the County with

funding and reimbursement to be agreed upon by the parties. In return the County has worked with the Member Units to identify an interim main boat launch project with shared funding mechanisms to raise the ramp to elevation 751.8 feet or higher by April 1 of 2004, thus accommodating a 1.8-foot surcharge this spring of the lake without affecting public recreational opportunities at the lake.

The Statement of Agreement demonstrates that the County, Improvement District No. 1, the Cachuma Project Member Units and the Bureau can best serve the public when we cooperate at the local level in managing public trust resources and balancing major public policy issues as stated in this proceeding. It is our hope and belief that these discussions which have resulted in this Statement of Agreement have also resulted in a renewed partnership in accomplishing the goals of providing a reliable water supply, protecting the endangered steelhead and ensuring that there is no disruption to the public's access to recreational opportunities at the lake.

Now I have requested that you mark the statement agreement as County's Exhibit No. 11 and ask leave to direct questions to the panel, brief questions, that go beyond the scope of the written testimony to address this Statement of Agreement.

H.O. SILVA: I guess rather, does anybody have any questions or why don't we just go through the list.

Bureau, do you have -- you are part of the agreement.

Do you want to say anything, Member Units?

MR. WILKINSON: Simply to confirm Mr. Seltzer's statements that this was the product of a lot of work over the last couple of weeks. And just to simply say that, in essence, what we are doing here is providing for immediate surcharge to 1.8. We are deferring the three-foot surcharge without altering any of the flows that are required under the Biological Opinion. So in effect we take the risk if we hit a three-foot surcharge and we can't use it. They take the risk that the 1.8 will occur this year. And we certainly have no objections to their testifying about the Statement of Agreement.

H.O. SILVA: Santa Ynez?

MR. CONANT: No.

H.O. SILVA: City of Lompoc?

MR. MOONEY: No questions.

H.O. SILVA: Fish and Game?

MR. BRANCH: No questions.

H.O. SILVA: NOAA?

MR. KEIFER: Not at this time.

H.O. SILVA: Thank you.

Cal Trout you had --

MS. KRAUS: Just a couple.

MR. SELTZER: Mr. Silva, perhaps if I could just complete our direct testimony.

H.O. SILVA: Apologize. Why don't we -- I shouldn't have let you go through that first. I apologize.

MR. SELTZER: I just have very few questions. First witness is Terri Maus-Nisich.

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DIRECT EXAMINATION OF COUNTY OF SANTA BARBARA

BY MR. SELTZER

MR. SELTZER: Ms. Maus, is County Exhibit 3 a true and correct statement of your testimony?

MS. MAUS-NISICH: Yes, it is.

MR. SELTZER: Is County's Exhibit 10, a true and correct copy of the County's PowerPoint presentation accompanying your testimony and the testimony of Coleen Lund?

MS. MAUS-NISICH: Yes, it is.

MR. SELTZER: Is the information depicted on Exhibit 10 accurate?

MS. MAUS-NISICH: Yes.

MR. SELTZER: And is County's Exhibit 11 a true and correct Statement of Agreement between the

County, CCRB and ID 1 for presentation to the State Water Resources Control Board approved by the County of Santa Barbara Board of Supervisors, CCRB and ID No. 1?

MS. MAUS-NISICH: Yes, it is.

MR. SELTZER: Will the actions provided by the Statement of Agreement address concerns raised by the County regarding the effects of surcharge on recreational resources at the County park at Lake Cachuma?

MS. MAUS-NISICH: Yes, I believe it does. If I could expand just a bit, however. I do want to mention that as our counsel mentioned, there has been a significant amount of work down on behalf of all the agencies over the last several weeks. And I wanted to take an opportunity to thank the Board and all of the agencies hear for delaying our testimony so that we might have that opportunity to sit down and reach this agreement. And I believe that it does open the door, most definitely, to address for all the agencies, as part of this, all of our interim concerns and further discussions on our long-term issues.

I think it is a wonderful first or additional step in terms of getting all the issues out. However, we still have a lot of work to do to complete the MOU. I very much appreciate everybody allowing us the opportunity. It's been very beneficial for all of us.

MR. SELTZER: Ms. Maus, are you familiar with the testimony of Eric Flavell?

MS. MAUS-NISICH: Yes, I am.

MR. SELTZER: Is Exhibit 5 of the County's submitted testimony and exhibits a true and correct statement of his testimony?

MS. MAUS-NISICH: Yes, it is.

MR. SELTZER: Our next witness is Coleen Lund. Ms. Lund, is Exhibit 4 of County submittal a true and correct statement of your testimony?

MS. LUND: Yes, it is.

MR. SELTZER: Our next witness is Mr. Almy. Mr. Almy, is County's Exhibit 6 a true and correct statement of your testimony?

MR. ALMY: Yes, it is.

MR. SELTZER: Is County's Exhibit 8 a true and correct copy of the report of modified storm operations for the Bradbury Dam which you prepared for the County water agency?

MR. ALMY: Yes, is.

MR. SELTZER: Is Exhibit 9 of the County's submittal a true and correct copy of the February 2003 Santa Barbara County water supply and demand update prepared for the County water agency?

MR. ALMY: Yes, it is.

MR. SELTZER: I have one last question. Back to Ms. Maus.

Is Exhibit 7 of the County submittal a true and correct copy of the Lake Cachuma surge analysis preliminary report prepared for the parks department dated December 2000?

MS. MAUS-NISICH: Yes, it is.

MR. SELTZER: At this point, Mr. Silva, in light of the Statement of Agreement, the County would rest its presentation and make its witnesses available for cross-examination.

H.O. SILVA: Thank you.

Cal Trout you can go now, and I apologize.

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CROSS-EXAMINATION OF COUNTY OF SANTA BARBARA

BY CAL TROUT

BY MS. KRAUS

MS. KRAUS: I just have a couple questions regarding the agreement, so I will just put it to the panel because I am not sure who to specifically address it to.

The surcharge has been identified as causing both recreational and biological impacts and the County has submitted concerns about both recreational and biological impacts. The Statement of Agreement addresses relocation

of the facilities.

How does the agreement affect impacts to biological resources?

MS. MAUS-NISICH: At this point in time the Agreement specifically discusses our intent to look at the impact to the facilities. It does not discuss any impact to the biological resources.

MS. KRAUS: So at this time there is no final agreement that avoids or mitigates impacts to the biological resources?

MS. MAUS-NISICH: All of our discussions presented -- is presented specifically focuses on the facility.

MS. KRAUS: Thank you.

Mr. Almy, I had a couple questions about your written testimony.

In your testimony, beginning on Page 4, you discuss an estimate of the cost of replacing water if the surcharge is not in place, assuming a total volume of 9,200 acre-feet, as I understand it. Your estimate's based on the cost of delivering State Water Project water through Cachuma Reservoir; is that correct?

MR. ALMY: That is correct.

MS. KRAUS: Does your estimate of the replacement cost consider the cost of water conservation

measures that could be used as an alternative to purchasing State Water Project water?

MR. ALMY: In order to keep the testimony simple, I used state water because its cost are relatively well understood.

MS. KRAUS: So your testimony is limited specifically to the cost of State Water Project water?

MR. ALMY: That's correct.

MS. KRAUS: And there are other possible sources of water, including water conservation, that could be considered as part of that?

MR. ALMY: I didn't discuss any of that in my testimony.

MS. KRAUS: Is it possible that those other -- that there are other sources of water supplies including increasing conservation measures that could be used potentially as an alternative?

MR. SELTZER: Your Honor, I would have to object because it goes beyond the scope of his direct testimony.

H.O. SILVA: I think that is okay. We allowed -- it can go beyond.

MR. ALMY: There are many sources of water supply, you are correct.

MS. KRAUS: Thank you.

That is all I have.

H.O. SILVA: Do any other parties have any questions because I went out of turn?

MR. PALMER: No questions by the Bureau.

MR. WILKINSON: No questions by the Member Units.

H.O. SILVA: I see shakes in the back of the room.

Any redirect?

MR. SELTZER: No. In that case, your Honor, the County would rest its case in chief and move into evidence the County Exhibits 1 through 11.

H.O. SILVA: Thank you.

Evidence accepted. We have to say that to make it official.

I would like to take a 15-minute break, come back and start exactly at 3:35. And, again, what I want to get done today is get Cal Trout's direct testimony completed. We need to do -- get the cross for Dr. Moyle by today because he won't be available tomorrow. So let's try to accomplish all of that the rest of the afternoon. We may have to stay to about six, 6:30, depending on how the cross goes. Let's try to get that done today. Again, 3:35.

(Break taken.)

H.O. SILVA: Let's get settled in.

I'm sorry, Ms. Krause. I apologize. I keep doing that to you and the County for some reason or another. The County has a question about their issues here.

MR. SELTZER: County Exhibit 11, the Statement of Agreement, calls for the development of a memorandum of understanding between the County, CCRB and ID No. 1. We would ask that the record be left open so that we could submit, hopefully with our closing argument, that MOU anticipated by the Statement of Agreement.

H.O. SILVA: That would be fine.

MS. DIFFERDING: Are there any objections to that?

H.O. SILVA: Hearing none, I think we are okay.

MR. SELTZER: Thank you.

H.O. SILVA: Now Ms. Krause. Again, I apologize.

MS. KRAUS: Good afternoon, Mr. Silva and Board staff. My name is Karen Kraus, and I am counsel for Cal Trout.

Cal Trout's participation in these proceedings focused on public trust resources in the Santa Ynez River, particularly steelhead. This reflects Cal Trout's mission to protect and restore wild trout and the steelhead and

their waters in California. What we are here to advocate for are the needs of steelhead and other public trust resources. We also recognize that the Cachuma Project is an important source of water for urban and agricultural users in Santa Barbara County. Our belief is that the Cachuma Project can and should be managed for the maximum benefit of all users of Santa Ynez water, including steelhead.

Historically this has not been the approach. Since its inception, the choice has been made to operate the Cachuma Project to maximize consumptive uses of the Santa Ynez without regard to the impacts to steelhead and other instream users. The impact of these decisions on the steelhead population has been dramatic and far greater than anyone projected at the time of the project authorization. Once one of the largest runs in Southern California, the Santa Ynez steelhead has been driven to the brink of extinction.

This is a direct result of the historic decisions regarding the Cachuma Project and the outdated perspective that consumptive uses of water are necessarily a higher priority than public trust uses. The Supreme Court of California has made it clear that this perspective no longer has a place here. The public trust must be taken into account and public trust uses must be protected

whenever feasible.

In carrying out its responsibility to protect public trust uses, the Board has a duty of continuing supervision. The Board is not limited by past allocation decisions which may be incorrect in light of new information or current needs. This is true even if a past decision considered public trust resources. But the need to reconsider a past decision is even greater when that decision failed to weigh and consider public trust uses.

It is within this legal framework that Cal Trout presents its case in chief. And what we intend to convey through our testimony and through our cross-examination of other parties is the following:

First, the management actions identified in the Fish Management Plan are not adequate to protect the public trust uses of the Santa Ynez River. Cal Trout's testimony will describe some of the specific shortcomings of these management actions. For example, the instream flow provisions in the plan are not predicted to provide sufficient flow in the lower river to restore and maintain quality habitat for all lifestages of steelhead. The plan also fails to give any serious consideration to the implementation of passage for steelhead around Bradbury Dam. In addition, the Fish Management Plan assumes that downstream water rights releases will continue in

essentially the same manner that they have historically been implemented, notwithstanding that these release are known to cause significant adverse impacts to steelhead.

Lastly, the plan's management actions are premised on an adaptive management approach. However, the plan does not identify measurable performance objectives or success criteria by which to evaluate the effects these actions have on steelhead population and habitat.

NOAA Fisheries Biological Opinion, which evaluates the management actions in the Fish Management Plan, concludes their implementation is not likely to jeopardize the continued existence of the Southern California steelhead ESU. This phrase has a specific meaning under the Endangered Species Act. All that it means is that the Cachuma Project will not make things worse for an already endangered species. The Board's responsibility is not simply to make sure things do not get any worse for the Santa Ynez steelhead, but to protect the public interest in steelhead and other public trust resources.

The public interest in steelhead includes an interest in the preservation of the watershed so that it functions as a healthy, sustainable ecological unit. It also includes an interest in restoring the recreational fishery that existed on the Santa Ynez prior to construction of Bradbury Dam. The measures in the Fish

Management Plan and the Biological Opinion do not protect either of these interests.

Cal Trout's second main point addresses the suggestion by some parties here that the management actions identified in the plan, in the Fish Management Plan, and the Biological Opinion may be sufficient as interim measures until NOAA Fisheries completes its recovery planning process. We agree that the Board should be cognizant of the federal recovery plan process. The Board should revisit the Cachuma Project permits once the recovery plan is complete. And the Board should incorporate the measures identified in that plan into the Cachuma Project permits. The federal recovery planning process does not, however, discharge the Board's current obligation to consider measures necessary to protect public trust resources and to implement those measures now if feasible.

NOAA Fisheries recovery plan will not be finalized for many years. In fact, there is no way to be certain when it will be finished as there is no mandatory deadline for completing a recovery plan. For this reason, it is imperative that the Board consider as part of these proceedings a full range of measures to protect steelhead now, and that the Board require the strongest measures possible in the interim until the recovery plan is

complete.

Cal Trout's testimony will identify instream flow measures that will provide greater benefits to steelhead than the measures described in the Biological Opinion and in the Fish Management Plan. Cal Trout's instream flow measures were evaluated in the Bureau's 1995 Cachuma contract renewal EIR. And out of 18 possible alternatives, these measures were identified in the final document as providing the greatest benefit to steelhead below the dam and as having the greatest likelihood of resulting in a self-sustaining steelhead population. Cal Trout recommends that these flow measures be implemented in the interim.

Cal Trout's testimony will also demonstrate that implementation of the instream flow measures identified in Alternative 3A2 is feasible, and that impacts to water supplies can be avoided or minimized. Cal Trout will show that up to 7,000 additional acre-feet of water per year could potentially be realized through just a handful of conservation measures, and the cost of these measures is comparable to the cost of water from Cachuma. These conservation measures are just a starting point. A more detailed analysis of a broader range of conservation measures, both urban and agricultural, would identify the potential for even greater water savings.

Water supply impacts could also be minimized even further by modification to the current downstream water rights release schedule. Currently water that otherwise would be released for steelhead and other public trust resources is stored in Cachuma Reservoir and released at the request of Santa Ynez parent district. We have heard testimony that approximately 16,000 acre-feet of water is being held in the reservoir for the sole benefit of downstream users, and that it is going to stay there for now because the downstream users have not called for its release.

The existing permits require that water be managed this way for the benefit of urban and agricultural users below Bradbury Dam. But the decision behind these permit requirements gave no consideration to whether alternative management approaches could also benefit steelhead below the dam. A comprehensive study of potential modifications to the downstream water rights release schedule is, therefore, warranted to determine whether benefits to both consumptive and instream users below Bradbury Dam can be more effectively maximized.

Cal Trout's third and final main point is that we are not here to try to persuade the Board that Cal Trout has all the answers. In fact, part of our purpose here is to highlight for the Board the areas in which we believe

additional information is necessary. I have just mentioned the need for a comprehensive study of conservation measures, as well as a study of possible modifications to the downstream water rights release schedule.

In addition, Cal Trout recommends that the Board direct focused field studies to monitor the relationship between flow and habitat for each lifestage of the steelhead. Such studies will be necessary to verify the success or failure of whatever interim flow measures are adopted by the Board in these proceedings. And they will provide further information regarding the measures that are necessary to protect steelhead and maintain steelhead in good condition. These studies should use best scientific practices for determining habitat flow relationships. They should be subjected to independent peer review, and it should be overseen by the State Water Board.

Cal Trout is also here to highlight that the issue of passage around Bradbury Dam has been sorely neglected and that continuing to put off a comprehensive study of the feasibility of fish passage is not consistent with the Board's obligation to give full consideration to the measures necessary to protect public trust uses. There is no question that Bradbury Dam prevents steelhead below the

dam from accessing the majority of spawning and rearing habitat in the Santa Ynez Watershed. There is no question that the dam significantly impairs the ability of landlocked steelhead to migrate to the ocean.

You've heard from the Department of Fish and Game and NOAA Fisheries that passage around Bradbury is important to restoring the steelhead population in the Santa Ynez River. You will hear similar testimony from Cal Trout. Cal Trout will also identify for the Board several technically feasible methods of fish passage around Bradbury Dam. And a comprehensive study of these methods should not be put off any longer.

In conclusion, I would like to take up an analogy made by Mr. Branch of the Department of Fish and Game. Mr. Branch compared the Fish Management Plan and the Biological Opinion to a vehicle that needs some additional parts and fuel. This is definitely true. From Cal Trout's vantage it appears that what this vehicle also needs is a new direction. That direction must come from the State Water Board. Cal Trout appreciates the effort that the Bureau, the water agencies, the Department of Fish and Game and NOAA Fisheries have put in following through on the Board's orders from 1995. But the fact is that each of these parties as well as Cal Trout has its own particular mission and own legitimate perspective on

how the Cachuma Project should be operated. Only the State Water Board has the authority and the responsibility to consider each of those perspectives and ensure that the Cachuma Project is operated to protect public trust resources whenever feasible. Cal Trout respectfully requests that the Board exert its strong influence over these proceedings by evaluating and requiring measures that can be implemented now to protect steelhead in the Santa Ynez River by directing and overseeing the additional studies necessary to inform the Board's future decisions regarding steelhead and by affirmatively reexamining the project permit condition as these studies are completed and as other information becomes available.

Finally, Cal Trout would like to assure the Board that we are mindful of the costs involved here and the costs of operating the Cachuma Project. We ask that the Board also keep in mind one question. What is the cost, what is the value, of the last Santa Ynez steelhead?

That is all I have for my opening statement. A couple procedural points. Linda Krop, my colleague, will be joining me at the table, and Cal Trout witnesses have not been sworn in.

(Oath administered by H.O. Silva.)

MS. KRAUS: We'll be starting with Mr. Jim Edmondson.

H.O. SILVA: Please speak into the microphone.

MS. KRAUS: Be starting with Mr. Jim Edmondson. And one quick procedural item from Mr. Edmondson's testimony, we have a corrected copy of his PowerPoint presentation originally identified as Cal Trout Exhibit No. 95.

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DIRECT EXAMINATION OF CAL TROUT

BY MS. KRAUS

MS. KRAUS: Mr. Edmondson, while they are passing out the hard copies, can you briefly explain the nature of your corrections?

MR. EDMONDSON: Yes, ma'am. It is to bring my PowerPoint summary presentation into conformity with CT-90, my written testimony.

MS. KRAUS: Thank you.

Mr. Edmondson, can you affirm that Cal Trout Exhibit No. 90 is a true and correct copy of your written testimony?

MR. EDMONDSON: Yes, I can.

MS. KRAUS: Will you affirm that Cal Trout Exhibit 91 is a true and correct copy of your statement of qualifications?

MR. EDMONDSON: Yes, I can.

MS. KRAUS: Will you affirm that Cal Trout

Exhibit 95 is a true and correct copy of the corrected copy of your PowerPoint presentation?

MR. EDMONDSON: Yes, I can.

MS. KRAUS: Thank you.

MR. EDMONDSON: Good afternoon, Mr. Silva, State Water Board staff. My name is Jim Edmondson. I am an employee of California Trout, Incorporated, a nonprofit fishery organization dedicated to the protection and restoration of wild trout and native steelhead in their habitat throughout California.

Over the course of the past 20 years my experience includes several activities analogous to the matter before you today, including those dealing with Mono Lake, the East Walker River and Bear Creek water rights proceedings, as well as working with your staff to successfully resolve both the North Fork Feather Rock Creek Crest and Santa Ana River No. 1 Federal Energy Regulatory Commission relicensing activities.

In terms of my knowledge and experience regarding Southern California steelhead, currently I serve as a Southern California representative on both the Citizens Advisory Committee to the California Legislature on Salmon and Steelhead as well as a member of the California Coastal Salmon Recovery Program Advisory Committee. In addition, I am cofounder and chairman of Southern

California Steelhead Coalition. This coalition is dedicated to the recovery of steelhead in Southern California, representing 225,000 Californians and over 1,000,000 Americans nationwide as members of the organizations 36 groups.

I am not here to testify as an expert, and as I have from prior experience, trust you will provide the appropriate weight to my testimony as you deem appropriate.

A summary of my testimony focuses on four elements. First, a perspective of the Santa Ynez River fishery abundance, its watershed functions and its sportfishing qualities and fishing prior to the construction of the Cachuma Project. Secondly, the preplanning project undertaken to authorize the Cachuma Project. Third, two Cachuma Project terminations, including the initial project authorization in 1948 and subsequent 1995 action to renew the project's contract through a certified Environmental Impact statement/Environmental Impact Report, and finally to offer a set of recommendations in response to your prior hearing notice.

Historic accounts describing the Santa Ynez River steelhead abundance began in the 1940s. These estimates, as you heard previously today, occurred after the construction of the Gibraltar Reservoir, which precluded

steelhead access to major portions of the Upper Santa Ynez Watershed. I am unaware of any agency or peer review document which estimates steelhead abundance prior to the 1940s.

Even with Gibraltar Dam preventing steelhead from fully utilizing the upper most portions of the watershed, pre-Cachuma Project estimates were provided by a number of agencies which determine that the Santa Ynez was perhaps the most abundant of all Southern California rivers with runs of adult fish ranging from 13,000 to 20,000 adults and averaging 20,000. These reports were relied on in the 1940s as a technical basis for the Cachuma Project authorization by the United States Congress. And some five decades later provided a scientific and technical basis of abundance for the listing of Southern California steelhead as an endangered species under the federal Endangered Species Act.

Turning our attention to how steelhead utilized the river prior to the project. Southern California steelhead, including those in the Santa Ynez River, are considered a winter-run population. Winter storms with high flows were generally considered necessary -- high flows being high stream flows -- were generally considered necessary to breach the sandbar at the river's mouth, as discussed previously by Mr. Hanson, in order to afford

steelhead entrance to the lagoon and then the river to fulfill their spawning run needs. These runs occurred, depending on weather conditions, from as early as December to mid April.

The major portions of this steelhead run spawned above the current site of the Cachuma Project. Yet the lower river did provide an important function as a migration corridor to tributaries and to the upper portions of the watershed above Cachuma.

This 1943 Santa Barbara County Department of Public Works photograph provides an illustration of this river function as a migration corridor. I have not be able to locate a photograph of the Upper Santa Ynez Watershed from 1943. Nevertheless, as this 2002 photograph illustrates, I believe this is reasonably what steelhead would expect to see. Moreover, as 2002 was amongst the driest years ever recorded in Southern California, the quality and quantity of habitat depicted in this photograph may have been greater.

To assist the Bureau of Reclamation with Cachuma Project planning, predecessor of the California Department of Fish and Game, known as the California Division of Fish and Game, and the United States Fish and Wildlife Service developed a number of reports and studies. These describe preproject fishery and developed a list of measures to

sustain that fishery. These reports were ultimately incorporated into the Secretary of Interior's 1948 letter to Congress in part on behalf of the Bureau of Reclamation to seek, and ultimately gain, Congressional project approval.

In the Service's report, which was included in the letter to Congress, the Service estimated the amount of the watershed's spawning and rearing habitat that would become unavailable to steelhead with the construction of the Cachuma Project was estimated at approximately two-thirds.

To conclude my initial segment of my testimony, I would like to speak to something near and dear to those who support California trout; that is, the preproject sport fishery. Historic accounts, as described in the aforementioned 1948 letter to Congress, described the quality of fishing in the Santa Ynez River. The agency reported -- these agencies reported during the steelhead fishing season fishing was, quote-unquote, splendid and, quote-unquote, fine angling. And in the letter to Congress which included those reports and those statements, the Bureau acknowledged that this fishery that existed prior to the project was of, quote-unquote, considerable importance.

The quality of historic steelhead fishery from a

angler's perspective has been described in several written accounts. These accounts indicate the Santa Ynez was the, quote-unquote, most productive of all steelhead rivers in Southern California with, quote, several winter-runs of steelhead taken in, quote, great numbers with bag limit catches between late December until the season closed at the end of February. And splendid steelhead, up to ten pounds were being caught.

Moreover, these written accounts also describe steelhead angling in the Santa Ynez taking place from surf fishing at the river's mouth to boats using a mile-long lagoon and within the lower river where the steelhead winter steelhead fishing was permitted. Statistics complied by the California Division of Fish and Game for Santa Barbara County, 1941 to 1943, determined thousands of anglers frequented the area, with the majority using the Santa Ynez River.

Those anglers, however, who pursued Santa Ynez River steelhead are included in these statistics and could not be segregated out by the California Division of Fish and Game. Nevertheless, this was a popular fishery.

If I could turn my testimony now to the Cachuma Project planning. In the Cachuma Dam or Project planning process in 1948 the Bureau stated that "the section of the Santa Ynez River below the dam is insufficient to support

the present steelhead population." The Bureau consulted with both the U.S. Fish & Wildlife Service to determine both the project steelhead fishery impacts and recommendations to maintain that preproject fishery. The United States Fish and Wildlife Service determined that its June 1945 report that particular impacts on the need for fishing protection throughout the watershed was necessary to maintain that fishery. The Service stated that the proposed dam height would not allow for functional fish ways, and, thus, to maintain the historic steelhead run maintenance efforts should be attempted in a portion of the river below the dam.

The bullet points in this slide are just some of those recommended by the U.S. Fish and Wildlife Service, including instream flows below the dam, some manner of trap and transfer of steelhead above the dam, the downstream water rights releases to benefit fish where possible and one-time discussions of a steelhead hatchery and screening outlets.

Well, all of those things somehow got lost. To gain Congressional approval for the Cachuma Project, the Secretary of Interior on behalf of the Bureau filed its report with Congress. While the Bureau recognized the importance of maintaining the pre-Cachuma Project steelhead resources, on April 1st, 1948, they recommended

discarding the entire list that the U.S. Fish and Wildlife Service had suggested for fish maintenance recommendations for the purposes, in part, because of water needs for irrigation and municipal uses took exclusive priority.

Nevertheless, the Bureau did state, and I quote, every effort will be made to provide water and to operate the Cachuma Reservoir as to maintain the existing spawning grounds below the proposed Cachuma Dam, end quote.

In the letter to Congress the Service concluded that without the implementation of these fish maintenance actions, the proposed project would result in a loss of approximately 50 percent of the steelhead abundance or population as a result of the Cachuma Project. The Bureau did not dispute this loss estimate in the Secretary of Interior's letter to Congress for project authorization.

Some 47 years later, on December the 12th, 1995, the Bureau produced a Final Environmental Impact Statement and Report for the Cachuma Project contract renewal. The EIS/EIR goal was to conduct a comprehensive environmental analysis of the Cachuma Project as a basis for renewing long-term water contracts with Cachuma Project members. The project purpose included, quote, to continue the operation of the Cachuma Project for the beneficial uses with a reasonable balance among competing demand, and going on, including existing project contractors,

downstream water rights holders, fish and wildlife and recreation. This EIS/EIR developed 18 alternatives, and they were compared in this document.

One of those alternatives, Alternative 3A2, which, along with several others, were technically based on a Department of Water Resources instream flow incremental methodology through the PHABSIM phase, was identified as having the greatest benefit to no steelhead below the dam. And I quote, in general, of all of the alternatives not screened out, Alternative 3A2 in combination with additional enhancement measures discussed, specifically augmentation, has the greatest likelihood of resulting in a self-sustaining steelhead population of significantly greater numbers than now exist in the Santa Ynez River, end quote.

Although Alternative 3A2 was identified as the, quote-unquote, biologically preferred superior alternative, it was dismissed due to purported, quote, significant reductions in water supply, which is the primary purpose of this project -- Strike that -- which is the primary purpose of the project, end quote.

Thus, although the stated purpose of the project was to strike a reasonable balance among competing needs, the Bureau's ultimate prioritization of water supply to its Member Units and in its ultimate selection, therefore,

what it ultimately selected as its contract preferred alternative, operations of the project largely unchanged.

Therefore, it is my opinion the Bureau's 1995 balancing decision through the contract renewal process was simply a revocation of its prior 1948 project authorization that water supply, in the Bureau's opinion was more important than those of public trust uses. Shortly after the Bureau's 1995 balancing decision, Southern California steelhead, including those few that still remained in the Santa Ynez, were listed under the Endangered Species Act as an endangered species. According to NOAA Fisheries, steelhead had dwindled to a population numbering once in the thousands to approximately 100 adults, or 1 or 2 percent of the steelhead population abundance the Bureau predicted in 1948 would survive once the Cachuma Project was constructed without fishery maintenance measures.

I congratulate the Bureau for their recent stewardship working with local water interests to develop the Lower Santa Ynez River Management Plan, and I appreciate the Bureau's commitment to the Biological Opinion provided by NOAA Fisheries. Yet, these documents are not designed to restore the river's biological integrity nor to restore a fishable river. These documents do not identify a discernible management

structure with success criteria for myself or this Board to judge if and when public trust resources are progressing towards success, much less success itself.

Therefore, I offer the following set of five recommendations for the Board's consideration. Based on the foregoing and in response to the State Water Resources Control Board's hearing notice, I offer the following five recommendations. I believe measures can be implemented that will restore steelhead to the Santa Ynez River. And that this can be done in a manner that balances public trust and other beneficial uses. The comprehensive refinancing struck by the State Water Resources Control Board in D-1631, WR 98-05 and WR 98-07 orders provide a basis for my opinion. Cal Trout expert witnesses will identify measures that are capable of restoring steelhead and will describe how the potential impacts of these measures on other beneficial water uses can be minimized in a feasible and reasonable manner to achieve the maximum beneficial use of water.

Accordingly, the first recommendation is that the Cachuma Project permit should be modified to protect steelhead as a public trust resource. Specifically, measures should be implemented now that are capable of restoring that public trust of steelhead in the Santa Ynez and that are capable of restoring and maintaining fish in

good condition.

Second recommendation is that the contract renewal EIS/EIR 3A2 flows which, as I mentioned, were based upon an IFIM PHABSIM and range from five to 48 cfs to provide for all steelhead life cycles are a superior alternative and warrant your attention.

As identified in CT 91, the statement of my qualifications, I have previously provided the State Water Board with hydraulic modeling simulations. I believe the Board accepted those hydraulic simulations, and I believe the Board found them of value. Accordingly, I conducted a calculation, which I attached as Exhibit 1 of my written testimony, of one potential implementation of Alternative 3A2 over the long term, except incorporating certain other assumptions and measures than those found in the 1995 EIS/EIR. According to the State Water Resources Control Board Draft Environmental Impact Report, implementation of your proposed Alternative 3A would require on average approximately 2,600 acre-feet of water and would not result in significant unmitigatable impacts.

California Trout's water conservation experts have determined that it is reasonable and feasible to save from 5- to 7,000 acre-feet annually with the use of existing and proven water conservation measures and technology. Thus, when I add 5,000 to 2,600 that, in my mind, provides

a basis to implement 3A2 without having any additional impacts than initially considered in the Draft Environmental Impact Report.

MS. KRAUS: Mr. Edmondson, time is growing short.

MR. EDMONDSON: As previously stated, Cal Trout does not profess to have all the answers. However, our 32-year history and experience leads me to state the following: To do more sometimes means requiring we need to know more. Accordingly, I urge the Board to require the Bureau beyond the provisions of the Biological Opinion, to incorporate into its permit the studies that have previously been discussed by NOAA Fisheries and the California Department of Fish and Game. In addition, as recommendation number four, I urge the Board to support an adaptive management plan or program with measurable success criteria and a schedule to achieve these criteria, and that such a program should be implemented into the permits of the Bureau. As a model for such a process, I believe the Board's involvement in a CalFed -- strike that -- in the Battle Creek salmon and steelhead restoration project's Draft Environmental Impact Report/Impact Statement provides an excellent basis for that consideration.

And finally, as we learned from the Mono

proceedings, ecosystem restoration is a lengthy process, sometimes taking many decades. A review of the permit conditions by the Board and such milestones as the release of new studies or the pending recovery plan or other milestones identified in the final Adaptive Management Program seems necessary to serve -- for the Board to serve as, Mr. Branch's, word the fair broker and steward of a recovery public trust resources for the Santa Ynez River.

That concludes my testimony.

MS. KRAUS: Thank you, Mr. Edmondson.

Cal Trout's next witness will be Dr. Peter Moyle.

DR. MOYLE: Mr. Silva and staff --

MS. KRAUS: Dr. Moyle, before you begin, one procedural item. Can you affirm that Cal Trout Exhibit 70 is a true and correct copy of your written testimony?

DR. MOYLE: Yes.

MS. KRAUS: Can you affirm that Cal Trout Exhibit 71 is true and correct copy of your statement of qualifications?

DR. MOYLE: Yes.

MS. KRAUS: Thank you.

DR. MOYLE: Mr. Silva and staff --

MR. PALMER: Excuse me, if I could, Mr. Silva. I would like to enter for the record an objection to Dr. Moyle's testimony on the grounds, one, it is not

relevant because his testimony does not relate in any way to the Santa Ynez River or the Cachuma Project. And, two, that I don't see anything about Fish and Game Code 5937 or good condition in the key issues for this hearing. So it is not relevant in that manner. It is not helpful testimony to the trier of fact, doesn't go to any particular issue before the Board.

MS. KRAUS: May I respond?

H.O. SILVA: Hold on a second.

Go ahead.

MS. KRAUS: With respect to the question of relevance, CCRB and ID No. 1 had Jean Baldridge testify regarding Dr. Moyle's definition of good conditions. So I think that relevance is established there. And I think that it would be extremely useful for the Board to hear directly from the author of that definition what that definition means.

Regarding 5937, the Board has stated clearly in several orders that Section 5937 is a legislative expression of the public trust doctrine and will be considered in public trustee decisions.

H.O. SILVA: I want to overrule the objection. Permit the testimony. Objection noted.

DR. MOYLE: Thank you.

My name is Peter Moyle. I am a professor of

fisheries biology at the University of California at Davis. My general area of expertise is the ecology and conservation of freshwater and anadromous fish, such as steelhead, especially in California. And a significant portion of my research is focused on regulated streams and on the impacts of dams, diversions and other transfers on fish population. I will say right from the outset that I don't have any personal experience working on the Santa Ynez River, aside from complying information on that river system and its fishes in my latest book, Inland Fishes of California, which was published last year by the University of California Press.

My expertise on the meaning of the term "good condition," as in Section 5937 of the Fish and Game Code, stems initially from my years of research on the ecology of fishes in California streams, much of which was aimed at trying to find ways to improve conditions for those fish. My research has dealt with fish at all ecological levels, from individuals to populations to communities to ecosystems, trying to really find -- develop conservation strategies.

My expertise on 5937 specifically stems from work I did as an expert witness at a trial in 1996 over the increasing flows of Putah Creek, a stream that flows past the campus on which I work in Davis. And our goal was to

increase flows to benefit the native fishes, which were in decline. I had been studying the fishes of that stream for nearly 20 years at that time, and so developed knowledge about the conditions that would favor both the desired fish and fisheries. This allowed me to develop a detailed definition of what, in my expert opinion was meant by fish in good condition. The Fish and Game Code 5937 was a key factor in this, resulting in the successful outcome of the trial in which the judge awarded flows for fish down Putah Creek from the Solano Water Project. And the judgment was not appealed, suggesting that the definition seemed to be valid.

Following the trial, I published a peer reviewed paper on the outcome that included a discussion of my definition of good condition. That paper was published in the Journal of Fisheries of the American Fishery Society and is part of the materials I submitted for this trial, for this hearing. And the sections I am going to talk about essentially summarize the contents of this paper as well as the testimony I gave at the original trial.

Section 5937 of the Fish and Game Code reads as follows, says: The owner of any dam shall allow sufficient water at all times to pass through a fishway or, in the absence of fishway, allow sufficient water to pass over, around or through the dam to keep fish in good

condition -- excuse me, to keep in good condition any fish that may be planted or exist below the dam.

Good condition was not defined in the section, but use of the phrase "any fish" strongly suggested that Section 5937 was really meant to be applied broadly to all fish species that depended on the stream for their existence, including anadromous fish such as steelhead.

The next major event in this history of 5937 was really in 1993 when Darrel Wong, a biologist from California Department of Fish and Game, developed a definition of good condition for a hearing of the State Water Resources Control Board. And this definition was focused on a single species, the brown trout, which was present in Rush Creek, a stream on the east side of the Sierras. And basically he stated that fish in good condition meant that the stream contained fish in good physical health for the population age structure that indicated the population was large and self-sustaining. He also stated that under this definition maintaining fish in good condition required a stream with high, quote-unquote, ecological health.

I used Mr. Wong's definition as a starting place for the definition I developed for a stream that contained many species of fish, as opposed to just one. Well, because Putah Creek supported over 20 species of fish,

including the anadromous chinook salmon and Pacific lamprey, I developed a definition of good condition which encompassed the Fish and Game definition, but would also protect an unusual assemblage or community of native fishes, fisheries or non-native game fishes that were in the lower reaches of the stream and for the anadromous fishes.

This definition put good condition at three consecutive levels: the individual, the population and the community. And to satisfy Section 5937 of a fish being in good condition below a dam, a fish has to be in good condition at all three levels. At the individual level, fish in good condition need to be healthy. This means they have to be relatively free of diseases and parasites, have a robust appearance, have a growth rate suitable for the region, not stunted or things of this nature. They should respond in appropriate manner to stimuli. They could avoid predators, for example, such as anglers.

If water releases from dams are unfavorable, that is it is too warm, too turbid or too low, it is likely the individuals of a fish will be underweight, suffer from outbreaks of parasitic infections or be more susceptible to predators, especially non-native predators, such as large mouth bass, or they can even die of stress-related disease.

At the population level, to be in good condition under my and Mr. Wong's definition, each population must be made up of healthy individuals, as indicated in the previous section, and have multiple age classes, which is evidence of successful reproduction and recruitment, also have a viable population size, a population that is self-sustaining. A viable population size is really one that is large enough so it will not go extinct from random factors or unusual events, such as a major drought.

And steelhead in the Santa Ynez River are part of the Southern California ESU that has been listed as endangered under the federal Endangered Species Act, which means they are a population considered to have a high risk of extinction in the near future. The fact they are listed strongly suggests the population is not in good condition at the population level. Determination of the actual viable population size for a species using required extensive study of the demographic characteristics, such as age structure, but a reasonable surrogate for an actual population estimate from a good condition point of view is the presence of extensive for all life history stages along stretches of stream.

Thus, in Putah Creek, I determined that most of the native fishes were not in good condition because their population existed only in a very short section of stream

below the dam into which water was released, many to satisfy riparian right holders in the reach immediately below that dam. And in that reach habitat was basically limited in quantity and quality.

At the community level good condition under my definition means that a dynamic assemblage of fish exists that will predictably inhabit a given range of environmental conditions. In other words, you can go out there and find it year after year under those conditions, and usually it is in the historic range as existed on a year on the site prior to construction of the dam.

Thus, a fish community in good condition is one that overall is dominated by species that are co-evolved. That means that's where they have lived for thousands, if not millions, of years as a predictable structure as indicated by very limited overlap in the niches of these fish among the species and the presence of multiple levels in the food web.

It also should be very resilient in recovering from extreme events. That is why size of the population is important and length of the habitat. It also has to be persistent in species membership through time and should be replicated geographically.

Because the Santa Ynez River contains only two to seven species of fish over most its length, this community

level definition of good condition may be less important than for streams with more complex communities. The species that were present historically were steelhead. Probably the most abundant fish in the reach we are talking about. Three-spine stickle back, Pacific lamprey, prickly sculpin, tidewater gobies, striped mullets, staghorn sculpin. With the latter three found primarily in the estuary or lagoon.

It is only likely that the four species occurred on a regular basis in the river above the estuary and with the number of species coming progressively smaller in an upstream direction. So steelhead were presumably the principal, if not the only species, in headwater streams, and likely the most abundant fish for waters that were permanent and summer temperatures remained cool.

Overall, under my definition, for an individual fish to be in good condition, it has to be a healthy individual that is part of a self-sustaining population that is an interacting part of the community of fish species with similar characteristics.

Thank you.

MS. KRAUS: Dr. Moyle I have couple follow-up questions for you.

DR. MOYLE: Sure.

MS. KRAUS: The community level of your

definition that you just discussed, would that include species other than fish?

DR. MOYLE: Yes, it could. It could easily include invertebrates, frogs and so forth. I have actually used it that way in some studies I have been doing where I have incorporated amphibians into my definition of the stream community.

MS. KRAUS: Thank you.

One last question. You discussed the use of habitat availability as a surrogate indicator at the population level of your definition?

DR. MOYLE: Yes.

MS. KRAUS: When you evaluate habitat availability, do you look at the present potential for habitat, or do you consider historically what habitat was utilized?

DR. MOYLE: The best way to answer that is with Putah Creek. We look at what the existing habitat was prior to the time we got the flows, and from that we essentially knew we could determine what was good habitat for Putah Creek because all these fish were there in a very limited area. But then we looked at the rest of the creek and saw what the potential was, where the habitat was degraded because of the inadequate water, not enough riparian vegetation and so forth. So it was a combination

of looking at both the present and the potential habitat.

MS. KRAUS: Thank you.

At this time Cal Trout would like introduce Mr. Tom Keegan. We have a couple procedural items to take care of for Mr. Keegan. He will be using a PowerPoint presentation, and we would like to submit this as Cal Trout's Exhibit CT 32. And Mr. Keegan also has a corrected copy of his written testimony.

While these are being handed out, Mr. Keegan, can you briefly explain the nature of the corrections in the corrected copy of your written testimony?

MR. KEEGAN: Yes, I can provide that. I had submitted to Cal Trout my written testimony based on what I was asked to provide, which was a review of environmental documentation for these water right modification proceedings here. And in doing so, I had -- I was asked to specifically look at steelhead issues relative to the proposed -- to the current project and also look at issues how steelhead might be improved, specifically the 3A2 alternative.

And when I did write my testimony, I sent it off to Cal Trout to just make sure that I had covered all my issues that I was asked to look at. In so doing, I had made a statement, and it was on Page 12 of my original testimony, that was outside the scope actually of what I

was asked to do, which was specifically look at steelhead. And I made a statement regarding beneficial uses related to public trust issues. And they sent me a note saying that was outside of my scope, that remained inside the testimony. So I just want to clear that up. I removed that, and that is what you're receiving now. There are also a couple of typographical errors. I don't know if you want me to go into those or not.

MS. KRAUS: No.

MR. KEEGAN: That is the extent of that.

MS. KRAUS: Thank you.

Go ahead and begin your testimony. And, Mr. Silva, we talked earlier that Mr. Keegan would be taking approximately 30 minutes, but we still won't exceed our total, the two-hour time frame. You had indicated that would be okay. I just wanted to double-check and make sure.

MR. WILKINSON: I've got a question, Mr. Silva. We saw the reference not excluded from the earlier graph in Mr. Keegan's testimony about the opinion being outside the scope of his opinion. But it looks like the same statement appears in the revised version. So my question is: Is it still outside the scope of his opinion or not?

MR. KEEGAN: Thank you for bringing that up.

That comment actually referred to the statement that was in there, not in the statement that you have in my original testimony.

MS. KRAUS: I think I can clarify. The bracketed statement remained, but the statements the bracketed statement was directed at was removed.

MR. KEEGAN: My word processing skills.

MS. KRAUS: In the earlier version. So the corrected copy, the statement that is in that, the statement outside the scope of your opinion was not directed at that statement.

MR. KEEGAN: Correct.

MS. KRAUS: This is getting complicated.

MR. WILKINSON: I really don't understand.

MS. KRAUS: I think I can clarify. The only thing that was in the first version that should not have been was the bracketed portion, and that has been deleted.

H.O. SILVA: What page are you talking about?

MR. KEEGAN: Page 12.

MS. KRAUS: Page 12 in the Section entitled Effective Order No. 89-18. The corrected copy contains all of the accurate statements that reflect the scope of issues that Mr. Keegan was asked to address.

H.O. SILVA: If I understood that, I would

rule.

MR. WILKINSON: I'm having a difficult time with it as well. Does the bracketed statement in Mr. Keegan earlier draft refer to the statement that precedes it?

MS. KRAUS: No, it does not.

MR. WILKINSON: So all you've done is struck the bracketed statement?

MS. KRAUS: That's correct.

MR. WILKINSON: Left us to decide what he is saying is within is opinion.

MS. KROP: In the first version we had already deleted the actual substance that was beyond the scope.

MR. WILKINSON: I think I understand. I withdraw the objection.

H.O. SILVA: Lets keep it to 30 minutes.

MR. KEEGAN: I will. I will be brief.

MS. KRAUS: Mr. Keegan, before you begin, can you affirm that Cal Trout Exhibit No. 30 is a true and correct copy of the corrected copy of your written testimony?

MR. KEEGAN: So help me God.

MS. KRAUS: Can you affirm that Cal Trout Exhibit No. 31 is a true and correct copy of your statement of qualifications?

MR. KEEGAN: I do.

MS. KRAUS: Can you affirm that Cal Trout Exhibit No. 32 is a true and correct copy of your PowerPoint presentation?

MR. KEEGAN: Yes, it is.

MS. KRAUS: Thank you.

MR. KEEGAN: Thank you. Nice to be here. My name is Tom Keegan, and I'm a fishery biologist. I work at ECORP Consulting, Incorporated, Roseville, California. And I have over 25 years of experience specific to threatened endangered species, steelhead, salmonid issues, rivers, impaired flows, issues similar to this. I've been involved in collaborative processes for FERC, in particular FERC specific -- most recently with Project 24, EID, where we went to collaborative process, went through the settlement agreements, providing adaptive management and also involved with the Rock Creek Cresta Adaptive Management Program there for PG&E. Just a couple examples.

This first slide I have here is really what I am going to focus on in my talk. I won't go over each and every one of the bullets, other than I am going to be talking about operational impacts to the Cachuma Project, current condition of Santa Ynez River steelhead, and I am going to discuss flow issues of steelhead requirements, of

steelhead and lifestage and speak a little bit about upstream and downstream passage issues, adaptive management and then I will provide a summary of my conclusions and recommendations.

Cachuma Project, just real briefly, I wanted to remind the Board about the impacts of the Cachuma Project. Namely the lack of steelhead access to upstream spawning and rearing grounds, that previous testimony has shown to be superior to what is existing downstream of Bradbury Dam. Construction and operation of the Cachuma Project seriously impacted the natural hydrograph, resulting in adverse effects to all lifestages of steelhead. And lastly, the major impact is the lack of improvement gravels and other suitable size spawning gravels from the upper watershed down into the area of the river below Bradbury Dam, and in particular within the wetted channel. I think there has been some testimony towards that and certainly within the record.

So I would like to just reiterate my agreement with Dr. Moyle's definition of good condition. And just kind of go through on the -- I agree on the individual level. I can't speak really too much about that insofar as fish that are there all appear to be in good condition, at least when I had been on site. I have been on the Santa Ynez River. It's been about seven years since I have been

down there. But I was involved in some of the earlier studies that had been planned and implemented by the SYRTAC.

On the population level, there are problems. Specifically related with fish, there is an issue regarding age structure, just generally low abundance of steelhead of all lifestages and also with habitat. There is low suitable habitat for generally all lifestages of steelhead.

And next slide, please.

The first flow issue I want to talk about is regarding upstream passage of adult steelhead provided what -- the criteria that's generally been accepted or have been used in most of the analyses is the Thompson Criteria. I am sure you've all heard about that. Depths, where water depths for passage is necessary, critical riffles are generally -- I believe it is over .6, but sometimes it is .5 feet. So I have included both .5 and .6 feet as the depth criteria.

Velocity of less than eight feet per second and then a length of critical passage of sometimes referred to as 25 percent of the contiguous stream channel and sometimes referred to as eight feet of contiguous stream channel. Also, there has been -- the target of 14 days of consecutive passage flows is an important requirement from

the studies and whatnot that have come from these proceedings. I believe that 14 days comes that decay function of the -- forgive me because I can't remember the lows. I can't recall the decay function. But it is essentially the decay from 150 cfs down to 25 cfs at Solvang, I believe.

Essentially, the Biological Opinion states that 35 cfs, and this is in the Fish Management Plan also, 30 cfs will provide passage in 38 percent of years under the current project. Increasing to 63 percent of years with the supplemental migration flows to maintain 14 consecutive days. I believe that the Biological Opinion states, however, that that is actually close to the minimum at which passage is possible, and states it is not necessarily good migration habitat.

Alternative 3A2 in the Bureau's 1995 Cachuma Project renewal EIS/EIR, flows in that alternative will achieve successful passage in about 84 percent of the years of record.

Turning to spawning, I am providing spawning habitat requirements. Those are typical suitability criteria, habitat suitability criteria that are utilized. I don't think I need to go over those specifically. These are typically used under the IFIM, and I believe these were -- in fact, I pulled those right out of the DWR's IFIM,

1998-99 IFIM, where they used -- these were from the curves, the habitat suitability curves in that document.

And the IFIM was used to provide an index of habitat for under two situations. That being existing substrate conditions and also for substrate improvements. In other words, addition of suitably sized gravels to the river. And back in 1989 the results of that study essentially said that with existing substrate conditions, a hundred cfs is about optimal spawning flows. The peak out occurs at about 100 cfs. Likewise with substrate improvement that you get corresponding habitat at 48 cubic feet per second.

Alternative 3A2, on the other hand, provides also -- provides basic spawning flow requirements and -- excuse me, provides these, that 48 cfs, and improvements to spawning substrate are not in the Alternative 3A2 and would need to be required -- are required to provide the corresponding amount of habitat.

Next slide, please.

Turning to fry rearing. I present some fry habitat requirements. There are some depths. Fry typically inhabit the edge water habitats or shallow habitat, stream edges. Typical depths of .2 to 1.2 feet, with a preference of about a half of foot, with loss in preferences with less than about three-quarters of a foot

per second. IFIM also is used to determine fry rearing habitat.

Next slide.

Onto juvenile steelhead. You can see juvenile steelhead preferred deeper water than the fry. They will move out of the deeper waters. They'll move away from the edge water habitat. Often they will be utilizing pool habitat. They have a wider range of flows. They can tolerate near zero velocities, for example, in pool habitat. And they have a general preference of 1.2 feet per second. Again the IFIM was used to determine juvenile rearing habitat availability.

Most of the studies that are in the Biological opinion in particular and then of course in the State Water Resources Control Board EIS/EIR focus on and the Fish Management Plan focus on improvements of juvenile habitats in the upper most reach below Bradbury Dam, the 2.9 miles, also known as the Highway 154 reach.

As a comparison, Alternative 3A2 provides improved conditions, provides for improved conditions over the ten and a half miles of the river, incorporating Highway 154 Reach, Refugio Reach and Alisal Reach.

As I mentioned, for the spawning habitat the IFIM predicts 120 cfs as an optimal flow for juvenile habitat, under an existing substrate condition, but with the

addition of improved substrate conditions. In other words, suitably sized spawning gravels. The 22 cfs flow provides a corresponding amount of habitat. And also relative to juvenile rearing is -- I wanted to point out that Alternative 3A2 improved rearing conditions in the lagoon, downstream of the lagoon, which hasn't gotten a lot of press her lately. But we believe that the lagoon is a most important habitat in this river and deserves connectivity and flows to destratify if possible or to at least to the extent possible water quality conditions so that rearing habitat is improved. Steelhead generally prefer more stratified, more towards freshwater conditions rather than a highly stratified lagoon.

And next slide, please.

One more. I got these out of order. Then we'll come back to the other one.

Regarding -- the first bullet here talks about my view that most of -- the target rearing flows that are presented in the Biological Opinion and the Fish Management Plan and the EIR focus on juvenile lifestage, rather than fry. They focus on fry lifestage rather than juvenile. They should focus more on juvenile lifestages. And the reason for this is that the juvenile stages will incorporate, often do incorporate, fry rearing suitability criteria. And fry, as I stated, requires shallower or

don't require as deep habitat, but can tolerate -- but can't tolerate deep habitat. And so it is more appropriate to utilize juvenile habitat rather than fry habitat. Also, the survivorship of juveniles to adult stage is improved in comparison to survivorship of fry to the adult stage. So it is important to provide conditions for the juvenile lifestage.

And I have another bullet there discussing the importance of the lagoon, as important to juvenile rearing habitat.

Next slide.

I want to talk a little bit about the methods that were utilized in the original 1995 EIS/EIR Cachuma contract renewal and compare that with more recent methods that were used to look at habitat as reported in the current EIR/EIS for the water rights permit modifications.

IFIM method is generally recognized as being the best method as a predictive model for determining habitat. It is based on collection of substantial amounts of empirical data, and it provides a level of qualification necessary for restoration in particular to endangered species, which require more protection by law and, for example, the Santa Ynez River steelhead.

The top width method was used, I believe, in a way trying to assess habitat availability and in a less

intense manner to try to collect information necessary for providing appropriate downstream flows. However, I have problems with the top width method in terms of being able to predict actual habitat. The top width method doesn't have -- it's got less than sufficient empirical data, for example, than -- the IFIM is a transect based method where you collect data, at least 20 points along a transect, not including depth and velocity information. Top width method you collect the stream width and then the thalweg, which is the deepest part of the channel. You collect that data and velocity, and then you -- a model is developed from other -- presumably from other transect related data that can be applied to a -- well, they develop a width versus depth relationship which can applied and then they predict habitat, amount of habitat from that.

And again there is several reasons why it is less than sufficient as compared to the IFIM. It doesn't take into account channel morphology and habitat. It doesn't -- it doesn't provide direct association with habitat suitability for fry and juvenile lifestages, in my opinion. And this analysis that was used for determining in particular the interim flows and the long-term flows focuses on fry habitat and not on juvenile habitat.

MS. KRAUS: Mr. Keegan, just want to interrupt with a time check. Can you try to wrap it in the next

five minutes?

MR. KEEGAN: Yes, I can.

H.O. SILVA: He's got -- he's only half way through. He is on 20 minutes already.

MS. KRAUS: You are only half-way through and you have only 10 minutes.

MR. KEEGAN: I am going to present a series of slides here. I wanted to just compare the habitat scoring that was used during the 1995 EIS/EIR and then the current EIS/EIR. And this shows the discrepancy between the two, the outcome of the two methods, the IFIM and the top width method. And the magenta color shows spawning -- we flows on the X-axis. You have a score from one to five. One being the least and five being the best quality of habitat on the left. So it goes from right to left. And I don't have the table of actual values, but this describes those flows required for spawning. What score they would receive within these flow ranges.

As you can see, the spawning -- for example, to get a score of five, the best score in the 1995 Cachuma contract renewal, spawning flows had to exceed or equal 70 cfs. To get that same score using the top width method only 30 cfs was required. So that is a major discrepancy there. And you can follow it on down to -- for example, to get a very low score of one, spawning flows have at

least 20, 25 cfs, I believe, were necessary using this top width method. However, scores of -- I've forgotten what it is approximately. I forget what that is. I think it is three to five cfs. You get this large discrepancy.

Next slide.

Same thing, the fry rearing habitat. You see this large discrepancy where the IFIM predicts -- where you get higher scores, higher flows necessarily in the IFIM. You get lower in the top width method. It is particularly apparent also under the juvenile, next slide, rearing habitat where, for example, you get a score of five, the best quality habitat, also 65 cfs in the original in 1995 contract renewal EIS/EIR, as opposed to 10 cfs or greater under the new EIS/EIR.

I looked at, in a very cursory manner, but I wanted to get a look at how the various -- these various alternatives panned out by averaging monthly median flows over the record, based on the flow outcome as the model predicts.

Two points to this graph. One is that on the far right you have the 3A2 alternative. It shows much higher average scores, double that over all the remaining alternatives, including the current project, Alternative 2, the three series and whatnot. The second point is that there doesn't seem to be as much difference between the

other alternatives, including old Alternative 1 and Alternative 2 and the three series.

Next slide.

These are overall conclusions on flow and stream flow issues. I am concluding that because of what -- the paucity of general empirical data, the top width may not be as an appropriate method as IFIM in this case for determining appropriate flows per lifestage. I'm also concluding that the flows that are presented as a result of this are not going to restore the steelhead populations or maintain steelhead in good condition. Conversely, I am concluding that Alternative 3A2 is more likely to restore steelhead population conditions, and it is based on a better predictor, a better habitat predictor and more accurate habitat score valuations.

I like to add the caveat that the necessary substrate improvements would also have to be incorporated along with the flow improvements for Alternative 3A2 to maintain steelhead in good condition.

In addition, there is the variety of studies, many of which we've talked and already heard about today. I concur those. We'll need focused studies after to validate modeling results for passage and also -- for passage and juvenile and fry lifestage habitat modeling.

We also recommend focused studies be conducted to

consider modification of the 89-18 flows to determine a more balanced way to provide downstream flows for steelhead.

Next slide.

Passage issues around Bradbury Dam. Concur with the National Marine Fisheries Service presented in that there needs to be in-depth studies conducted right away to assess whether or not upstream passage, of what we know it is feasible and to determine how that might be accomplished. Certainly, historically the entire watershed was utilized by steelhead prior to the Cachuma Project, and the current -- given the current configuration, the current dam, the current conditions cannot, cannot mitigate for loss of that upstream habitat. And that's why we do need to have these studies for steelhead passage around Bradbury Dam.

Next slide.

I want to talk a little bit about adaptive management. There is adaptive management provided in the Fish Management Plan, and I view what is in there as an information feedback loop. I think it is missing one very critical piece, and that is the development of a priority target success criteria. These have been used recently in a lot of Federal Energy Regulatory Commission relicensing projects. For example, Mokolumne Project on Rock Creek

Cresta and recently the EID Project 4. I think that it is very important that -- we collected -- we've been at this for ten years or so. We have collected a lot of information. We ought to be able to predict or develop these target criteria, which may include anything from fish population dynamics, for example, percentage of age class, just numbers of young-the-year fish produced. Maybe -- there is several metrics that you can use to measure those, and several that you could identify up front. And then in scientific method test those success criteria. With ongoing studies, of course, you've determined the flows. You predict what you outcome is going to be. And then you see what happens with monitoring. And if you don't hit those, at least instead of just saying, "Well, we came pretty close," you've got an idea that more studies need to be conduct or at least you can conduct more studies regarding limiting factor analysis, something like that try to determine why you've not reached the success criteria.

So again it's extremely important to develop these target criteria beforehand, and they need to be part of the record.

And next slide, please.

This is my summary slide here. Just to reiterate my general conclusions are that Alternative 3A2 is more

likely to restore steelhead population conditions over the other current project. With necessary substrate improvements it is likely that flows provided in Alternative 3A2 can maintain steelhead populations in good condition.

I am concerned that the current project is not likely to restore or will not restore steelhead populations or maintain steelhead in good condition. I think we need more focused studies to verify passage success and validate the modeling results. We need, as I mentioned before, modification, looking at studies to consider modifications to the 89-18 flows release schedule. I believe we have a real urgent need to look at options for passing steelhead above Bradbury Dam.

And lastly, I strongly recommend that within the collaborative process that these 8 priority target criteria are developed and added to the record, so as a measurable, as a yardstick to which we can measure success of steelhead restoration.

That concludes my testimony.

MS. KRAUS: Thank you, Mr. Keegan.

Just a quick reminder to the remaining two witnesses, please be mindful of your time limits, which is 20 minutes.

H.O. SILVA: Ms. Kraus, can I ask you

question? Are your next witnesses related to fisheries or conservation or both?

MS. KRAUS: Both. Ms. Haasz is speaking to water conservation and Mr. Zapel will be speaking to fish passage methods.

H.O. SILVA: I had an idea, but that won't work now. Let's proceed.

MS. KRAUS: Ms. Haasz.

MS. HAASZ: I will be quick.

MS. KRAUS: Before you get started a couple of things. We have a PowerPoint presentation that Ms. Haasz will be using, and we are going to submit this as Cal Trout Exhibit No. CT 56.

Ms. Haasz, can you affirm that Cal Trout Exhibit No. 50 is a true and correct copy of your written testimony?

MS. HAASZ: Yes.

MS. KRAUS: Can you affirm that Cal Trout Exhibit 51 is a true and correct copy of your statement of qualifications?

MS. HAASZ: Yes, it is.

MS. KRAUS: Is Cal Trout Exhibit No. 56 a true and correct copy of your PowerPoint presentation?

MS. HAASZ: Yes.

MS. KRAUS: Thank you.

MS. HAASZ: Thank you, Mr. Silva and staff. My name is Dana Haasz. I work for the Pacific Institute. We are a research and policy group up in Oakland -- down in Oakland, I guess. And I am not going to talk at all about fishing. My area of expertise is demand management side of water use and efficiency. And a lot of this analysis comes from demand management. We wrote at the institute -- should be coming out next week -- quantifying the potential for conservation in California. So a lot of the models and analysis comes from that report, and we submitted a draft to the Board, but the final isn't out till next week. Peter Gleick also worked on this report and he is unavailable today, but will probably be here tomorrow.

Also start with the end, the major conclusions of our report. Conservation and efficiency improvement in just four end uses. We only went to four end uses. Can cost effectively yield about 5- to 7,000 acre-feet a year of water savings. Conservation can reduce or eliminate the impact of steelhead protection on agencies dependent on Santa Ynez River supplies. And there are many, many other efficiency options we did not consider here that they could also reduce water use.

Data from these analyses comes from the agencies themselves. We didn't make anything up. The sources are

the California Urban Water Conservation Council BMP reports, Department of Water Resources Urban Water Management Plan, the Bureau water conservation plans, contact with agencies and, of course, the EIR data, but I think the EIR data comes from these somehow, anyway.

Just so we are all talking about the same thing. What do we exactly mean by conservation and efficiency? What we are talking about is reducing water required to satisfy needs for goods and services. So using less water to flush toilets, using less water to wash clothes, but still flushing the toilets and washing clothes. We do not mean brown lawns, any loss of services or reduced production.

Next slide.

Existing conservation efforts and programs. Yes, every agency has conservation programs more or less, but they vary in commitment, scope and effectiveness. No agency has come close to capturing all the cost-effective conservation potential yet. And our analysis evaluates only a portion of this potential.

Here is some residential water use of the Cachuma contractors. This is gallons per day, gallons per day residential only, which you see varies from 82 to 231.

Next slide.

The water use -- the actual and potential water use.

The residential use, as I said, of the contractors ranges fairly widely, from 82 to 231 gallons per capita per day. And according to our study that we talked about, we estimate that average residential use could be about 65 gallons per capita per day, and that includes indoor and outdoor with cost-effective conservation programs and available technology.

That was supposed to be erased.

The point was there, and I moved it to a later slide because it is more of a drought issue rather than regular conservation programs. But Santa Barbara did reduce its residential use to 71 gallons per day. I think by 40 percent or something like that, 35 percent, during the last drought. But when talking about the 65 gallons per day is standard conservation methods rather than extreme drought, panic methods.

Next slide.

How do we do this? The conservation, the methods. We analyzed potential of following end uses: residential toilets, residential washing machines, CII, commercial/industrial/institutional toilets, and landscape irrigation. These are the only four things we looked at. And there is a lot of other things to look that we didn't. We didn't evaluate the savings from leaks, dual flush toilets, dishwashers, either residential or commercial.

There is quite a bit in commercial savings.

We didn't do -- this is an uncorrected PowerPoint presentation, but I think your handout is right. We did residential washing machines. We didn't do commercial washing machines. We didn't do landscape design. We didn't do CII process improvements, like clothes responsive, that kind of thing. We didn't look at agricultural, and there are other things we did look at. So the point is, pretty limited analysis.

Next slide.

These are some of the -- oh, boy. Look at your handout, please. There is a conservation potential result, the page -- I wasn't really going to go over the numbers in great detail. It should be in your handout. Not everyone has it. We will have it tomorrow before the cross. Just kind of -- it's the breakdown of the potential savings from the ULFTs, the residential toilets, commercial toilets, washers and landscape. And it shows -- I broke it down by method and by agency, and it comes out to about five to seven acre-feet per year.

And then the avoided cost of the -- the avoided cost of the contracted supplies. And, again, it comes from the documents, contracts from Member Units themselves. And this is only the variable cost. The fixed cost is assumed fixed. We didn't do anything about that at the moment.

Dollars per acre-foot ranges from about 1-98 for groundwater to 3-98 for state water and desal is $1,100 an acre-foot.

Next slide.

Let's go -- cost of conservation for residential toilet, the cost of water conserved is about $50 per acre-foot. For commercial toilet it is about 1-05 to 2-72. Residential washers, it's a negative 74. And the reason it is negative is because we factor in the energy savings over the lifetime of the unit. The consumer actually makes money, so to speak, on it. And landscape is about 60. So we are looking at cost of conservation that varies -- they range from about 50 to -- from negative 74 to about $272 dollar per acre-feet, while the avoidance cost of supply ranges from 1-98 to 3-98. I really don't -- I'm not considering desal in this because it's an extreme measure.

So the point being that the cost of conservation is comparable to the avoided cost of supply. So conservation is cost-effective. There you go. Supply options range 188 to $1,100 per acre-feet, the variable costs. Obviously the fixed cost is higher. And then conservation options range from negative 74 to 3-25 per acre-foot.

And then, as I mentioned, a negative cost-effective negative number means that the measure saves the consumer

money over its lifetime. And that is because we included the cobenefits.

There is supply and demand conditions for the contractors. I don't want to spend too long on this. The point being that the first column is total -- or second column is total supply, and then there is the average demand in 2000 and average demand in 2020. It filled out. The total supply includes the percentage of State Water Project that the agencies estimate that they get. So it is not a hundred percent of State Water Project water. It has -- incorporates the drought buffer. It doesn't include desal. Those elements are not in total supply. And still in average years up to 2020 supply, there is supply meeting demand. Enough supply to meet demand.

Here is a table of residential water use. It's projected to rise. If you look at the -- this is water use just for the residential sector from 2000 to 2020. The first line is per capita, gallons per capita per day, which goes from 98 to 107. The second line is change in water use from 2000. So it changes about 5 percent a year. So if you change 5.7 percent first year up to 23, 23 percent change between 2020 and 2000 in water years. And the last line shows population growth. So there is actually -- while there is a 23 percent increase in use, there is only a 15 percent increase in population.

Point is that use is exceeding -- use is growing at a quicker rate than population.

Next slide.

Supply is adequate during all -- there is -- what we are trying to say here is there is sufficient supply to meet demand. Supply is adequate during all but very critical drought years, as you saw from two tables ago. During drought years, emergency measures are implemented. Emergency measures effectively reduced demand by 25 percent, by 25 percent during the last drought. I actually think it is a little higher. And then as I was saying, during the last drought, residential use in Santa Barbara was 71 gallons per capita per day, and it's since bounced back to about 88.

In that same vein, there is sufficient supply to meet demand. The shortage projections in the EIR are based on a realistic demand forecast which shows the rising per capita demand given natural replacement in existing -- in emerging conservation tools. I don't understand the idea of rising per capita demand because other than there will be emergent conservation, conservation programs, but there is also natural replacement that is going on. High flow toilets will be replaced. Washers will start getting replaced. Demand should -- there is no reason for demand to be going up.

And all but one of the members -- one of the agency's demand is going up. Only in Santa Ynez is demand going down. Their demand is pretty high, anyway.

Next.

The EIR needs to include a vigorous and realistic analysis of demand. There is no -- there is only one demand scenario. There are no demand scenarios. There is no different conservation programs included. They do account for some of the conservation programs that the agencies are doing, but there is only that one scenario.

Next Slide.

In conclusion, our estimate is that existing technology, policies for the four entities we looked at could reduce urban use by 5- to 7,000 acre-feet cost effectively.

Next.

This water can be help mitigate impacts to water supplies caused by the EIR alternatives. And the EIR must incorporate future conservation and alternative demand scenarios into the planning process.

That concludes my testimony.

MS. KRAUS: Thank you, Ms. Haasz. I have a couple of follow-up questions for you.

You mentioned just now your opinion that the EIR does not include sufficient demand scenarios. Could you

provide briefly just one or two examples of the scenarios that you would recommend be included.

MS. HAASZ: One of the scenarios was included as acceptable, that there should be different levels of conservation. There could be more aggressive conservation programs. Say, they all invested in landscape conservation programs, or whatever is most appropriate. We are not even saying that these are the most appropriate or process kind of CII process programs, what would demand look like. Say, just these different levels of investments, different corroborations so you put together a few scenarios like they did on the supply side. And there is a number of different programs that they could use to do that.

MS. KRAUS: Thank you.

One last question. You mentioned in your written testimony that the water agencies' reports to the Bureau are mandatory five-year updates, but that the accuracy, completeness and quality of these reports can vary.

Are you familiar with the Cal Trout's Exhibit No. 2?

MS. HAASZ: Yes, I am.

MS. KRAUS: This is a March 12th, 2003 letter from Kathleen Wood of the Bureau to Mr. Robert Wignot and the Cachuma Operation and Maintenance Board?

MS. HAASZ: Yes.

MS. KRAUS: Can you just describe briefly what this letter indicates?

MS. HAASZ: As Karen said, every five years these plans are due. Santa Barbara and Goleta have given theirs in their plans, and they were accepted. Montecito and Carpinteria were late on the plan. They were due in year 2000. I think they were only submitted this past September. They were only submitted in 2003, and Santa Ynez has just submitted their plans. And I am not from -- what I hear because of the number of the exemptions that they're taking on the BMPs, it may or may not have been accepted yet.

MS. KRAUS: Thank you.

(Reporter changes paper.)

MS. KRAUS: Cal Trout's remaining witness is Mr. Ed Zapel.

Mr. Zapel, can you affirm that Cal Trout Exhibit No. 10 is a true and correct copy of your written testimony?

MR. ZAPEL: Yes, I can.

MS. KRAUS: And is Cal Trout Exhibit No. 11 a true and correct copy of your statement of qualifications?

MR. ZAPEL: Yes.

MS. KRAUS: Is Cal Trout Exhibit 20F a true and correct copy of your posterboard?

MR. ZAPEL: Yes.

MS. KRAUS: Is Cal Trout Exhibit 29 a true and correct copy of your PowerPoint presentation?

MR. ZAPEL: Yes, it is.

MS. KRAUS: Thank you.

MR. PALMER: For the record, again, Mr. Silva, I have an objection to Mr. Zapel's testimony. It lacks foundation. He just discusses various techniques for passage, but he does not at all attempt to relate that passage to anything that has to do with Bradbury Dam or in particular passage studies and provides no foundation whatsoever to support the testimony.

H.O. SILVA: We will note your objection, but allow the testimony.

MS. KRAUS: Go ahead.

MR. ZAPEL: Thank you.

Mr. Silva, staff, I might point out that my testimony covers more specific features for Bradbury and Gibraltar Dams. Whereas, my PowerPoint presentation discusses primarily existing fish passage systems and facilities on projects other than Gibraltar and Bradbury Dams.

I direct your attention to my PowerPoint presentation. This is just a photograph that I have used as a background. This is Red Rock above Bradbury Dam,

very nice place. There isn't that much water at this time. I was up there on Friday, a little lower than that.

Next slide.

There are a number of adult fish passage technologies available for moving fishing from downstream to upstream above a dam. One of which includes fish ladders, as NOAA's testimony provided. They described fish ladders basically as a stepping system for fish to move voluntarily up through a fixed structure. Generally, I like to summarize some of the characteristics of fish ladders.

They are generally expensive capital costs. They require low labor cost over the life of the project. They are generally practical for heads from five to 100 feet. By head I mean hydraulic head. As Mr. Mann testified, a hydraulic head represents the difference in water surface elevation from the river below to the lake above. Again, they are applicable generally for heads from five to 100 feet. Their costs rise linearly as a function of hydraulic head. They are generally intended for heavy use, usually more than 200,000 fish, returning adults. They do require substantial water flow, generally 25 cfs or more, depending on the type and design of ladder.

Next slide,please.

Another technology that is available and is being

used successfully and has been used successfully since at least 1939 is trap and haul or trap and transport by any of a variety of methods. Generally, it can be characterized as one which requires low capital cost. However, it does have a high labor cost overall for the life of the project. It's practical for hydraulic heads in excess of 100 feet. Primarily because the cost of transporting fish does not vary linearly with the hydraulic head of a particular project.

They have been designed, constructed and successfully utilized for returning adult-runs up to 200,000 fish that I am aware of. There may be others out there that are designed for greater use than that, but generally less than 200,000 fish. They do not require or they require very minimal additional water flow. Most cases they do not require additional water flow loss downstream.

Next slide.

I would like to talk briefly about juvenile passage technologies. One, possibly the simplest is the use of reservoir outlets. That is to use the existing outlets for passage of juvenile fish downstream. They can range from low to moderate or even high capital costs for retrofits for existing intakes that are not appropriate for fish passage. They have been proven to be of limited

efficiency if they are not surface-oriented; that is, the water drawn right off the top of the reservoir.

Again, survival through these reservoir outlets can be limited if they were not originally designed for safe fish passage. They are intended for typically very heavy use, greater than a hundred thousand downstream migrants, to include adult kelts, that is adult steelhead returning to the ocean and juveniles.

H.O. SILVA: Ask you a question. Are we following -- you haven't changed the slide?

MR. ZAPEL: We are still on the same one.

MS. KRAUS: The picture in the background remains the same.

MR. ZAPEL: You have to forget about the picture and read the testimony. Sorry about that. I could have found any number of pretty pictures, but I didn't want to bore you with the pretty pictures.

Reservoir outlet passage generally requires substantial water flow, greater than 15 cfs or more.

Next slide, please.

Floating collectors are a technology that's been in use primarily in the Pacific Northwest on a variety of projects. One of which that it has been in function successfully since 1962 or before. They are moderate in capital costs, moderate in labor cost. Attraction and

collection efficiency must be carefully considered when designing and implementing these floating collectors. They are unaffected by variable pool reservoirs such as Lake Cachuma. Ones that vary over the course of the year.

Sometimes they require barrier or guide nets if 100 percent exclusion is desired or if more effective guidance is needed. Survival through these systems is very good. They are intended for moderate to heavy use; that is, greater than 25,000 migrating fish. Primarily we are speaking of juvenile migrants. They do not require additional water flow.

Next slide, please.

Large fixed screens, that is on a reservoir outlet. They are very high capital cost. They could also apply to a tributary collector system on the stream channel itself. High capital cost, moderate labor cost. Again, attraction and collection efficiency must be carefully considered. Complex elevation adjustment for variable pool reservoirs. Survival is generally very good if it is designed specifically for fish. They are intended for heavy use; that is greater than a hundred thousand fish. They do require significant water flow if pumped back is not utilized.

Next.

Louvered intake. Similar to a fixed screen intake,

but a little bit baser technology here. Again, a high capital cost, moderate labor cost. Collection efficiency can range from poor to moderate. That is proven on several installed facilities using louvers as opposed to using fixed 100 percent excluded screens. Again, they suffer the same problems. Complex elevation adjustments for variable pool reservoirs. Survival is generally moderate to good. It is intended for heavy use, just as a large fixed screen, greater than a hundred thousand fish. And again, may require significant water -- additional water flow if pumpback is not utilized.

Now I would like to pass into some specific examples of downstream and upstream collection systems that are utilized throughout the Pacific Northwest. I've named six here and covered six in my presentation, and then I will move on into specific examples that might be applied to Gibraltar and Bradbury Dam.

First of all, I will start with Baker Lake. That is on the Baker River in northwest Washington state. There are two dams in the complex. Upper Baker is 312 feet high. Lower Baker is 285 feet. That is the structural height, not the hydraulic height. Hydraulic height is about 20 feet less than that. However, these reservoirs vary in elevation because they are used as a flood control reservoir and hydroelectric storage reservoir, so they do

vary significantly, up to 50 to 80 feet.

On these projects, 10,000 to 30,000 adult fish are trapped and hauled annually upstream of Upper Baker Dam. Seventy-five to 325,000 smolts are collected and hauled annually with floating collectors in the reservoirs, passing down stream into the Baker River and then into the Skagit River and on into Pueget Sound. On average this system requires about two and a half FTEs annual labor requirement, peaking during times of peak passage, of course. They do operate year-round

Next slide, please.

Baker Lake, adult fish trapped and hauled. I would like to describe those briefly. They consist of a barrier dam below Baker Dam. They have adult fish holding, crowding the loading system. It's a water to water transfer from the holding system in to the tank truck, 60-mile round trip truck haul upstream to the release site above Upper Baker Dam. Again, as I said before, this system passes 10,000 to 30,000 adult fish annually. And the species mix is primarily sockeye and coho. It is an active and successful sockeye program on Baker Lake, one of the few that does successfully use trap and haul facilities, I might add

Next slide.

This is a picture of the low barrier dam that is in

place below Barker Dam. On the right-hand side of the frame you can see the part of the adult attraction system and holding tanks.

Next slide, please.

This is the right-hand side of that photograph that was missing before. You can see the crowding systems, the holding tanks, transfer system.

Next slide, please.

This is looking downstream in the same perspective. On the left-hand side you can see the transfer truck awaiting loading. You see the hopper system elevated well above the holding tanks. This system has been in use since the 1960s with good success.

Next slide, please.

On juvenile fish collection on Baker Lake. There are floating collectors. I think they were referred to previously by John Mann as gulpers in the reservoir at Upper Baker and Lower Baker Dams. In this case they are provided with full exclusion guide or barrier nets that extend all the way to the bottom of the reservoir, 285 feet below the surface. They do pass and capture 100 percent of the fish that enter or that purportedly would enter the hydropower intakes.

They are provided with attraction flow with a pumpback system. Upper Baker Lake has approximately 150

cfs capacity. Lower Baker is about 90 cfs capacity. Again, these systems collect fish, transfer them into a holding barge from which point they are moved with a water-to-water transfer into a truck, passed downstream below the lower barrier dam, the picture of which you saw earlier in the presentation. About a 40-mile truck haul, primarily because the collection facility is located very near the face of the dam. That is not always the case on floating collector systems. They can be located anywhere within the reservoir, and I will bring that out more specifically when we talk about Bradbury and Gibraltar.

Again, as I mentioned before, these systems pass between 75,000 and 325,000 smolts every year. Species mix, sockeye and coho primarily. These are both wild fish and spawning farm generated progeny.

Next.

This is a picture of the Lower Baker juvenile collector. You can see it floating out there in the reservoir with the log boom to keep floating debris out of the system. There is also a guide exclusion net. You can see one of the buoys that support that guide net in the picture there.

Next photograph, please.

This is a picture of Lower Baker Dam. On the left-hand side you can see the transfer crane that moves

the hopper from the holding barge into the truck transport system.

Next slide, please.

This system here was a temporary system, installed at Howard Hanson Dam on the Green River, to test the viability of moving wild steelhead upstream of an existing flood control water supply reservoir on the Green River in Washington state. Howard Hanson Dam is 235 feet high in structural height. The reservoir elevation various about 100 feet under the new proposed plan, winters to summer.

H.O. SILVA: You have five minutes.

MR. ZAPEL: This system moves 10 to 150 wild steelhead every year, about a 30-mile round trip. 10,000 to 50,000 passed annually.

Next slide.

H.O. SILVA: It is all very interesting, but you might get to your main point.

MR. ZAPEL: Getting there. This is a barrier dam. --

Moving to the next slide, please.

This is the temporary trap, again it was a temporary system.

Next slide, please.

Wynoochee Dam, another example, 175 feet high. To summarize, 20,000 and 6,000 adult fish pass upstream of

the dam, steelhead primarily. This used juvenile fixed port collectors in the dam itself.

Next slide, please.

This is a barrier dam downstream for adult fish.

Next slide.

Again, a close-up photo of the barrier dam system.

Next slide.

These are the fixed port collectors on the dam. These collect fish from the reservoir at varying reservoir elevations, pass them through a conduit to the tailwater below.

Next slide.

Mud Mountain Dam, 432 foot high structural height. Generally a dry dam. It is used for flood control purposes only. 5,000 to 40,000 adult fish trapped every year and moved upstream. 50,000 to, at one point, 2,000,000 smolts moved every year. About a half of an FTE annual labor requirement.

Next slide.

This is a picture of the diversion and barrier dam.

Next slide.

Adult trap and loading hopper. You've seen these pictures before.

Next slide.

This is a hopper with fish. A few steelhead, I

might add, quite a few.

Next slide is the truck. Very similar to Baker Lake.

Next slide is the adult release sluices. Again, keep in mind that we are moving up to 40,000 adult fish through this system every year.

Next slide.

That is unloading the fish from the truck into the river upstream.

The last project I would like to talk about is Cowlitz. This is the largest that I am aware of. They move 30,000 to 140,000 adult fish every year. They've been doing it since the 1960s above the three dam Mossyrock, Mayfield, Cowlitz Falls Project. The largest of the dams is Mossyrock, I believe, 600 feet structural height. 750,000 to three and a half million smolts collected and hauled annually. Three and a half FTEs are used. This is a very successful system. Barrier dam.

Next slide.

Handling fish.

Next slide.

Moving truck.

Next slide.

Unloading truck.

Now to the meat of the issue here, Bradbury and

Gibraltar Dams. There are a variety of options here for adult passage. I have just discussed permanent trap and haul of any one of several hauling methods. Temporary and permanent depending on the phasing of the studies and the ultimate goals of the water manager resources.

Juvenile passage options could include fixed port collectors at the dam if that proves feasible. Fixed intake collectors at the dam for the pumpback. Floating collector at the dam. Floating collectors at the tributary inlets. And all involve some type of haul downstream to a release site. We are not specifying the type of haul. Could be truck. Could be air. Could be barge transport. Could be a variety of things.

Next slide, please.

This is a temporary adult trap used on the Cedar river to collect brood stock, sockeye brood stock. It collects a thousand adults annually.

H.O. SILVA: One minute.

MR. ZAPEL: All right.

Next slide.

That is temporary trap on the Green River. Again, its a total capital cost was 300,000 to $600,000.

Next slide.

Wynoochee, a little bit more complex. The total capital cost of this system is 1.5 to $3,000,000.

MS. KRAUS: Mr. Zapel, you want to move to your conclusions, just to make sure that you can state those.

H.O. SILVA: Go to the last page. I will allow you one more slide.

MR. ZAPEL: In conclusion, a variety of fish passage mechanisms and technologies are applicable at Gibraltar and Bradbury Dams. All of which have been proven in practice on facilities throughout the Pacific Northwest since at least 1939. The point is that studies should be conducted on these reservoirs and this system to evaluate the feasibility of passage upstream and downstream of these dams to once again reconnect the habitat and the spawning and life history of steelhead trout upstream and downstream of the dams and reservoirs on the Santa Ynez.

That concludes my testimony in abbreviated fashion.

H.O. SILVA: You had 20 minutes.

MS. KRAUS: Thank you, Mr. Zapel.

That concludes Cal Trout's presentation of our case in chief.

H.O. SILVA: Thank you.

As was mentioned, we're going to do the cross only on one witness. I would like to give Esther a little of a break. Off the record.

(Break taken.)

H.O. SILVA: We are limiting the testimony to Dr. Moyle, right?

MS. KRAUS: Right, cross.

H.O. SILVA: Only for cross. We can excuse the rest of the panel.

UNIDENTIFIED PANEL MEMBER: Moral support.

MS. KRAUS: Safety in numbers.

H.O. SILVA: That is fine.

Bureau?

MR. PALMER: No questions.

H.O. SILVA: Member Units.

MR. WILKINSON: Just a few.

---oOo---

CROSS-EXAMINATION OF CAL TROUT (DR. MOYLE)

BY MEMBER UNITS

BY MR. WILKINSON

MR. WILKINSON: Dr. Moyle, from the review that I made of your testimony it appears that your definition of good condition and your article was published in Fisheries, Volume 23, No. 7; is that right?

DR. MOYLE: That is correct.

MR. WILKINSON: That is Cal Trout Exhibit 74?

DR. MOYLE: I believe so.

MR. WILKINSON: Has your criteria for good

condition been formally adopted by the California Department of Fish and Game?

DR. MOYLE: Not that I am aware of.

MR. WILKINSON: How about the Fish and Wildlife Service?

DR. MOYLE: Again, not that I am aware of.

MR. WILKINSON: The same answer for NOAA Fishery?

DR. MOYLE: Yes.

MR. WILKINSON: To your knowledge, has the California Legislature attempted to define good condition as it is used in Fish and Game Code Section 5937?

DR. MOYLE: Again, not that I am aware of.

MR. WILKINSON: Is it possible, Dr. Moyle, that other fisheries biologists could define the term good condition in other ways?

DR. MOYLE: Sure. I am sure there is.

MR. WILKINSON: Is it also possible that the case in the Putah Creek adjudication might not have been appealed for reasons other than acceptance of your definition of good condition?

DR. MOYLE: I am sure there are other factors that contributed to that, yes.

MR. WILKINSON: Does your definition of good condition include fish that have been planted in a stream

system?

DR. MOYLE: The official definition actually -- the official statement of fish in good condition says or planted. Mine does not. Mine really does refer to fish that are naturally spawning wild fish.

MR. WILKINSON: So it would not include exotic fish; is that correct?

DR. MOYLE: Actually, it does. It includes exotic fish in the lower -- I developed it because of -- in parts of Putah Creek where you really can't support native fishes for a whole variety of reasons, but you do support a significant fishery for exotic fish, it can be used in that way, too.

MR. WILKINSON: Am I correct that you have not personally studied the fish that reside in the Santa Ynez river?

DR. MOYLE: That's true.

MR. WILKINSON: Have you ever seen the Santa Ynez River?

DR. MOYLE: I've seen it once. I've driven along it once, but that was a long time ago.

MR. WILKINSON: In your testimony you said that the Santa Ynez River contains two to seven species of native fish; is that accurate?

DR. MOYLE: Yes. That is what I gather from

my reading, yes.

MR. WILKINSON: Do you know actually how many species of native fish there are in the Santa Ynez?

DR. MOYLE: No. The list that I gave in my testimony is based on conversations with other ichthyologists and from the literature. The list I believe has seven species of native fish, and I know there are a number of exotic fishes, but those vary in time and place.

MR. WILKINSON: Do you know whether the same native fish species that existed in the Santa Ynez River prior to Bradbury Dam construction completion continued to exist in the Santa Ynez River today?

DR. MOYLE: As far as I know there are no species that have gone extinct in the Santa Ynez River.

MR. WILKINSON: One of your criteria for good condition is a community that I think you said is dominated by co-evolved species?

DR. MOYLE: Yes.

MR. WILKINSON: Is an exotic species then a co-evolved species?

DR. MOYLE: No.

MR. WILKINSON: Is it true that the presence of exotic species in significant numbers would not be a factor that promotes a fish community that is in good

condition?

DR. MOYLE: I am not sure quite what you are asking. But the presence of exotic species -- you can have exotic species present in a place where you have a fish community in good condition as long as they are not the dominant species in a place where you are really trying to get the natives back.

MR. WILKINSON: Do you know whether that condition exists in the Santa Ynez or not?

DR. MOYLE: I don't really. I've heard comments made that there are exotic fish below the dam, but I don't really know that much about it.

MR. WILKINSON: You are not familiar, then, with the numbers or the distribution of exotic species in the Santa Ynez?

DR. MOYLE: No, I am not.

MR. WILKINSON: Do you know whether exotic species are found above Bradbury Dam?

DR. MOYLE: I don't know that, No.

MR. WILKINSON: Would the presence of exotic species be a factor that you would want to analyze before you transport endangered native species above an impassable barrier?

DR. MOYLE: Of course.

MR. WILKINSON: Dr. Moyle, if we have less

than a hundred adult steelhead below Bradbury Dam, as Mr. Keegan testified, then from a conversation biology perspective, is it your opinion that they should be subjected to a trap and truck operation?

DR. MOYLE: I haven't looked at that operation enough to know what the options are or what stresses are around those fish, so I can't really answer that from what I know.

MR. WILKINSON: Would you -- assuming we have less than a hundred adult fish. Would you put those fish into a new area where we have exotic species?

DR. MOYLE: It would really depend on the populations of exotic species. If there is only a very small number and they were a minor part of the system, then it probably wouldn't be a problem. Again, one of the problems we are getting into here is that exotic species are often an indicator of habitat change, and often where you have a lot of exotics you have poor habitat. So there is a mixture of factors here always.

MR. WILKINSON: Again assuming that we have less than a hundred adult steelhead on the Santa Ynez, would you want to put those fish into an area where there has been long-term stocking of rainbow trout?

DR. MOYLE: It just depends on all kinds of situations. I really can't answer that for the Santa

Ynez.

MR. WILKINSON: In addition to the biological criteria that you have identified as being factors or criteria for determining whether the fish are in good condition, would suitable habitat also be a factor in maintaining and enhancing fishing populations in good condition?

DR. MOYLE: Yes, it would.

MR. WILKINSON: Improving access to suitable habitat with the watershed would be an important factor in your view?

DR. MOYLE: Yes, it would.

MR. WILKINSON: Providing suitable rearing flows, would that be another factor?

DR. MOYLE: Yes.

MR. WILKINSON: And improving riparian vegetation, that would be important too, wouldn't it?

DR. MOYLE: Yes, it would.

MR. WILKINSON: Erosion control would also be an important consideration?

DR. MOYLE: Yes.

MR. WILKINSON: And improving the connectivity of habitat for key lifestages, is that also something that would be important?

DR. MOYLE: Yes.

MR. WILKINSON: Isn't it true, Dr. Moyle, that all of the factors that I have just described have been incorporated into the Fish Management Plan for the Lower Santa Ynez River?

DR. MOYLE: I'm really not very familiar with that fish management plan, I'm sorry.

MR. WILKINSON: Thank you.

That is all I have.

H.O. SILVA: Thank you.

Santa Ynez.

MR. CONANT: No questions.

H.O. SILVA: City of Lompoc?

MR. MOONEY: No questions.

H.O. SILVA: Santa Barbara County?

MR. SELTZER: No question.

H.O. SILVA: Fish and Game?

MR. BRANCH: Two.

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CROSS-EXAMINATION OF CAL TROUT (DR. MOYLE)

BY FISH AND GAME

BY MR. BRANCH

MR. BRANCH: Good evening, Dr. Moyle.

In your opinion, what is the importance of the Southern California ESU steelhead in relation to the steelhead species as a whole?

DR. MOYLE: Southern California steelhead is remarkable in lots of ways. One thing, its rather special life history just from an ichthyologist's point of view is just wonderful to look at. But from a -- in many terms of the species as a whole, it's -- the studies of Jennifer Neilson and others have suggested it has extremely high genetic diversity. And, in fact, it may be the -- quite likely, as a matter of fact, is the population that gave rise to all steelhead. That essentially all steelhead evolved from the Southern California and spread north from there. That's the best way to interrupt the genetic evidence that they presented.

MR. BRANCH: Dr. Moyle, do non-natives or exotics, as we have been talking about, as you have been talking about in terms of good condition, do they have to be entirely eradicated to achieve good condition on a community level, or is control enough?

DR. MOYLE: No, they don't. Actually, that is what is so very interesting about Putah Creek, where we got -- we developed a flow regime which favors that natives over the exotics. There is -- none of the exotic species that were so abundant before we got into the flow regime have disappeared. They are all still there, but in very small numbers. The key is that as long as we maintain the flow regime and other conditions that really

favor the natives, they can basically do just fine and the exotics stay at very low levels.

Obviously, as soon as they switch back again, it would be back on exotic. So the answer really is that you can still have small numbers of exotics in a system that you are saying is in good condition.

MR. BRANCH: When you say small numbers of exotics, what do you mean?

DR. MOYLE: Well, enough so they aren't really a significant part of the community. If you have black bass, and there are large mouth bass and small mouth bass, they are in such small numbers they can't really -- their predation can't really impact the native fishes.

MR. BRANCH: Let me ask you this: If, for instance, you had four native species and you had 18 non-native species in a stream system and the non-native species, despite there being a fairly broad number of species in and of themselves, but the numbers within those species are very small, can you still have good condition on the community level?

DR. MOYLE: Oh, yes, you can. That actually describes the situation in Putah Creek to a great extent, the number of native species in some areas is relatively small, yet we collect over a one- or two-year period, we may get ten or 12 non-native species. But it usually one

or two individual species.

MR. BRANCH: Thank you very much.

I have nothing further.

H.O. SILVA: NOAA.

MR. KEIFER: Just a couple questions.

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CROSS-EXAMINATION OF CAL TROUT (DR. MOYLE)

BY NOAA FISHERIES

BY MR. KEIFER

MR. KEIFER: Dr. Moyle, in your great experience with fisheries, you have had occasion to become familiar with the work of NOAA Fisheries?

DR. MOYLE: Yes.

MR. KEIFER: You understand that NOAA Fisheries works with the Endangered Species Acts?

DR. MOYLE: Yes.

MR. KEIFER: Does the term "good condition" that is in Section 5937 appear in the Endangered Species Act?

DR. MOYLE: No, it does not.

MR. KEIFER: Would NOAA Fisheries have any reason to pass on or, as you were asked, adopt your definition of good condition in their work under the Endangered Species Act?

DR. MOYLE: Only if they wanted to go beyond

just recovery of the species.

MR. KEIFER: One additional question. Are hatchery -- as a general proposition, are hatchery or planted fish, particularly anadromous species like steelhead, are they likely to persist in any given system, reproduce naturally, or are they more likely to expire and not persist?

DR. MOYLE: Again, it really depends. That is a question I can't answer directly because it depends on the hatchery fish, whether they are, for example, fish you took out from wild parents and reintroduced them into the system as a way to jump start a system. If it is a domesticated strain, they probably won't survive very well. So it really depends on the parents, parental species, parental stock and so forth. It is not an easy question to answer.

MR. KEIFER: Thank you.

H.O. SILVA: Staff has no questions.

Do you have any redirect?

MS. KRAUS: Can I consult for one moment with our witness?

H.O. SILVA: Sure.

MS. KRAUS: On that note, we have no redirect.

H.O. SILVA: That was a sign. I appreciate everybody staying late. Again, we will start right at

nine, cross-examine the rest of your panel. Then we will go to NOAA's last witness and then rebuttal.

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(Hearing adjourned at 6:00 p.m.)

REPORTER'S CERTIFICATE

STATE OF CALIFORNIA)
) ss.
COUNTY OF SACRAMENTO)

I, ESTHER F. SCHWARTZ, certify that I was the official Court Reporter for the proceedings named herein, and that as such reporter, I reported in verbatim shorthand writing those proceedings;

That I thereafter caused my shorthand writing to be reduced to printed format, and the pages numbered 618 through 862 herein constitute a complete, true and correct record of the proceedings.

IN WITNESS WHEREOF, I have subscribed this certificate at Sacramento, California, on this 9th day of December, 2003.

_____
ESTHER F. SCHWARTZ
CSR NO. 1564