CALIFORNIA CENTRAL VALLEY WATER MANAGEMENT

HEARING

BEFORE THE

SUBCOMMITTEE ON WATER AND POWER

OF THE

COMMITTEE ON RESOURCES
HOUSE OF REPRESENTATIVES

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HEARING ON CALIFORNIA CENTRAL VALLEY WATER MANAGEMENT

THURSDAY, MAY 20, 1999

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON WATER AND POWER,
COMMITTEE ON RESOURCES,
Washington, DC.

The Subcommittee met, pursuant to call, at 11:10 a.m. in Room 1324, Longworth House Office Building, Hon. John Doolittle [chairman of the Subcommittee] presiding.

STATEMENT OF HON. JOHN T. DOOLITTLE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. DOOLITTLE. Subcommittee on Water and Power will come to order. We're meeting today to hear testimony on the California Central Valley Water Management. First session of the hearing will be devoted to issues regarding the California Bay-Delta program. And during the second half the hearing, we'll discuss the implementation of the Central Valley Improvement Act.

This hearing concerns water management in the Central Valley of California, it involves some of the most important issues we will consider in this Congress. It represents a major Federal, State and local commitment to solving California's water needs and sets the stage for future water management policies and facilities in the State of California.

I believe that the participation of Secretary Babbitt and Secretary Nichols indicates both the importance of this issue as well as an opportunity to discuss among some of the major policy leaders the steps we need to take to provide for California's water management future.

While I recognize that there are other pressing issues we will discuss, it is encouraging to see that the stakeholders have agreed that $35 million of the CALFED funding for next year should be allocated for activities that address water quality and water supply issues. Although I don't believe that this sum goes far enough in addressing the needs for additional water supply, it does represent an important acknowledgment and commitment for augmenting California's future water supplies.

Today I would like to address four areas of specific interest to the Subcommittee regarding water management and the Central Valley of California. These areas include ecosystem criteria, and performance standards, the development of a cross-cut budget, augmenting our current water supply and addressing where we are going with the CALFED program.

We need to ensure that there are adequate criteria to evaluate the effectiveness of CALFED's restoration program. Not only do we currently lack many of the project descriptions to be undertaken by CALFED, but we have a shortage of measuring sticks to determine when we have achieved a specified goal once the money has been spent. The CALFED program must incorporate milestones and objective measurements that define the future essentials of success as well as when specific goals have been met.

The Committee is concerned that the Federal agencies involved in the CALFED program are not coordinating the myriad of activities going on in the watersheds under restoration. I am currently discussing with the congressional support agencies a way to determine how fundings are currently being accounted for and how an effective cross-cut budget should be prepared. Last night we receive the long-awaited program-level cross-cut budget for the expenditures dedicated to the CALFED program. Today I seek Secretary Babbitt and Secretary Nichols' commitment to develop the more comprehensive project-level cross-cut budget, which identify all Federal and State expenditures being allocated to achieve the objectives being pursued by the CALFED program.

Our existing water management systems can no longer provide a sufficient reliable water supply to meet the needs of the environment and our current water users. How are we going to develop the process to meet the future California urban, rural, agriculture, business, labor and environmental water needs if we can't even meet our current needs? Conservation, transfer and adaptive management are part of the solution, but they are not enough by themselves.

Storage needs must be addressed immediately for two reasons. First, the demand for water in California currently exceeds the supply during normal years, and according to the California Department of Water Resources and CALFED's own documents, this shortage will grow to between 3 and 7 million acre-feet a year in the year 2020. If we do not immediately begin to address these needs, we will lose the valuable time necessary to prepare for this occasion.

Twenty years ago computer programmers knew the phenomenon we now call the Y2K bug, and they knew that would have to be addressed, yet policymakers failed to act until very recently. The results are far greater costs and the risks of significant dislocations. Surely we have the wherewithal to avoid these mistakes in water.

I do not believe that these concerns present insurmountable obstacles. Rather, they represent reasonable attainable goals which should reflect the way government conducts its business. The CALFED partnership represents potential funding in the billions of dollars. It has the potential to be used to enhance the water quality and environmental resources in the Bay-Delta as well as for other water resource activities in California. Yet how it is administered will be a test of government's ability to transition to a smarter, more efficient, less coercive mode of operation.

Finally, I believe that we need to continue our scrutiny of the Central Valley Project Improvement Act. The implementation of this Act not only has a significant impact on the CALFED program,

but it also is an indication of whether or not the government can approach these water problems in a constructive manner or will continue to do so with a heavy hand.

In my conversation yesterday with Secretary Nichols I was encouraged with the spirit of cooperation that she extended. I look forward to hearing the testimony and discussing the future of California's water management with the witnesses and will now recognize our Ranking Member Mr. Dooley for his statement.

[The information may be found at the end of the hearing.]

STATEMENT OF HON. CALVIN M. DOOLEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. DOOLEY. Thank you, Mr. Chairman. I want to thank you for holding this hearing today to review the status of the CALFED process and the implementation of the Central Valley Project Improvement Act. These two efforts are closely interwoven, and both will have a profound impact on the future of California.

I would also like to thank all of our witnesses today for their participation. My constituents are greatly affected by the CVPIA and have been active participants in the CALFED process because they recognize that resolving the environmental problems associated with water project development is the key to restoring and ensuring an adequate and reliable water supply for the future.

I continue to believe that a well-functioning, collaborative process such as CALFED remains the most effective approach to finding a long-term solution that addresses California's water supply and water quality needs while simultaneously protecting and restoring this State's unique ecosystems. From my perspective, a well-functioning process is a balanced one that produces tangible benefits for all participating stakeholders.

It is clear to me, as I hope it is to all those involved, that this process will not succeed if major concerns of key stakeholders remain unaddressed. It is also important that we recognize that all policy decisions affecting California's water supply have an impact on our ability to devise a long-term solution through the CALFED process. In that regard I have been impressed and encouraged by the cooperative spirit displayed by the stakeholders with respect to the appropriations request, and I have also greatly appreciated remarks by Secretary Babbitt in recent months which indicated a continued commitment to a balanced process that addresses water supply and quality concerns while we pursue ecosystem restoration. And I would just like to recognize that if it wasn't for the active and personal involvement of Secretary Babbitt, I think we might not have had the CALFED process maintain the momentum that it was able to achieve in the last year, and I am deeply gratified and indebted to your effort there.

I'm also very pleased with the new State administration in California, who is represented here today by Secretary Nichols, who also in the first few months of their administration have been very constructively engaged, and I'm very confident about the leadership that you're going to provide in the upcoming years. I look forward to this leadership and being a partner in this effort and as we move towards a balanced, long-lasting and environmentally sound response to California's water supply and water quality needs.

[The information may be found at the end of the hearing.]

Mr. DOOLITTLE. Mr. Miller.

STATEMENT OF HON. GEORGE MILLER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. MILLER. So I don't shock people, but I would like to associate myself with Mr. Dooley's remarks, and if I could include my opening statement in the record.

Mr. DOOLITTLE. Yes, without objection, so ordered. And that will certainly be the case for any of the other Members who wish to incorporate their statements into the record.

[The prepared statement of Mr. Miller follows:]

STATEMENT OF HON. GEORGE MILLER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. Chairman, I appreciate the participation of Interior Secretary Bruce Babbitt, Assistant Secretary Patricia Beneke, California Resources Secretary Mary Nichols, and all other witnesses who will participate in today's hearing. We have an ambitious schedule today, and my remarks will be very brief.

The timing of this hearing is certainly interesting:

- A Federal judge in Fresno has just ordered the Interior Department to comply with the Central Valley Project Improvement Act.
- The United States Supreme Court just refused to intervene in the case involving the Friant Unit contracts.
- The long-awaited Flow Study for the Trinity River will be released, perhaps as early as next week.
- And CALFED will reach another milestone in a few weeks when the revised draft EIS/EIR is released along with the draft preferred program alternative.

The convergence of these California water events is a reminder that California water issues are a reflection of the vibrant growth and energized nature of our State. Nowhere else in the West is water truly a statewide issue with direct impacts on the daily lives of tens of millions of people. We have a real opportunity in California to demonstrate our ingenuity and to devise the best and most creative ways to use our water resources responsibly. The CVPIA and CALFED are the tools we have at our disposal, and we have to make them work together.

I continue to support the goals of the CALFED program, and I will work hard to secure the funding we have requested for the coming fiscal year. I hope we can get the entire California delegation to support us. The CALFED team has very effectively responded to the concerns raised during the last budget cycle.

I also look forward to working with Chairman Doolittle, the California Delegation, and the CALFED stakeholder community, to promptly enact legislation to extend the spending authority for the CALFED Bay-Delta programs. We cannot put this critical program at risk by allowing the funding authority to expire.

While there are many benefits associated with the CALFED process, we have to keep a close eye on where we are regarding implementation of the CVPIA. The CVPIA is designed to make basic changes in the priorities of Federal water policy in California, changes that inevitably impact traditional water uses and water users. Implementation of the law has been proceeding, but at a slower pace than many of us would prefer. I am working closely with Secretary Babbitt as we close the gaps on CVPIA implementation, and I am confident the fundamental precepts of this law are sound and that challenges to the implementation of the law will not prevail.

There are too many issues, and not enough time. I appreciate the cooperation of everyone who participates in the development of CALFED and the constructive implementation of the CVPIA. I look forward to hearing the statements of our witnesses today.

[The information may be found at the end of the hearing.]

Mr. DOOLITTLE. We have our distinguished first panel. I would like to ask them to please rise and take the oath, and then we'll begin.

Will you raise your right hands, please.

[Witnesses sworn.]

Mr. DOOLITTLE. Thank you.

We welcome you both here today and appreciate your making yourselves available to address these important issues.

Our first witness will be our Secretary of the Interior, the Honorable Bruce Babbitt, Secretary Babbitt.

STATEMENT OF HON. BRUCE BABBITT, SECRETARY, DEPARTMENT OF INTERIOR, ACCOMPANIED BY PATRICIA BENEKE, ASSISTANT SECRETARY, DEPARTMENT OF WATER AND SCIENCE, DEPARTMENT OF INTERIOR

Secretary BABBITT. Mr. Chairman and Committee members, I come today grateful for the Committee's hearing and inquiry into the status of these related issues. I think it is very important and very timely, and I think I speak on behalf of all the CALFED participants in saying we welcome the increasing involvement of this Subcommittee and other portions of the United States Congress in this issue.

The reason I emphasize that is because this is, in fact, a new type of water management and development. It is a—what is going on here represents a quite dramatic break from the tradition of water development, which occupied so much time of all the participants during the century past. Now, it's not surprising that California becomes, if you will, the lead ship in making this transition precisely because of the importance of water resources in the State of California.

The process that gave rise to CALFED and which now drives this new kind of water project, in my judgment, is working very, very well. The stakeholders, for reasons that I will comment upon, are actively and deeply involved. It began in the Wilson administration with a strong commitment from the political leadership, the Governor and the legislature. We have made a remarkably effective and seamless transition with the coming office of the Davis administration, and I am particularly pleased with the Governor's choice of Mary Nichols as his resource Secretary. We have worked together on these issues for many, many years, and I'm confident that together we are going to make this process work and, with your help, bring in to being an entirely new way of meeting the needs of all of the stakeholders in a process which you have emphasized correctly, I think, that we need to see improvement on all fronts in terms of the needs of all the stakeholders.

The reason, if I may elaborate briefly, that this process and this departure, if you will, this new chapter of water resource management opened in California is precisely because we had reached an absolute impasse in water future of the State through years of contention, of impasse, of litigation. Finally, all of the stakeholders came to one very basic conclusion, and that was simply that each one of the stakeholder groups has absolute power to frustrate any motion in any direction. Every stakeholder here today has demonstrated beyond a doubt its veto power over motion in any direction, and the stakeholders have finally discovered that that's not just a temporary phenomenon. That veto power that has been given to stakeholders by the people of California represents a cultural change which is here to stay. And out of that we have put together a process which recognizes that reality and says we are

going to sit down in this most excruciating process and find consensus, which is in the manifest interest of each group. I elaborate on that because I think it's of extraordinary importance in the dynamic of this.

Now, Mr. Chairman, I see a yellow light, and if I am held to that, I will simply stop right there.

Mr. DOOLITTLE. Mr. Secretary, let me say for this first panel with you and Secretary Nichols, we will be liberal in our application of those lights. So you can just continue and just whatever you want to say——

Secretary BABBITT. That is the first time I have ever heard that word from your lips——

Mr. DOOLITTLE. And you won't hear it often.

Secretary BABBITT. [continuing] with a positive connotation. Okay.

Now, the progress that we're making in the CALFED process brings us back to the United States Congress with some very different sets of issues that I think very much are going to challenge our ability to keep this going, because it's going to require a different kind of process and response not only in the administration, but also in the Congress, because what we have moving forward now is a process of multiple parties which gives rise to some extraordinary budget issues, which you have very properly identified, which in turn call forth a lot of new motion on the concept of cost-sharing.

The reason that I believe California is moving to the head of the line is because of—well, in part, I guess, nobody has overlooked the fact that there are 54 Members of Congress from California. Is that the current figure? Correct? But it's not a lot more than that. It's about a message from Sacramento, and the message is cost-sharing. And I believe that that fact is going to increasingly drive priorities in this Congress. And the State of California under the Wilson administration and the Davis administration has demonstrated extraordinary capacity, the bond issue of 1994, in the forthcoming bond debate and in the appropriation process, that it is committed to that partnership. Now, in the last 2 or 3 years, that commitment on both sides of this partnership, in the Congress and in Sacramento, has been made on the basis of continuing confidence in the progress that we can make with this consensus-driven process.

You have already mentioned the concepts that are working on a daily basis in this process: efficiency, markets, systemic changes, the integrated supply study, which I'm sure you will want to talk about at some more length. And the fact is that you can see the progress that's being made out on the ground. It's happening right now. The increased flexibility of the Delta issues that have been dealt with in the south Delta in terms of improving the conveyance system are now under way. The fish screening process is working. Go up to Butte Creek, you'll see something really extraordinary. If I were to say to the press and to Californians, you want one specific example of what's happening, go to Butte Creek. It is a sight to behold. It is a statement that we can restore these fisheries consistent with stabilizing and guaranteeing agricultural water supplies and stabilizing and making more predictable the urban water supplies as well.

Now, what I would like to do is leave CALFED, because your resource secretary will devote her remarks to some of the details that are unfolding in this very powerful and very unique state of Federal partnership. I would like to just say a word about two other components. One is the Central Valley Project Improvement Act, and the third is the Trinity River.

The CVPIA is now unfolding at an accelerated rate. This has been a very tough issue. It's been at the top of my agenda for 7—nearly 7 years. I find it hard to believe that I have been coming up here for 7 years, and I don't know whether to celebrate or lament the fact that I am now near the end of this process. But nonetheless, in the 7 years we have worked this stakeholder process to the point that the programmatic EIS framework for implementation of the Central Valley Improvement Project will be completed during this year for accelerated implementation in 2000 and beyond.

As you look across the landscape, you will see the negotiations over water service contracts are now under way, and I believe taking shape nicely. That's a tough issue because it involves the water resource for 90 percent of the agricultural water delivered by the Central Valley Project. If you go out into Westlands, I think you will see a remarkable arrangement there that was worked out under the mandate of the land retirement issue out there, which was mandated by the CVPIA because of the drainage and salinity problems in that district. We have worked out a process in which land has been retired, support of the land owners and the district, and the water has been redeployed in a way that I believe is generous to the district and helpful to the stability of agricultural water supplies. So to put it more directly, we bought the land, and the district retains the water. It is, I believe, a thoughtful and useful way of going about this.

There is now (b)(2) water flowing in the system in aid of fisheries. There are a variety of other issues. There is litigation over the exact extent of the so-called (b)(2) obligation. I don't think there's any reason to get too excited about that. There is always litigation. I guess my ultimate dream is the consensus would reach the point where we absolutely all of us foreswore hiring litigators or even going near the courts. We're not quite there, but the CVPIA is working. It can be made to work. The process is under way. And we are acutely aware of the need to interface the CVPIA with the CALFED process, because in the final analysis, they are both aimed in the same direction. And I would just repeat that one more time, that is that we can manage this system with not just a few tools; all the tools at our disposal, conservation, efficiency, reuse, transfers, and storage.

Lastly, a word about the Trinity River. The hydrological studies of the Trinity River Basin will be released next week. Now, briefly a bit of history. The Trinity River studies have been under way for nearly 20 years. This is not a new issue. There was both legislation and administrative action taken clear back in 1980. The issue was simply this: The Trinity Diversion Project, which takes water from the Trinity River into the—into Trinity Lake and across to Whiskey Town and down the Sacramento River in some years was—was

and is diverting as much as 90 percent of the flow of the Trinity River.

That was a project which was authorized and completed under the rules of the century past, and what I mean by the rules of the century past is that project was authorized and completed with no consultation with the Yurok and Hupa tribes as to their entitlement under the Federal reserve rights doctrine. It was completed with no studies about the fisheries issues, and the fisheries have collapsed. The reduction in anadromous fish in the system, I think, is about the same as the water, about 90 percent, and that's what gave rise to the studies. Now, the Central Valley Project Improvement Act mandated, didn't ask, it didn't encourage, it gave us an explicit mandate to restore the fisheries. That's what this study is about.

Now, lastly, a word about the study. I predict that the California press, although it is among the most enlightened, progressive, insightful, studious of all media people in the entire world, is going to be sorely tempted to write a story saying X acre-feet of water are put back into the Trinity River, and that means the following reduction in supply to the Central Valley. Anybody want to take me on that, lay some odds? That's the headline next week. Now, that's not what this is about. This is about a study showing hydrographic models related to fisheries biology. That study will be translated into an environmental impact statement which will be done in the course of this year and will be the predicate for a decision.

There will be a lot of issues between the boat and the dock in this case that relate to how you manage stream flows: The profile of the stream hydrograph, the amount of water that's necessary in dry years versus wet years, and the relationships between the storage capacity in the Trinity-Whiskey Town system and how that relates to annual flows. So what I am saying is before people pick up weapons and head into battle, remember it's not anything more than a study. It has lots of possible scenarios, and we are dedicated to trying to make this process work.

Mr. Chairman, I have egregiously exceeded my time. I think even I know that there are limits to liberalism. So thank you very much.

Mr. DOOLITTLE. Thank you, Mr. Secretary. I haven't often heard that acknowledgment, but I'm pleased to note it.

[The prepared statement of Secretary Babbitt follows:]

TESTIMONY OF
SECRETARY OF THE INTERIOR BRUCE BABBITT
BEFORE THE HOUSE RESOURCES COMMITTEE
SUBCOMMITTEE ON WATER AND POWER
ON THE CALFED AND CVPIA PROGRAMS
MAY 20, 1999

INTRODUCTION

I am pleased to appear before this Subcommittee to testify in support of the CALFED Bay-Delta and CVPIA Programs. The CALFED Bay-Delta Program is a cooperative effort among public, state, and federal agencies to address the water management and environmental problems associated with the Bay-Delta system. The Central Valley Project Improvement Act (CVPIA) mandates specific management changes to the Central Valley Project (CVP) to place fish and wildlife on an equal footing with other project purposes, and requires Interior to implement an extensive program of environmental restoration. The CVPIA provided a foundation for Interior's support of the Bay-Delta Accord and the CVPIA's activities complement our participation in the CALFED Program.

CALFED HISTORY AND BACKGROUND

The CALFED Bay-Delta Program is a response to the urgent and significant problems being experienced within the Bay-Delta system, which is at the heart of all discussions of California present and future water supply. Located at the convergence of the discharge of the Sacramento and San Joaquin Rivers into the San Francisco Bay, the Bay-Delta is a maze of waterways and channels that carry over 40 percent of the State's total runoff into the Bay. This equates to drinking water for more than 22 million Californians, critical habitat for over 750 plant and animal species and irrigation water for a $27 billion agricultural industry that feeds into the State's trillion dollar economy. In short, what affects the Delta affects the State. Today, the Delta is in trouble. Over the past decades, we have witnessed declines in water quality, in species habitat, and numbers, and in the reliability of water supplies.

In December 1994, the State and Federal governments signed the Bay-Delta Accord, which signaled a new approach to managing the Delta and initiated the CALFED Program to restore the Bay-Delta's ecological health and to improve water management for beneficial uses of the Bay-Delta. The CALFED Program is a cooperative planning and coordination effort among ten Federal agencies -- U.S. Environmental Protection Agency, National Marine Fisheries Services, U.S. Forest Service, Natural Resources Conservation Service, U.S. Army Corps of Engineers, Western Area Power Administration, and within the Department of the Interior, the Bureau of Land Management, the U.S. Fish and Wildlife Service, the U.S. Geological Survey, and U.S. Bureau of Reclamation -- and five State Agencies -- the Resources Agency of California, Department of Water Resources, the Department of Fish and Game, the State Water Resources Control Board, and the California Department of Food and Agriculture.

ACCOMPLISHMENTS

The CALFED Program has been proceeding in a three-phase approach to accomplish its mission.

Phase I

During Phase I, which was completed in 1996, the CALFED Program defined the problems confronting the Bay Delta, developed goals and objectives to address these problems, and selected three alternatives for further analysis in Phase II.

CALFED Goals and Objectives. CALFED identified ecosystem and water quality, water supply reliability and levee integrity as the four major problem areas in the Bay-Delta. The following objectives were developed to address each of the problem areas.

- Improve and increase aquatic and terrestrial habitats and improve ecological functions in the Bay-Delta to support sustainable populations of diverse and valuable plant and animal species.

- Provide good water quality for all beneficial uses.

- Reduce the mismatch between Bay-Delta water supplies and current and projected beneficial uses dependent on the Bay-Delta system.

- Reduce the risk to land use and associated economic activities, water supply, infrastructure, and the ecosystem from catastrophic breaching of Delta levees.

Alternatives. To meet the objectives for achieving long-term solutions to the problems of the Bay-Delta, three alternatives were selected for further analysis during Phase II. The alternatives can be summarized as follows.

- **Alternative 1 -- Existing System Conveyance.** Under this alternative, the Delta system would be modified and would continue to be used to convey water. Modifications would include: enlargement of one channel; installation of flow control, fish control barriers, and fish screens; and development of up to 6.25 million acre-feet of water storage using both surface (5.5 million acre-feet) and ground water (750 thousand acre-feet).

- **Alternative 2 -- Modified Through Delta Conveyance.** This alternative would also improve and continue the use of Delta channels to convey water. Modifications would include: enlargement and modification of channels; construction of set back levees; flooding of Delta islands (the McCormack-Williamson Tract); development of an isolated shallow channel; installation of flow control, fish control barriers, and fish screens; and development of up to 6.25 million acre-feet of water storage using both surface (5.5

million acre-feet) and ground water (750 thousand acre-feet).

- **Alternative 3 -- Dual-Delta Conveyance Alternative.** This alternative would continue the use of Delta channels to convey some water, but would also include the addition of a new channel around the east side of the Delta to move water. Modifications would include: construction of an open-channel; isolated water conveyance facility; potential channel modifications; installation of flow control, fish control barriers, and fish screens; and development of up to 6.25 million acre-feet of water storage using both surface (5.5 million acre-feet) and ground water (750 thousand acre-feet).

Category III Activities. Along with the development of objectives and the selection of alternatives for further analysis, the CALFED Program established a process for selecting activities that could be initiated and funded as part of the Bay-Delta Accord's commitment to develop and fund related ecosystem restoration activities in advance of selection of the preferred alternative, but consistent with NEPA. The funding for these activities, generally referred to as Category III, is coordinated by the CALFED Program staff to ensure that activities funded under Category III are integrated with the overall long-term CALFED Program for ecosystem restoration.

Phase II

Under Phase II, which is now underway, Category III ecosystem restoration activities are proceeding while programmatic environmental documents are being developed and finalized. In 1997, a process to guide allocation of Category III funds was developed by a CALFED committee with input from stakeholders. The administration of this process was delegated to the CALFED Restoration Coordination Program.

Ecosystem goals presented in the Strategic Plan for Ecosystem Restoration will guide the program during its implementation phase. Strategic goals include the following: (1) achieve recovery of at risk native species; (2) rehabilitate natural processes in the Bay-Delta system to support environmental communities; (3) maintain and enhance species for commercial and recreational harvest; (4) protect or restore functional habitat types throughout the watershed; (5) prevent establishment of invasive species; and (6) improve and maintain water and sediment quality. The Ecosystem Restoration Program (ERP) addresses these goals through restoration of ecological processes associated with streamflow, stream channels, watersheds and flood plains. To implement these goals, qualitative and/or quantitative targets were developed for each distinct ecosystem type and segment of river. Targets are categorized according to three levels of certainty: (1) targets that have certainty of success; (2) targets which will be implemented in stages; and (3) targets for which additional research and evaluation are needed. For example, a target for tidal perennial aquatic habitat is to restore 1,500 acres of shallow-water habitat in the Suisun Bay and Marsh Ecological Unit, and restore 1,000 acres of shallow-water habitat in the San Pablo Bay Unit. When selecting ERP projects, CALFED relies extensively on the goals and priorities in the ERP. AS ERP projects are completed, monitoring will inform us of their

individual and collective contribution to achieve the overall goals.

To ensure that these objective standards and measurable goals are met, CALFED also developed a Comprehensive Monitoring Assessment and Research Program (CMARP).

In addition, the Program will identify a preferred alternative and is conducting the environmental review process which will culminate in a Record of Decision which is expected by June 2000.

Over the last 3 years, CALFED has funded all or portions of ecosystem restoration projects/programs totaling $228 million, of which $150 million was funded by the Federal Bay-Delta Account. Funded projects included fish screens and ladders, land acquisition, habitat restoration, research and monitoring. As of April, 1999, over $76 million has been obligated from the Federal Bay-Delta Account and $11.6 million expended on the of CALFED Ecosystem Restoration Program as follows:

California Bay-Delta Ecosystem Restoration Account
(dollars in thousands)

Project/Program Categories	Total Allocated through April 30, 1999	Total Obligated through April 30, 1999	Total Expended through April 30, 1999
Fish Screen Improvements	$2,539	$2,539	$80
Fish Passage Improvements	42,353	3,909	428
Habitat Restoration in Flood plains and Marshes	41,652	32,842	8,127
River Channel Changes	14,884	9,624	243
Improved In-stream Flows	14,500	14,450	0
Water Quality and Temperature Improvement	8,803	5,003	811
Introduced and Undesirable Species Control	1,250	1,250	0
Improved Fish Management and Hatchery Operations	625	625	0
Watershed Management	4,198	2,253	69
Monitoring, Permit Coordination, and Other Special Support	9,556	3,432	1,545
Miscellaneous Expenses/Administration	9,469	301	301
Pending April 16, 1999 due date for Public Solicitation Process	10,171	0	0
TOTAL	$160,000	$76,228	$11,604

Examples of accomplishments by Federal agencies during fiscal year 1998 include:

- Acquisition by the U.S. Fish and Wildlife Service of 2,300 acres of riparian and floodplain habitat along the San Joaquin River to allow for widening of the floodplain, facilitation of ground water recharge and development of habitat.

- U.S. Bureau of Reclamation funding of the acquisition of 63 acres of diked historic wetlands along the Napa River to restore the habitat.

- Acquisition by The Nature Conservancy of 1,969 acres along the Cosumnes River to protect and expand tidal and seasonally flooded wetlands, the riparian corridor, and farmland of high habitat value.

- Execution of an agreement by the U.S. Fish and Wildlife Service to acquire 4,760 acres of riparian and wetland habitat at Liberty Island to improve water conveyance and restore tidally influenced habitat.

In addition to these accomplishments, the following three examples illustrate the nature and scope of the CALFED Ecosystem Restoration Program:

- **Battle Creek Project.** Battle Creek is a cold, spring-fed stream with constant high flows during the dry season (250 cubic feet per second) making it the only Sacramento River tributary resistant to drought. Its remote, shaded canyons are similar to the once-productive salmon streams now blocked by Shasta Dam. Extensive historical records document Battle Creek's enormous potential for supporting all four races of salmon and steelhead. Historic construction of dams which are important for California's growth and economy, have been devastating to California's anadromous fish populations. The Battle Creek Project will improve fish passage to 42 miles of historical habitats by removal of some dams and modifying others. To date, CALFED agencies have provided $28 million through the Federal Bay-Delta Account for this project. CVPIA has funded the acquisition of water for increase of streamflows and the installation of a water treatment facility at Coleman National Fish hatchery to protect the hatchery's water supply from disease borne by wild fish restored to the upper watershed.

- **Butte Creek Restoration**. The ecological health of the Bay-Delta depends on ecological processes and functions, habitats, and fish and wildlife species present within its tributary watersheds which includes Butte Creek. Fall and spring-run chinook salmon and steelhead trout live and spawn in Butte Creek, which is one of only three major spawning streams for spring-run chinook salmon in California. In recent years, the spring-run chinook populations had fallen to a range of from 200 to 1,000 adults. The decline of Butte Creek's anadromous fishery is attributed to many factors, such as unscreened diversions, agricultural drains, diversion dams and barriers, poor water quality, low flows and

poaching. CALFED agencies provided more than $5.6 million for fish screens, fish passage and small dam removal, watershed support, and general restoration activities, to supplement $8.5 million of CVPIA funds on Butte Creek. Many of the actions were implemented in partnership with CVPIA because Butte Creek restoration is a high priority for both programs. Through combined private and public efforts, cost-shared fish passage improvement projects have been completed on Butte Creek. In 1995, more than 8,000 spring-run salmon returned to Butte Creek, demonstrating its potential to attract a large number of spring-run salmon. In 1998, the spring-run returns were more than 20,000 adult fish. With this phenomenal turnaround, it seems clear that continuing support for this program can continue progress for this watershed.

- **Major and Small Screening Programs for Fish Protection**. Diverted water provides irrigation for more than 200 different crops, drinking water for two-thirds of Californians, and water for refuges and other wetland habitat areas. Fish and aquatic organisms are pumped into water diversions and, in most cases, entrained organisms do not survive. Some diversions have screens that exclude most juvenile and adult fish; however, eggs and larval fish, invertebrates, planktonic plants organic debris, and dissolved nutrients are lost to diversions. The conflict between the loss of important environmental components and the need to divert water for beneficial uses is an important issue for the CALFED Program. Because of the magnitude and significance of this conflict and its potential to adversely impact California's natural resources, economy, and livelihood, the CALFED Program is aggressively reducing the adverse effects of water diversions. CALFED agencies have provided more than $34 million towards the reduction of the adverse effects of water diversions, supplementing $59.1 million of CVPIA funding for the same purpose. When all the projects funded through the CALFED Program have been installed, nearly 75 percent of the diverted water from the upper Sacramento River will pass through screens.

Project Accountability. All of the ecosystem restoration projects funded by the CALFED Program require: (1) the identification of primary ecological/biological objectives; (2) identification of primary stressors, species, and/or habitats that are the focus of the project; and (3) quantification of the expected benefits. Seventy-five percent of the projects selected focus on actions which benefit the identified highest priority species, including delta smelt, splittail, chinook salmon, steelhead, and long-fin smelt. Additional priority is given to support recovery of other listed water, wetland, and riparian dependent species in Bay-Delta. In addition, project proponents must outline the nature and basis for durability of the benefits resulting from project implementation and indicate how the project meets those objectives.

The U.S. Geological Survey and other agencies have developed the Comprehensive Monitoring, Assessment, and Research Program (CMARP) that outlines standard procedures for long-term monitoring to measure the effectiveness of the CALFED Program over time. The purpose of the CMARP is to build on the work of the Interagency Ecological Program (IEP), the on-going Federal-State monitoring program for the Bay-Delta, and the Central Valley Project Improvement Act's Comprehensive Assessment and Monitoring Program (CAMP), which has been conducting

a substantial monitoring effort in the Bay-Delta for several years. The CMARP report will be an appendix to the revised draft EIR/EIS.

Environmental Review Process. CALFED is scheduled to release a draft preferred alternative program and a comprehensive programmatic environmental statement in June. The preferred alternative outlines strategies for improving ecosystem and water quality, water supply reliability, and levee system integrity.

Draft Preferred Program Alternative. The draft Preferred Program Alternative consists of eight program elements which, though described individually, must be coordinated and linked in an incremental implementation process to effectively resolve problems in the Bay-Delta system. These eight program elements are:

1. **Levee System Integrity Program**. This program will improve Delta levee stability to meet Public Law 84-99 levee standards, implement current best management practices to correct subsidence adjacent to levees, develop an Emergency Management Response Plan based on existing State, Federal and local programs, complete a Delta levee risk assessment, and rehabilitate Suisun Marsh levees. Water supply reliability will be protected by maintaining levee channel integrity while levee actions will be designed to provide simultaneous improvement in Delta habitats for fish, birds, plants, and other wildlife.

2. **Water Quality Program**. This program aims to reduce the loads and or impacts of pesticides, trace metals, salinity, organic carbon, pathogens, nutrients, and turbidity through a combination of measures that include education, source reduction, water source alternatives, water treatment, storage, and if necessary, conveyance improvements, such as a screened diversion structure up to 4,000 cubic feet per second on the Sacramento River at Hood.

3. **Ecosystem Restoration Program**. This program has worked to improve and increase aquatic and terrestrial habitats in the Delta while improving ecological functions in order to support sustainable populations of diverse and valuable plant and animal species. Restoring and managing habitat, restoring channel forming flows, improving Delta spring outflows, reestablishing Bay-Delta associated flood-plain areas, developing flood control bypasses, and modifying or eliminating fish passage barriers, along with other actions, are designed to improve the health of the ecosystem and reduce the conflicts between environmental water and other beneficial uses while providing more flexibility for water management decision makers. Specific actions will include: an environmental water account to provide flows and habitat conditions for fish protection; and recovery and development of an assessment, prevention, and control program for invasive species.

4. **Water Use Efficiency Program**. This program's goal is to increase the efficient

use of water supplies to reduce the environmental impacts associated with water diversion. Education programs will focus on water suppliers and users informing these groups about the need for water use efficiency in the Bay-Delta and the methods available for establishing and assessing conservation plans. Additionally, the program will assist regional agencies in complying with water conservation and recycling requirements under the Urban Water Management Planning Act, identifying region-specific plans for agricultural areas, and defining measurable objectives to assure improvements in water management.

5. **Water Transfer Program**. This program will facilitate water transfers and further development of a state-wide water transfer market. The program aims to establish a State Water Transfer Clearinghouse while standardizing requirements for water transfer proposals and streamlining the water transfer approval process. Additionally, this program will assist in the establishment of new accounting, tracking, and monitoring methods to aid in-stream flow transfers under California law.

6. **Watershed Program**. This program seeks to provide financial and technical assistance to local watershed programs to benefit the Bay-Delta. These actions can improve system reliability by shifting the timing and quantity of flows, increasing base flows, and reducing peak flows. Additionally, the program will support conservation education at the local watershed level, providing organizational and administrative support to watershed programs.

7. **Storage**. Ground or surface water storage can be used to improve water supply reliability, provide flows to maintain water quality and downstream habitat, and protect levees through coordinated operation with existing flood control reservoirs. Decisions to construct groundwater and/or surface storage will be predicated on complying with all program linkages. New ground and/or surface water storage will be developed and constructed together with aggressive implementation of water conservation, recycling, and a protective water transfer market, as appropriate, to meet CALFED Program goals. During Stage 1 of the implementation process, CALFED agencies will evaluate and determine the appropriate mix of storage and initiate permitting and construction.

8. **Conveyance**. Modifications in Delta conveyance are designed to improve water supply reliability, protect and improve Delta water quality and ecosystem health, and reduce the risk of water supply disruption due to catastrophic breaching of Delta Levees. Through-Delta conveyance actions include new screened diversions, construction of new set back levees, construction of barriers, and changes to State Water Project operating rules to allow full capacity export of water. Specific actions will include: (1) construction of a new screened intake at Clifton Court Forebay and either a new screened diversion at Tracy or an

expansion of the new screened intake at Clifton Court to meet Tracy Pumping Plant export capacity; (2) implementation of the Joint Point of Diversion for the State Water and Central Valley Projects and construction of interties; (3) construction of an operable barrier at the head of Old River to improve conditions for salmon migrating up and down the San Joaquin River; (4) construction of operable barriers or their equivalent, taking into account fisheries, water quality, and water stage needs in the south Delta; and (5) determination of operating criteria for the Delta Cross Channel.

Programmatic EIR/EIS Timeline. Since the CALFED Bay-Delta Program consists of both State and Federal entities, the plan must meet the requirements for identifying potential impacts contained in both the State's California Environmental Quality Act (EIR) and the Federal National Environmental Policy Act (EIS). The analysis presented in the programmatic EIR/EIS provides information to decision makers and the public on the range of possible environmental consequences associated with each of the program alternatives. Public participation is an essential part of the CALFED Program, and public feedback has been solicited on all aspects of the Program, including goals, plan formulation objectives, priorities, and implementation of the preferred program alternative.

The schedule for completing the EIR/EIS is as follows:

June 1999	Release Draft EIR/EIS, followed by 90-day public comment
April 2000	Release Final EIR/EIS, followed by 30-day public comment
June 2000	Record of Decision for final programmatic EIR/EIS

FUTURE IMPLEMENTATION

Program implementation will begin in Phase III, following completion of the final programmatic EIR/EIS. The CALFED plan is expected to take 25 to 30 years to complete. Implementation is roughly divided into three stages, with Stage 1 lasting 7 years.

Phase III. Site specific, detailed environmental review will occur during Phase III prior to the implementation of each proposed action. Stage 1 actions will be grouped into a series of "bundles" to provide additional assurances for balancing benefits. For example, a bundle of actions could include levee work, habitat improvements, water quality work, and facilities and operations to improve water supply reliability. Linking the actions will help assure that progress is made in all areas. Actions may be linked within the same project EIR/EIS by contractual documents, funding or other means. The following key Program issues will be addressed during implementation:

Land Use. CALFED seeks to preserve as much agricultural land as possible during implementation, consistent with meeting all Program goals. The government already owns some of the land needed for Program implementation, and that land will be used when

appropriate. To date, CALFED Ecosystem Restoration projects have been implemented on 33,526 acres. Farming and grazing activities continue on 68% of those lands. Of those lands, 13% (4,211 acres) were previously farmed and have now been converted to fish and wildlife habitat (see table below). Partnerships with landowners, including easements with willing landowners, will be pursued when appropriate to obtain mutual benefits if the appropriate government land is not available. Acquisition of fee title to land will be from willing sellers only and will be used when neither available government land nor partnerships are appropriate or cost-effective for the specific need.

LAND USE	ACRES	PERCENT
Lands where all or part are maintained in existing agricultural use - farmed or grazed	22,938	68
Existing habitat or restoration of public lands or existing degraded habitat - no LAND USE change	6,377	19
Agricultural lands converted to wildlife habitat	4,211	13
Total	33,526	100

When agricultural lands are considered for ecosystem restoration purposes, CALFED seeks to maintain the lands in private ownership, achieving habitat values through the use of conservation easements. In addition, agricultural lands which are lower in value because of soil type, hydrology, location, lack of economic viability, or susceptibility to damages are sought over high value or prime agricultural lands.

Storage. CALFED agencies are committed to developing a balanced, integrated water management strategy that ensures that all appropriate water resources management tools, including water use efficiency, water transfers, conveyance facilities, and ground water and surface storage opportunities are available to achieve CALFED's water supply reliability goals. The appropriate mix of surface and ground water storage will be determined during Stage 1 of program implementation. The target volume for ground water banking is 500,000 acre-feet of storage. The CALFED Program will focus on consideration of off-stream reservoir sites for new surface storage, but will consider expanding existing on-stream reservoirs. CALFED has reduced the number of potential surface storage sites from 52 to 14, and the list will be further narrowed to 3 to 5 by the time of Program certification. Should new surface storage be considered necessary to meet CALFED goals, site selection would take place in the fourth and fifth years of Program implementation.

Water User Benefits. Meeting the objectives of the CALFED Program will provide numerous benefits to water users. These benefits include:

- Ensuring a reliable water supply to farmers and environmental and urban users by reducing water diversion conflicts between environmental and consumptive uses, decreasing drought impacts, increasing water supply availability and operational flexibility, and creating an environmental water account to provide flexibility in fishery recovery.

- Providing good water quality for all beneficial uses, including safe and affordable drinking water that meets or exceeds applicable drinking standards.

- Ensuring the integrity of Delta levees which are essential to the continued success of agricultural activities in the Delta.

Cross-Cut Budget. The Department of the Interior has been submitting quarterly reports to the Congress on how funds provided through the Federal Bay-Delta Account are being used. Those quarterly reports have also included tables prepared by CALFED Program staff that track funding from all sources -- Federal, State and other --contributing to the CALFED Bay-Delta Program ecosystem restoration goals. A copy of the latest table has been provided to the Subcommittee. These tables represent a good start on tracking all State and Federal funding for environmental restoration efforts in the Central Valley and Bay-Delta. In addition, we intend to expand their scope as we move into implementing the other, non-ecosystem, elements of the CALFED Bay-Delta Program. For that reason, the Secretary of Resources and I will establish a workgroup under the CALFED Policy Group that will make a concerted effort to develop a more comprehensive listing of the State and Federal projects and programs that will be tracked in the future.

The Federal funding in the FY 2000 President's Budget that would contribute to the CALFED Bay-Delta Program ecosystem restoration goals may be summarized as follows:

U.S. Bureau of Reclamation	$117,192,000
Federal Bay-Delta Account	75,000,000
Water and Related Resources	16,317,000
CVP Restoration Fund	32,246,000

These numbers may increase with updated estimates of Restoration Fund revenues for FY 2000.

The CALFED Bay-Delta program builds on numerous Federal and State programs addressing water management, conservation, and water quality, as well as aquatic species and habitat conservation. Other Department of the Interior agencies supporting the CALFED effort are the U.S. Fish and Wildlife Service and the U.S. Geological Survey. In addition to their routine operation of refuges and habitat management, the U.S. Fish and Wildlife Service requested $2.1 million in FY 2000 to provide technical assistance for activities supporting the conservation and

recovery of migratory birds, sensitive, threatened and endangered species, and other trust species in the Bay-Delta watershed. They also participate in the CALFED program for habitat restoration in areas such as planning, assistance, review, and permitting and implementation. The U.S. Geological Survey request includes an estimated $3.5 million for a variety of studies covering water resources, wetlands, contaminants and salinity, and biological research that will contribute to solutions to the problems in the Bay-Delta.

Agencies outside of the Department of the Interior provide CALFED/Bay-Delta support as follows: the Environmental Protection Agency provides significant funding in Clean Water Act and Safe Drinking Water Act program grants to run its state water programs and to fund related activities. EPA anticipates that the State could use some of the funding to fund certain activities within the water quality portion of this program. EPA is currently involved in the development of wetlands and drainage management projects throughout the Delta and its tributaries. The Natural Resources Conservation Service plans to provide funds to Resource Conservation Districts for riparian, watershed, agriculture water run-off, and other ecosystem restoration activities in the Delta. The National Marine Fisheries Service requested $1.4 million in their appropriation to support a number of relatively small ecosystem related studies in the Delta. And the U.S. Army Corps of Engineers anticipates funding approximately $12.4 million in FY 2000 for ecosystem restoration projects along the Sacramento River that include levee rehabilitation, flood control projects, and restoration of seasonal and permanent wetlands.

THE CENTRAL VALLEY PROJECT IMPROVEMENT ACT

A cornerstone of the Bay-Delta Accord and a baseline for the long-term CALFED Program is the Central Valley Project Improvement Act (CVPIA). The CVPIA made significant changes in the policies and operation of the Central Valley Project (CVP). The CVPIA redefined the purposes of the CVP to include protecting , restoring, and enhancing fish, wildlife and associated habitats, to improve the operational flexibility of the CVP, increase water-related benefits provided by the CVP to the State of California through expanded use of voluntary water transfers and improved water conservation, and to protect the San Francisco Bay/Sacramento-San Joaquin Delta Estuary.

We have made significant progress in implementing the CVPIA since its passage in October 1992 and since the Interior Department last testified before this Subcommittee on March 20, 1997. Let me bring you up to date.

Programmatic Environmental Impact Statement. We are nearing completion on our programmatic environmental documentation undertaken pursuant to the National Environmental Policy Act. The CVPIA requires the Interior Department to examine the direct and indirect impacts and benefits of implementing the provisions of the new law. The draft Programmatic Environmental Impact Statement (PEIS) was released November 5, 1997. The draft PEIS analyzed the impacts and benefits of programs such as CVP operations, long-term contract renewal, land retirement, changes in instream and Delta flows, non-flow actions, fish protection

facilities, and waterfowl enhancement.

A final PEIS was originally scheduled to be released in June 1999. However, the computer model on which the PEIS is based required modifications, which shifted the completion of the final PEIS from June to September. We developed a Preferred Alternative that incorporates different aspects of all the alternatives contained in the draft PEIS. The final PEIS will lay the groundwork for impacts and benefits of fully implementing the CVPIA, such as the execution of long-term water service contracts and the implementation of the final Anadromous Fish Restoration Program plan.

Long-term Contract Renewal. The CVPIA provides for long-term renewal of water service contracts upon completion of the PEIS. To date, Reclamation has successfully negotiated and executed 68 initial interim renewal contracts which have provided for continued water supply delivery and incorporated CVPIA mandates associated with water measurement and water conservation. Many of the interim renewal contractors have executed successive interim renewal contracts. Fifty-four of the 68 interim renewal contracts are scheduled to expire on February 28, 2000.

Reclamation will soon commence negotiations to renew as many as 112 existing water service contracts providing CVP water. These negotiations will convert the 68 existing interim renewal CVP contracts into long-term contracts and renew 44 existing long-term CVP water service contracts. These contracts account for approximately 5.6 million acre-feet of CVP water, approximately 95 percent of the total quantity of CVP water under contract.

Sacramento River water settlement contracts will be renewed based on the above contracting program upon completion of separate environmental documentation. Interior also recently executed two long-term contracts[1] that were exempt from the prohibition of long-term contracting. These two contracts, however, require that the contracts be amended to include the terms and conditions of the long-term contracts executed pursuant to CVPIA.

Reclamation has developed a detailed basis of negotiation with proposed positions relative to the terms and conditions to be included in the long-term contract form. The approval memorandum authorizing and conditioning the negotiation and execution of the proposed contracts by Reclamation is almost complete. Reclamation has undertaken and anticipates completing by the end of June a water needs analysis for each of the affected contractors. Negotiations are expected to commence next month.

Anadromous Fish Restoration Program. Interior has been developing and will finalize upon completion of the PEIS an AFRP plan to make all reasonable efforts to double the natural production of anadromous fish in Central Valley rivers and streams by the year 2002. However, as the plan is being finalized, we have accomplished a great deal.

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[1]The contracts are with Sacramento County Water Agency and San Juan Water District.

* The Delta is one of Interior's highest priority focus areas. All species and races of anadromous fish migrate through the Delta -- moving as adults to upstream spawning areas, and as juveniles to the San Francisco Bay and the ocean. Important programs in the Delta have focused on efforts to assist anadromous fish passage through the Delta, such as improvements at the Tracy Pumping Plant, fish screen design at the Contra Costa Canal Pumping Plant, modification of operations at the Delta Cross Channel to reduce mortality of striped bass, installation of an acoustic barrier on Georgiana Slough to redirect fish movement and acquisition of pulse-flow water to assist migration of fish through the Delta.

* Each year following enactment, we have dedicated CVP water provided under Section 3406(b)(2) for fishery purposes as well as for water quality purposes.

* We have acquired over 314,562 acre-feet of water to meet instream flows, spring pulse flows, and improve salmon spawning and migration conditions.

* Interior has issued 15 grants for fish screening projects in the Central Valley under the Anadromous Fish Screen program. Of the over $38 million expended for completed projects, the Federal share for these fish screens has been about $17 million.

* We have completed important structural projects on the Sacramento River including improvements at the Red Bluff Diversion Dam to reduce fish entrainment and improve the fish ladder, and a major project to fully mitigate serious fishery impacts of the Glenn-Colusa Irrigation District's Hamilton City Pumping Plant.

* Interior has acquired over 239,000 acre-feet of water to meet Level 4 refuge needs. In early 1998, Interior acquired the first 6,300 acre-feet of permanent water supply to help meet Level 4 requirements.

* Reclamation has increased the reliability of existing supplies to managed wetlands that have conveyance systems by executing six water wheeling agreements to deliver up to 395,000 acre-feet of water to wetlands. Construction has been completed on three conveyance facilities and has started on two other conveyance facilities. In 1998, a cooperative agreement was reached with Glenn-Colusa Irrigation District to convey water supplies to west Sacramento Valley refuges.

* During the winter of 1997-98, 41 farmers participated in the Agricultural Waterfowl Incentive Program and created 22,314 acres of habitat for wintering migratory waterfowl. Monitoring showed that as many as 40,000 ducks or geese used these newly flooded fields, as well as herons, egrets, cranes, ibis, and several species of shorebirds. Program participation for winter 1998-99 increased substantially, with a total of 41,055 acres flooded.

* Interior has purchased or restored 7615 acres of riparian habitat adjacent to Central Valley rivers and streams.

Implementation Achieves Improvement. These are a few of the restoration programs under CVPIA. From all indications, the CVPIA has already had very positive results from its efforts for protection, restoration, and enhancement of fish and wildlife in the Central Valley, and salmon have returned to spawn in areas where they have not been seen for many years. Thousands of ducks and geese and other migrating birds and waterfowl have used new wetlands areas which the CVPIA programs have created, and avian diseases have declined.

Interior recognizes that there is some difficulty in separating the effects of CVPIA actions from other influences. California experienced an extended drought from 1987 to 1992, which has been followed by successive wet years. We are hopeful that the combination of successful implementation of the CVPIA and wet hydrology continue to benefit California's environment.

Trinity River. I am pleased to announce that the U.S. Fish and Wildlife Service and the Hoopa Valley Tribe will release next week the Final Report for the Trinity River Flow Evaluation. The Report represents the culmination of an extensive, 15-year scientific effort to determine recommendations for instream flows and other measures necessary to restore and maintain the Trinity River fishery. The Report also represents a major milestone under the CVPIA.

My predecessor, Secretary Andrus, initiated the study in response to significant declines in fish populations (60-80% decline) and associated habitats (80-90% decline) realized after the completion of the Trinity River Division in the early 1960s. A 1980 EIS concluded that insufficient streamflows represented the most critical limiting factor to fishery restoration. During the first ten years of operations, the Trinity River Division exported approximately 90% of the annual inflow above Lewiston into the Central Valley. The coho salmon that rely on the Trinity River have been listed as threatened under the Endangered Species Act, and two other salmonid species are being considered for listing.

The Department's authority for the study derives from the 1955 authorizing legislation for the Trinity River Division and the federal trust responsibility to the Hoopa Valley and Yurok Tribes. The 1955 Act, authorized the Trinity River Division as an integrated part of the CVP, and required that appropriate measures be taken to ensure the preservation of fish and wildlife affected by the Division, including minimum stream flows. The Hoopa Valley and Yurok Tribes have reserved fishing rights which the federal government must protect. In addition, Congress mandated the completion of the study in CVPIA section 3406(b)(23) and incorporated Secretary Andrus's decision and other Congressional acts which further identified the restoration goals for the Trinity River. Based on these statutory and trust responsibilities, the Department must act to restore the fishery resources of the Trinity River.

The study represents a multi-disciplinary effort conducted by the Service and the Tribe, in consultation with scientists and other technical representatives from the Bureau of Reclamation, U.S. Geological Survey, National Marine Fisheries Service, and California Department of Fish and Game. Individual studies and a draft Report underwent extensive review by scientific peers and other interested parties. The Final Report will present recommendations regarding instream

flows and other measures, based on the best available scientific information, believed necessary to restore and maintain the Trinity River fishery. The Report will also recommend the implementation of an adaptive management program in order to monitor activities and make adjustments to recommended measures as necessary.

The recommendations in the Report will be evaluated along with other alternatives in an Environmental Impact Statement/Environmental Impact Report pursuant to NEPA and CEQA. The joint lead agencies -- the Service, Reclamation, Hoopa Valley Tribe, and Trinity County -- anticipate releasing a draft EIS/EIR this fall for public comment and finalizing the EIS/EIR during the winter. Upon completion of the EIS/EIR and the development of a record of decision, I anticipate making a final decision next spring.

CONCLUSION

We are on the cusp of a new era in California water policy. We are in the home stretch of implementing the CVPIA. I firmly believe that we can work through any remaining differences on CVPIA implementation and build on our achievements under that landmark legislation to smoothly transition into the long-term CALFED Program. The key to restoring the Bay-Delta's ecological health and to improving water management for beneficial uses of the Bay-Delta is successful implementation of the CALFED Program. We look forward to continuing to work closely with all stakeholders, the public, and members of Congress in these endeavors.

This concludes my statement. I would be pleased to answer any questions you may have.

Mr. DOOLITTLE. We are now pleased to have our Secretary of Resources of the State of California, the Honorable Mary Nichols testify.

Madam Secretary.

STATEMENT OF MARY D. NICHOLS, SECRETARY FOR RESOURCES, STATE OF CALIFORNIA

Ms. NICHOLS. Thank you very much, Mr. Chairman. Thank you for inviting me here today to testify in support of the CALFED Bay-Delta Program. I also want to thank you and the Committee for your continued support of the program, and I am looking forward to continuing to work with you to ensure its success.

I, too, want to pay tribute to Secretary Babbitt's leadership in this process as well as to the good work that was done by my predecessors in the Wilson administration, including Secretary Wheeler, in paving the way for the seamless transition that Secretary Babbitt referred to; and particularly to thank my colleagues in the Federal Government, including Assistant Secretary Patty Beneke and all of the directors of the regional offices within the Interior Department for having helped to make the seamless transition, at least appear to be seamless.

I think I could have done, though, without the Secretary's reference to the many years that we have been working together on these issues. I like to think of myself as brand new on the scene, but, of course, I have had a history of working on these issues in the past as well in other contexts.

I would just like to quickly move to the status of the program now, and to try to address some of the comments that you have made and your earlier questions to us. In particular, in these several months since the Phase II report was issued last December, I think we've made some very significant progress in a number of program areas, and that based on the briefing materials that we have been able to provide to date as well as the reports that will be coming out in June, that you will see that we have been able to develop an integrated storage investigation program that breaks the gridlock over competition between how groundwater and surface storage projects will be evaluated and how we will proceed to move forward on addressing the storage issue.

We've also developed a draft finance plan that lays out both the commitment that there will be a user-paid principle applied and some of the options for assuring adequate funding for this program. And we've developed a comprehensive set of environmental indicators in the design for the development of a comprehensive monitoring assessment and research program that will really enable us to measure the success of the program. We agree with you that if we can't define success in measurable terms, we can't say that we've achieved it.

As I have indicated earlier we do intend to release the draft EIR/EIS in late June for public comment. It will have been developed with a very widespread stakeholder process, but the document as a whole, of course, needs widespread review. And there will be a series of workshops held around the State. The program will be further defined and developed, and then the final plan is due out in June of next year. And, of course, we have a period then of years

afterwards in which we will be spinning off specific projects and specific EIR/EISs on those projects.

I want to call special attention to the level of scientific review and the commitment to developing measures of success for this program. CALFED has relied on expert advice from some of the Nation's leading scientists and natural resource managers to critique and refine this program. The panel drew from expertise drawing on the Chesapeake Bay, the South Florida/Everglades, Columbia River and other programs in developing specific recommendations as part of our strategic plan for implementing the Ecosystem Restoration Program. The plan contains a comprehensive set of restoration goals and objectives, measurable performance standards that define the success of the program, and similar efforts are under way to establish such measures for the water quality, water supply reliability and other elements of the CALFED program.

We're also looking at ecological indicators that will measure the integrity of the Bay-Delta system itself. The restoration program includes three general types of indicators, indicators of ecological integrity or health, scientific and management-oriented indicators on the restoration program performance itself, and more public-oriented major indicators of progress on the program's goals. These are laid out in the draft EIR/EIS and will be available obviously for public comment in June. And assuming that we survive that process, we intend to use them throughout the remainder of the process in our communications with the public as well as with the stakeholders and the scientific community.

I also want to highlight the emphasis that has been a hallmark of this process from the very beginning in partnerships with local interests and landowners to find projects that have multiple benefits. You'll be hearing more from the stakeholder groups represented here today. And, of course, the CALFED program itself has showcased some of the major projects that combined fisheries and habitat restoration, flood plain management, water quality, and water supply reliability.

Secretary Babbitt referred to the Butte Creek Restoration Project as one of our signal success stories. Five point six million dollars has been approved there for fish screens, fish passage and small dam removal, watershed support, and general restoration activities on this tributary watershed. Last year more than 20,000 adult spring run salmon returned to the creek after a low of only 200 to 1,000 in recent years, a really extraordinary recovery for the fish.

We could also point to the Consumnes River Project, Sacramento River Conservation area, San Joaquin National Wildlife Refuge and the Battle Creek Restoration Project as very specific examples where combined physical actions are working to improve water quality and water reliability and to improve the habitat for fish.

And I think that it's important to again reference the fact that none of the individual agencies that are represented in the CALFED process would have had the financial resources or the expertise in-house to have addressed these projects and worked with the local communities as successfully as they have if it hadn't been for the umbrella of CALFED bringing them together.

Finally I need to emphasize the importance of continued funding to maintain the momentum behind this program as well as to fur-

ther support the projects that are vital to the economy and the environment of California. As you know, the fiscal year 2000 appropriation will provide the third year of Federal funding under the Bay-Delta Act authorization of $430 million for this program. To date the program has approved $150 million out of the $160 million that have been appropriated for projects and programs that will have a lasting benefit for farms, families, and fisheries throughout the Bay-Delta watershed.

The State's share of this program has been provided through passage of Proposition 204 in 1996, which allocated $60 million for ecosystem restoration and an additional $390 million upon completion of the final environmental documentation in fiscal year 2000. In addition, Governor Davis announced last Friday that he is asking for another $10 million in this year's budget to support the program's integrated storage investigation, including site-specific work on storage.

The administration's fiscal year 2000 budget request, therefore, is essential to maintaining the Federal share and commitment to this program. As you also know, we've worked closely with stakeholder groups to develop a consensus in support of the administration's fiscal year 2000 budget year request for $25 million for support of the CALFED program. As a result of the discussions with the stakeholders, a broad-based coalition of these groups has developed a consensus in support of allocating $60 million for ecosystem restoration programs and $35 million for water quality, levee system integrity, and water supply reliability programs. I urge you to support this consensus recommendation.

I recognize, as does Secretary Babbitt, the difficulty of funding this program solely through Energy and Water appropriations, and in response to this Committee's strong urging, we are working closely with the Department of Interior and other CALFED agencies to develop a meaningful project-level cross-cut budget to identify major expenditures that are directly related to the CALFED program.

In conclusion, I just wish to repeat my thanks for your continued support of this program and for inviting me here today, and I'm pleased to answer any questions that you may have.

Mr. DOOLITTLE. Thank you very much.

[The prepared statement of Ms. Nichols follows:]

STATEMENT OF MARY D. NICHOLS, SECRETARY FOR RESOURCES, STATE OF CALIFORNIA

Introduction

Thank you for inviting me here today to testify in support of the CALFED Bay-Delta Program. I also want to thank you for your continued support of the Program, and I look forward to working with the Congress, Secretary Babbitt, and the stakeholder groups in California to ensure its success.

Secretary Babbitt has outlined the key elements of the Program in his testimony, and the CALFED staff have prepared extensive briefing materials, so I will focus my comments on the areas of special concern to the State.

Importance to the Davis Administration

First, I want to emphasize the importance of this effort to the Governor and his administration. In the area of environment and resources, there is no higher priority than moving this program forward. Certainly, the level of staffing and financial resources devoted to CALFED far exceeds that of any other environmental program in the state.

The Governor demonstrated his strong interest in water policy and the CALFED Program early on by forming an Agricultural and Water Task Force from the leaders of the agricultural and conservation communities. I served on the task force together with CALEPA Secretary Winston Hickox and Bill Lyons, Secretary of the California Department of Food and Agriculture, before we were appointed by the Governor. I think it is a measure of the importance the Governor places on water policy that he drew three cabinet members from this task force. The Task Force developed a set of recommendations that formed the basis for many of the key elements of the Phase II Report issued by the CALFED Program last December.

As the Secretary for Resources, I now co-chair the CALFED Policy Group, the principal decision-making body for the CALFED Program, together with Assistant Secretary Patty Beneke of the Department of Interior, and I have met several times with Secretary Babbitt to discuss the key issues surrounding the program. The other members of our leadership team include Tom Hannigan, the new Director of the Department of Water Resources, Linda Adams from the Governor's office, who as a consultant with the State Senate was a lead negotiator and the principal drafter of Proposition 204, the bond Act that has provided the State's share of funding for CALFED, and Patrick Wright, my Deputy Secretary for Policy Development, who formerly served as the Federal chair of the CALFED Management Team. In summary, we have a strong and growing management team at the State, and we are committed to provide the leadership necessary to effectively manage the program.

Commitment to Move Forward

Second, I wish to emphasize our commitment to move aggressively forward with the key elements of the program. Just in the last several months since the Phase II Report was issued in December, we have made significant progress in several important program areas:

- We have developed a programmatic-level preferred alternative that provides benefits for all interests in the areas of water quality, water supply reliability, and environmental restoration.
- We have developed a comprehensive plan to address water quality, fisheries, and water supply reliability issues in the South Delta, the key to the State's plumbing system;
- We have developed an integrated storage investigation program to break the gridlock over how groundwater and/or surface storage projects will be evaluated and constructed.
- We have developed a conservation strategy that will provide regulatory certainty for all parties under the State and Federal Endangered Species Acts as the program moves forward;
- We have developed a draft finance plan to secure adequate funding for the Program; and
- We have developed a comprehensive set of environmental indicators and a design for the development of a Comprehensive Monitoring Assessment and Research Program (CMARP) to measure the success of the Program.

In late June, we intend to release a draft EIR/EIS for public comment and hold a series of workshops throughout the state. We expect to further refine the program and release the final plan in June of next year.

Goals, Objectives, and Measures of Success

Third, I want to call special attention to the level of scientific review and commitment to develop measures of success for the program. CALFED has relied on expert advice from some of the nation's most respected scientists and natural resource managers to critique and refine the program. The panel drew from their collective expertise in the Chesapeake Bay, South Florida/Everglades, Columbia River, and other programs in developing specific recommendations as part of a Strategic Plan for implementing the Ecosystem Restoration Program. The Plan contains a comprehensive set of restoration goals and objectives, the measurable performance standards that define the success of the program. Similar efforts are underway to establish clear measures of success for the water quality, water supply reliability, and other elements of the CALFED program.

The Program is also developing a comprehensive set of ecological indicators to measure the ecological integrity of the Bay/Delta system. The Ecosystem Restoration Program will include three general types of indicators:

- indicators of ecological integrity or health;
- scientific and management oriented indicators of ecosystem restoration program performance and success; and
- more public oriented major indicators of our progress in meeting the program's goals

These indicators will be fully described in the draft EIR/EIS to be released in late June. They will then be used to describe and present information to the public, stakeholders, and the scientific community on ecological trends and conditions, and to translate the program's goals and objectives into measurable benchmarks of success.

Partnerships with Local Communities

The fourth major point I want to highlight is our continued emphasis on partnerships with local interests and landowners on projects that have multiple benefits. As you will hear from some of the stakeholder groups represented here today, the CALFED Program has been a showcase for projects that combine fisheries and habitat restoration, floodplain management, water quality and water supply reliability. Some of the most prominent examples include:

- The Consumnes River project, where more than 35,000 acres of riverside habitat along the lower floodplain of the Consumnes have been protected within a rapidly urbanizing area. The preserve is a multifaceted program combining land acquisition, land use planning, compatible economic development, agricultural preservation, and community outreach and education.
- The Sacramento River Conservation Area, which encompasses approximately 213,000 acres along 222 miles of the main stem of the Sacramento River between Keswick Dam and Verona. This voluntary program, which grew out of State legislation calling for development of a management plan for the river, seeks to balance existing land uses and needs with preservation and restoration actions. CALFED has dedicated more than $36 million towards preserving and protecting riparian habitat, building fish screens, and conducting research within the Conservation Area.
- Expansion of the San Joaquin National Wildlife Refuge to reduce flooding, protect farmland, restore valuable wildlife habitat, and provide other local benefits. CALFED has provided more than $10.5 to widen the floodplain, increase storage of flood water, recharge groundwater, and restore wildlife habitat.
- The Butte Creek Restoration project. More than $5.6 million has been approved for fish screens, fish passage and small dam removal, watershed support and general restoration activities on this tributary watershed. Last year more than 20,000 adult spring run salmon returned to the Creek from a low of 200-1,000 in recent years.
- The Battle Creek Restoration Project, which seeks to improve fish passage for four races of steelhead and salmon in the only Sacramento River tributary with exceptionally high flows during the dry season and drought periods. The project includes removal of five dams, screened diversions, increased flows, and other actions to improve water quality and access to 42 miles of historical anadromous fish habitat. To date, CALFED agencies have provided $28 million in funding for the project.

These are just a few of the most prominent examples of projects developed and implemented by local agricultural and conservation groups to provide multiple benefits. These partnerships would not have been possible without coordinated technical and financial assistance from the CALFED program. None of the individual agencies would have had the resources or the expertise to work with local communities in putting together large scale projects with multiple purposes and funding sources.

CALFED Funding

Finally, I want to emphasize the importance of continued funding to maintain the momentum behind the program, and to further support projects and programs vital to the economy and environment of California. As you know, the fiscal year 2000 appropriation will provide the third year of Federal funding under the Bay-Delta Act authorization of $430 million for the CALFED Program. To date, the Program has approved $150 million from the $160 million appropriated to date on projects and programs that will have lasting benefits for farms, families, and fisheries throughout the Bay-Delta watershed.

The State's share has been provided through passage of Proposition 204 in 1996, which allocated $60 million for ecosystem restoration, and an additional $390 million upon completion of the final environmental documentation in fiscal year 2000. In addition, the Governor announced last Friday that he is including $10 million in the State's fiscal year 1999-2000 budget to support the Program's Integrated Storage Investigation. The Administration's fiscal year 2000 budget request, therefore, is essential to maintain the Federal share and commitment to the program.

As you may know, we have worked closely with stakeholder groups to develop a consensus in support of the Administration's fiscal year 2000 budget request for $95 million to support the CALFED Program. As a result of those discussions, a broad-

based coalition of these groups has developed a consensus in support of allocating $60 million for ecosystem restoration programs and $35 million for water quality, levee system integrity, and water supply reliability programs. I urge you to support this consensus recommendation.

I recognize, as does Secretary Babbitt, the difficulty of funding this program solely through Energy and Water appropriations. Therefore, in response to the Committee's request, we are working closely with the Department of Interior and other CALFED agencies to develop an interagency cross-cut budget to identify all major expenditures directly related to the CALFED Program.

Conclusion

In closing, I wish to reiterate my thanks for your continued support of the CALFED Program, and for inviting me to appear before you today. I would be pleased to answer any questions you may have.

Mr. DOOLITTLE. There is so much to talk about, I'm sure we'll not be able to get it all accomplished in one round of questions. But, Mr. Secretary, I infer from your comments you believe that the matter of the Trinity River flow is going to have to be integrated into the CALFED and the whole the Bay-Delta program; is that a fair statement?

Secretary BABBITT. Mr. Chairman, the Trinity River mandate is a distinct, defined, specific mandate in law which says I must make a decision about water flows sufficient to restore the fishery. That's the baseline. Now, obviously, that decision has impacts in the Sacramento River Valley and indeed the entire system. And having made—having once made the decision about what's necessary for the flow regimes and the hydrograph, I think it is then possible and indeed imperative that we look at the management regimes in a way that is designed, to the extent possible, to minimize the impact in the Central Valley.

Mr. DOOLITTLE. Can you—could you indicate what steps you feel are likely to be taken to mitigate for the loss of water in the Sacramento River system?

Secretary BABBITT. Well, Mr. Chairman, I think mitigation comes in two packages. The first one is, as I suggested, that is, how we manage the system and how it is the storage capacity in Trinity Lake and Whiskey Town Reservoir is used in a multiyear mode that buffers some of these impacts. The other thing I think we will need to examine very carefully is I can tell you, without being familiar with the report, just from our prior experience with these, the amount of water, the reduction in diversions in and through the Central Valley will be largest in times of large flow, and the impact will be smallest in times of drought. I think that's a very important fact because that does play into the operating flexibility of the system, of the CALFED system, and the storage capacity and flexibility. It isn't just about what kinds of relationships in a given year. It really does play into that. So that would be the second piece of it, sure.

Mr. DOOLITTLE. So you would contemplate, then, using stored water in those reservoirs to provide—to augment some of the flow presently that goes down to the Trinity so as to minimize or reduce the impacts on the Sacramento River system.

Secretary BABBITT. What I'm saying is that is one of the operational flexibility issues that absolutely must be looked at.

Mr. DOOLITTLE. Okay.

Secretary Nichols, tell us—I would like to hear what the Davis administration thinks about the need for additional water storage

shed. It's my understanding that the administration indeed recognizes the need for that and supports it.

Ms. NICHOLS. Yes, Mr. Chairman. The Governor has stated, I believe on a couple of occasions, that he believes that additional storage will be needed for California's present and future needs. He has not made any commitments to any particular sites or types of storage, but he certainly recognizes that as we manage the system better, one feature of that management is providing for storage.

Mr. DOOLITTLE. So I take it he has not ruled out on-stream storage as one of the possible solutions?

Ms. NICHOLS. He has not specifically ruled out any particular type of storage, that's correct, although clearly both cost and environmental impacts will play a role in making a decision about what types of storage will be chosen.

Mr. DOOLITTLE. Can you—how about you, how do you feel about on-stream storage?

Ms. NICHOLS. I think right now we're in a peculiar situation where we're looking at actually eliminating some dams that in the past were thought to be useful for various reasons. We have got a lot of other dams that are being looked at for reoperation.

Probably the biggest single activity that's going on in the area of storage right now in California is the debate over the future of the PG&E system and what will be done with that. I think we need to take a look at that before we start talking about additional construction. But, again, as a matter of principle and in fairness to the debate, there have been no solutions that have been eliminated from potential consideration in this process.

Mr. DOOLITTLE. Mr. Secretary, you want to jump in on this?

Secretary BABBITT. Mr. Chairman, if I might just elaborate by reference to the CALFED proposal for the integrated storage studies. The integrated storage studies have narrowed—they deal, obviously, with both groundwater and surface water.

Now, with respect to surface water, the possibilities have been whittled down to about, I think, 14 sites—Lester, am I about right—for detailed feasibility studies. Now, there are no new on-stream storage sites in those 14. I think that's an important distinction. There are modifications to existing on-stream sites, specifically raising Shasta Dam, and there are a goodly number of off-stream surface storage sites in that 14, essentially the balance of them.

Mr. DOOLITTLE. I might mention that the witness lights appears to be not working—we better get these lights going, or we'll be here forever. But I don't think I have gone much over my 5 minutes. Did you want to add something?

Ms. NICHOLS. No. I think that was a helpful elaboration, because I certainly wouldn't want it to be thought that we were moving outside of the integrated storage investigation.

Mr. DOOLITTLE. Well, I'm well aware there are no new on-site storage sites discussed in CALFED, a fact that I find disappointing. But in any event, there are—I have an interest in that, and I think some of our Committee members do.

Let me just ask you in your experience do fish ladders generally accomplish their intended purpose or not?

Secretary BABBITT. Mr. Chairman, there is no simple answer to that. We have been dealing with fish ladders now since really the 1920s and I would say that the extravagant expectations with which fish ladders were viewed as mitigation have really not been met, and there have been a goodly number of failures.

That said, in some cases, within some constraints, fish ladders work pretty well. They never replicate 100 percent the predam conditions, but there are circumstances in which they are certainly worthy of consideration.

Mr. DOOLITTLE. I have been told that the Scandinavian fish ladders are built differently than ours. Typically they're much longer and the——

Mr. MILLER. Field trip.

Mr. DOOLITTLE. Yeah, field trip.

But not only are they longer, but the dams are somewhat differently configured. But apparently they have a much higher success rate than our American fish ladders do. I just wanted to pose that question to you if you have ever looked into that or considered the possibility that maybe we could improve in this area.

Secretary BABBITT. Mr. Chairman, the Fish and Wildlife Service has a fish ladder research facility, I believe, in West Hadley, Massachusetts. They will be absolutely elated after years of working in total obscurity to hear of your interest, and I am sure there will be a request for budget support in the mail tomorrow morning.

But, seriously, Mr. Chairman, the design and technology of fish ladders is really a very sophisticated subject. And you're correct, this isn't just sort of a cookie-cutter kind of deal. It really involves a lot of physics and hydrodynamics and stuff like that, and we would be happy to have your support for the—for that laboratory.

Mr. DOOLITTLE. Well, I only raise that matter because we're now hearing the proposal to tear down some of the dams and as a way of improving the fisheries, but I was not aware of the situation in Scandinavia apparently where that's one way they've addressed this problem, that it appears to be working. I would just like to ask you to look into that and perhaps get back to the Committee with what your findings are. Maybe this research laboratory already has those answers.

With that, although I have other questions, I am going to recognize Mr. Dooley for his questions.

Mr. DOOLEY. Thank you, Mr. Chairman. I guess the point I want to stress, I think that one of the greatest responsibilities that all of us have that have been following this process, as well as, I think, the Federal and the State administrations have, is to, you know, exercise our influence in keeping this CALFED process on track, because I do believe that regardless of, you know, what constituency that we might represent, this is the best alternative for us to resolve some of these long-standing problems we faced with California water issues.

And my first question to both Secretaries is a very general one. Is that one of the critical issues, then, is to ensure that we can offer a process, whether you're in an environmental community or agricultural community or municipal community, is that this is a process that allows us all to perhaps get better together? And is

this, you know, an accurate depiction, I guess, of what you think the CALFED process offers, Secretary Babbitt?

Secretary BABBITT. I believe Secretary Nichols and I would give exactly the same answer, Congressman, and that is yes. These processes must proceed in parallel. Now, what I would emphasize is that doesn't mean there isn't a mathematical formula to determine that. And there—certainly I think it's misleading to think of it as some kind of equivalence in which the subvention grants are given a label of fisheries, agriculture, water quality, and judged by the relative level—the relative amounts of funding are driven by the scheduling of events. Some have lead time, some have virtually no lead time, others have 5 or 10 years' worth of lead time.

Congressman, if I might, I would just like to interject one more thing that I think relates to this. There is something, I think, quite new in water management and development that arises out of this, and that is that this Committee and the energy and water appropriation committees are now in the business of making block grants to the Interior Department, and most—and indeed virtually all of which is then awarded on a competitive, peer-review basis to an enormous variety of Federal and predominantly State organizations. The money that gets appropriated in turn is subvented out in this process.

I'm very comfortable with that, because I think the day in which the Bureau of Reclamation sort of shows up in town and says, clear out of here while we do everything, are gone. But it is quite different, and I would respectfully suggest that it is working and acknowledge that it puts a very important burden on us to be reporting back and setting benchmarks so that you can judge the efficacy of this process.

Ms. NICHOLS. Maybe I could just add a word or two. The phrase "getting better together" was part of what launched CALFED, and at the end of the day, unless the stakeholders who have given so much of their time to this process all feel that they've gotten something that has made them better as a result, I think we will not have succeeded.

The thing that I'm most optimistic about is that the projects that have been funded to date through the mechanism that Secretary Babbitt alluded to are projects that really have multiple benefits. And one of the great accomplishments, I think, of the process and the learning that people have engaged in together is that people are seeing that projects that might have fallen into just one category in the past really will have benefits for other people's agendas as well, and that's what we need to be looking for in the future.

Mr. DOOLEY. Great. And I guess—that's where I think many of us are very pleased in the message that the Governor is sending to the agricultural community and the municipal community in terms of the commitment in moving forward with the ISI as well as on specific sites, too. Certainly that is important in terms of the water supply and water quality.

And, Secretary Babbitt, I appreciated your comments in the past on that issue, too, and that's important in terms of sending the message to users that this process still holds a lot of promise and opportunity to resolve some of their issues.

I guess also moving to the CVPIA side, on a similar question is that part of the CVPIA in 3406, the (d)(5), dealing with the refuge water supplies, also had a provision in it that requested or required the Department to look for alternative supplies to those water amounts that were provided and taken from contractors to the refuges. And I guess what is in terms of the state of affairs and progress the Department has made in terms of identifying those alternative supplies?

Secretary BABBITT. Congressman, the major innovation that has begun to emerge out of this intense negotiations and discussion is what CALFED is now calling an environmental water account, which is a way of looking at a variety of different water sources and sort of setting it up the way you would put, you know, capital in a bank, ready to be drawn down as a part of this process. It's still under way, and there is—and I'll be frank with you, there is an ongoing discussion which we should acknowledge about what we mean when we say "acquiring water." Does it mean purchasing water? Does it mean the added increment of benefit from efficiencies that are driven by pricing structure or by that kind of thing? To what extent are water transfers involved? I think these are all legitimate issues.

Mr. DOOLEY. Just one last question on that line. The recent court decision that was dealing with the (b)(2), does the Department—and part of the basis of that decision was a determination that there was some uncertainty in terms of how the Department was accounting for water and how they were making up for water. Do you see this as being—well, do you acknowledge that the Department needs to do a better job there, and do you also view, perhaps, this environmental water account as also being a component of that to provide greater transparency to both the environmental community as well as the water-user community in terms of, you know, what water is being utilized for what purposes and how is it being adjusted in terms of the contractor's interest, I guess?

Secretary BABBITT. Congressman, it's not about whether or not the Department has done a good job. We have done our normal peerless, unparalleled effort. Seriously. It is about a continuing difference about the best way to deal with (b)(2) water and other water accounts.

One school of thought, which I would call the bean-counting school, says you can go back and find a baseline and then start counting and showing precisely how all subsequent actions have added to or potentially subtracted from the—from this magical baseline.

Now, with all due respect to Congressman Miller and Senator Bradley and the other fathers of this Act, it ain't possible.

Mr. MILLER. I thought you were going to say supporters.

Secretary BABBITT. We are examining the court decision very carefully, and I will hasten to comply—add that we will comply with the court's mandate. But there is—I think what the Department tried to do in the (b)(2) thing was say, let's get beyond the bean counting and look at the maximum efficient deployment of all these resources, and we're not quite at closure on that, frankly.

Mr. DOOLITTLE. Mr. Calvert is recognized.

Mr. CALVERT. Thank you, Mr. Chairman.

I'm from southern California, so I'm kind of interested in getting that water someday. And as you know, Mr. Secretary, we're having a problem down south. All our friends are moving to Arizona and Nevada, and they're wanting all the water from the Colorado River. And I'm kind of curious in that where our negotiations are, because this kind of all, as you know, relates to one another at one point in time, with the Imperial Irrigation District negotiation with the Cochelo Water District in San Diego on transfer of water to San Diego and how that's going to affect MWD for if we can get additional water.

I say that because that may be needed, it seems, sooner rather than later if, in fact, this—the progress on the California Bay-Delta, which we hope will continue until delivery is in effect or made down south to make up for some of these supplies that are being lost, not only from the Colorado River, but, as you know, from restoring Owens Lake, Mono Lake, and other environmental priorities.

And in that context, the President's fiscal year 2000 budget requested funding, as we know, $75 million for ecosystem restoration efforts and $20 million for nonecosystem restoration such as water use efficiency, water quality and groundwater storage. But, in fact, the administration requested $65 million—or, excuse me, $75 million and $20 million, whereas the California Bay-Delta Water Coalition was a 65/35. Where did the administration come in with the number of $15 million rather than the $20-?

Secretary BABBITT. Congressman, let me, if I may—first say a word about your southern California concerns. The parties to this issue have at my request been sequestered in Arizona where they are currently meeting with Dave Hayes of my staff to see if we can kind of coax people to see the light. I'm actually optimistic that we are getting together. That is the central and crucial issue for southern California. And with all respect, I would urge all of the southern California people to say to their constituents it is imperative that we close on this Imperial Valley transfer issue, and there should be no escape for any of the parties. We got to get it done.

Now, the legislature and the Governor have been very strong on this issue through both administrations. The legislature in Sacramento put up a couple hundred million dollars for the lining of the All-American Canal to help ease this transition. They put up $30 million to help the Met with feasibility studies for a conjunctive use site out in that area. And we need to squeeze the parties and say this is about the public good, and you got to emerge with an agreement.

Now, with respect to the 65, 75, 35, 25, whatever it is, really goes back to my earlier comments. These are judgment calls. And the original numbers came in from CALFED. There was some subsequent churning around, and the numbers came out a little different. I think what the administration will say—I have not cleared this with the Office of Management and Budget, and therefore everything I say from hereon is subject to immediate retraction and disciplinary action—but it's not important if everybody has come to an agreement on a slightly different allocation, that's fine, we'll support it.

Mr. CALVERT. Obviously from—we understand the work that has to be done on ecosystem restoration as far as part of the negotiations to put this agreement together, but I guess from our perspective is we want to make sure that there's water storage for times in need and that the availability and the quality of the water is not compromised and can be delivered. That's one of the reasons why we have this interesting coalition working together to get this thing funded.

Secretary BABBITT. I understand. And in that spirit we agree.

Mr. CALVERT. Thank you.

Mr. DOOLITTLE. Mr. Miller is recognized for his questions.

Mr. MILLER. Thank you, Mr. Chairman.

And welcome, Mr. Secretary and Mary, to the Committee. Just quickly go back to the Trinity River decision. And I think that—I'm glad to hear we're getting to the point where—to make a decision there. I think the earlier that decision is made so that it can then be factored in to the rest of this process—I don't think it should be part of this process, and there's clearly no requirement, and the burden on you to make this decision is outside of this, outside of this process, but clearly it will have to be taken into account as we think about the resources available to us.

Let me, if I could, just make sure I have some clarification of what you said. The decision is made for the purposes of restoring the fisheries in the river; is that correct?

Secretary BABBITT. That's correct.

Mr. MILLER. That's the requirement and that's the burden?

Secretary BABBITT. That's correct.

Mr. MILLER. There is no requirement to minimize—I mean, to play that off against what the impact is on the CVP?

Secretary BABBITT. That's correct.

Mr. MILLER. I mean, I think it's rational that we would try to do that, but that is not a requirement of the law.

Secretary BABBITT. That's correct.

Mr. MILLER. And there is no requirement that—of mitigation for this decision?

Secretary BABBITT. That's correct.

Mr. MILLER. Okay. Because I think that's very important. You laid out how this water got into the system. It's not very pretty in terms of the political history, but just make sure that somehow we don't fall into the notion that there is some responsibility here to mitigate that or that this is a balancing act between the CVP and/or the fisheries.

And on the question that was raised on (b)(2), Mr. Secretary, the problem that the court has is with the ambiguity in the accounting system, as I understand that; that the law requires you take—you take 800,000 acre-feet and no more, no less, no more. And an accurate accounting system is sort of what the court is now telling us we need. Is that correct?

Secretary BABBITT. I'm tempted to refer that to counsel, but, yes, I think in simplified form that's correct.

Mr. MILLER. Essentially the court is affirming the law, but is saying you have got to be able to account for——

Secretary BABBITT. Yeah. That's right. Sure.

Mr. MILLER. Okay. On the—you all mentioned in your opening statement that the process on contract renegotiations under CVPIA is under way. Can you elaborate where you are in that process and what your expectations are?

Secretary BABBITT. Well, I think the important thing is that those negotiations, wrapping them up is explicitly tied to the completion of the PEIS. And I don't have the exact—I believe that we anticipate getting that wrapped up and going to a record of decision this fall, I think in the October-November time frame. Now, the negotiations obviously are going along in parallel, but we cannot close and make the final cuts until we have signed the record of decision.

Mr. MILLER. And your expectation would be what, then, after the record of decision, that we would start renegotiating and consummating new 25-year contracts?

Secretary BABBITT. Absolutely.

Mr. MILLER. If that doesn't happen, where do we go?

Secretary BABBITT. Well, I haven't thought about that. I mean, we intend to get it done.

Mr. MILLER. So your expectation at this point is that those negotiations will be for the long-term contracts, not one-year rollover contracts.

Secretary BABBITT. Not at all. It's time to bring this to closure. And I believe that we can do that in late 1999 and then on into the early part of 2000.

Mr. MILLER. The other—I think one of the basic tenets is we have—we discussed it when we were all in Senator Feinstein's office. I assume we're still operating under the theory that much of what comes out, what finally comes out of CALFED in terms of construction and costs is on a beneficiary pay. Is that still holding in this process as you understand it?

Secretary BABBITT. Yes. But, let me suggest, again, that that doesn't automatically translate into a bean-counting process, because the benefits of virtually every piece of this are distributed in—to multiple stakeholders, and there is also a factor here of the larger public benefits that accrue from all of this. So the documents, I think, in the CALFED process are quite clear; yes, beneficiary's pay is the guiding principle. There are going to be judgment calls on the margins of those decisions, and I absolutely think there should be.

Mr. MILLER. I assume there would be some delineation project by project or feature by feature as to what those beneficiaries and who those beneficiaries are. There would be—not all projects in the system would be treated the same.

Secretary BABBITT. Oh, yeah, I think, sure, it will go down to that level of analysis.

Mr. MILLER. Your first statement reminded me of a former Member of Congress from California on this Committee at one time—actually two of them who were actually very good at getting these resources, Mr. Sisk and Ms. Johnson. And when it came time that we were going to apportion out the costs for some of these expensive projects in California, they would put on their environmental hat and say, 89 percent of this project is for the environment, he says, and we—the fish don't have any mailboxes, there's nowhere

to send the bill. We will have to send it to the public. We'll just write this off. And it worked, much to the chagrin of some of the taxpayers in some other parts of the country.

But I think it's very important in recognizing what you said, there clearly will be a general benefit to the State of California if we can iron this all out. And there will be benefits that flow into more than one direction, if you will; the environment, the water users, municipal, agricultural, what have you. But I think it's also very important that we keep in mind that where we can, we do have cost-sharing arrangements, we have asked others to do that, and that we would work to try and delineate how those—how those costs are borne. I know that there's been a number of suggestions, one by some rather large water users, that they are in no way prepared to pay, nor can they pay, for some of the projects that they want.

There has also been discussions in the State legislature—and correct me if I'm wrong, Secretary Nichols—but in the State legislature that some of this would just be covered by a bond issue. And the State is certainly free to make that decision, but at some point in this process I think we have to demonstrate to the public what the costs are going to be and where the burdens of those costs lie, and when—we get down to the end here. I take it there's no disagreement here.

Secretary BABBITT. Well, yes, I—I'm a little hesitant to subscribe to that eloquent monologue in every nuance. I think there might, in fact, be a—some space between us on how far you go in an attempt to count the beans. Now, let me just say that——

Mr. MILLER. These are very, very significant dollars, Mr. Secretary.

Secretary BABBITT. Mr. Chairman, I certainly understand that. I have been through these exercises before, and I'm just cautious. I have seen these cost allocations misused in many ways, and I've seen them become highly artificial. And I believe that it is an important point of departure to attempt to identify costs and benefits, but I do not believe that that can be a mechanical process.

And I believe that in the final analysis, that in this consensus process there will be judgments made as part of the consensus process. To the extent that you find that unsatisfactory, I hasten to remind you that I will be long gone from my job as Secretary of the Interior by the time this process starts. So my opinions——

Mr. MILLER. You're abandoning the Gore Administration? That can't be.

The fact is that I agree with everything you just said, that very often, in fact, these allocations have been misused, inflated, speculated about and all the rest, and they've cut both ways. Sometimes it's hard on the taxpayer, sometimes it's hard on the user, and back and forth.

All I'm saying is that we use that kind of judgment and we provide—we use some transparency in this process, because I don't think we want to simply go out and make this kind of commitment of money and believe that we're going to let the guidelines of the old 1902 Reclamation Act tell us how we're going to do this or something. That's all I'm saying. I think there's an obligation here, because at some point CALFED is going to add up, you know, to

a very substantial amount of money, and I just think that that transparency has to be there, the delineation has to be there. And it's not about, you know, goring somebody's ox, it's about laying out where, in fact, these burdens lie, and let the people of the State decide whether or not that's a reasonable alternative or not.

Secretary BABBITT. Well, I think——

Mr. MILLER. I agree with you, but you don't agree with me.

Secretary BABBITT. I can come pretty close to that.

Ms. NICHOLS. I just wanted to add with respect to the water bond discussions that are going on in California right now, I think it's a good illustration of the principle that the two of you are sort of honing from your respective chairs here in that as we work on developing a potential water bond to go on the ballot, it's clear that projects that will be included in such a bond are projects where multiple beneficiaries can be identified and where people will come together and agree on how the allocations of those benefits should be viewed.

And I think that reflects the fact that while we do need to keep improving both the quantity and the quality of analysis that we're doing on costs and benefits, that there will be an element of political judgment that gets brought to bear in the end on whether anything actually gets done.

Mr. DOOLITTLE. Mr. Pombo.

Mr. POMBO. Thank you.

Mr. Babbitt, I would like to get back to the storage issue. We've talked a little bit about on-stream and off-stream storage and what the administration's position both at the State and Federal level is on that. One issue I am curious about is the groundwater recharge issue in terms of water storage and environmental restoration on some of the overdrafted areas. I know that in some of the planning documents for CALFED, they have talked about doing groundwater recharge projects. I would like you to address that in terms of the support of the administration for those kind of projects.

Secretary BABBITT. Mr. Pombo, groundwater recharge is one of the most underutilized, most efficient and effective ways of managing water systems for all kinds of reasons, not the least of which is there is no evaporation losses. It has long-term flexibility. You are effectively refilling the lake.

There are some really striking examples of the efficacy of groundwater recharge. Without waving the flag of localism, the best current example is in Arizona. The amounts of water that are being recharged into groundwater storage is now up in the hundreds of thousands of acre-feet per year.

Now, my sense in California is that it's difficult because there is not a regulatory framework that defines a meaningful approach to the rights to groundwater, and it's going to be much more complicated in California, and we're going to have to work that. But I believe that it's a vastly underutilized tool, and we should support it to the limits of its efficacy and economic viability.

Mr. POMBO. So we should expect support out of you and the administration on some of these groundwater recharge projects that have been discussed over the past several months?

Secretary BABBITT. Would you be referring to Madera Ranch by any chance?

Mr. POMBO. No. I'm waving the flag of locality as well. I have a couple in my district that I believe are very, very important for a number of reasons for the region.

Secretary BABBITT. Okay. Well, the reason I asked about Madera Ranch is because I think it's a—it's a case study in what happens when we get ahead of the process and start a debate which is not centered on the facts and the comparative analysis.

So the answer is yes, I support it. You should send your advocates to CALFED to make sure that this analytical process and the ISA process is looking carefully at your particular projects.

Mr. POMBO. Mr. Snow and I have had a number of discussions on that, and I know that my local people have had a number of discussions with him on that. I would like to turn to a somewhat different issue and—involving the CALFED process. I have supported the CALFED process because I do believe that it is one of the only ways that we are going to have any kind of movement on water policy in California. But one issue that does concern me is the issue of land retirements. In my area it is a significant number of acres that would fit into the definition of CAL—within CALFED of lands to be retired, to the effect that the number of acres that would be retired would have a severe impact on agriculture in my area. I represent an area of California that is predominantly agriculture, that is its economy, whether you're looking at the city of Stockton or any of the neighboring communities is predominantly driven by agriculture.

If we had the numbers of acres of land retired from agriculture and into ecosystem restoration, wetlands, whatever they would be retired into, there would be a severe impact not only on the economy of my area, but also a severe impact on local government as a result of that. How would you and the administration propose that you mitigate the impact on local government and on the surrounding communities of retiring what would literally be hundreds of thousands of acres of land?

Secretary BABBITT. Well, I don't share that conclusion, and I would respectfully suggest that the hundreds of thousands of acres is nowhere to be found in the CALFED documents.

Mr. POMBO. If I could interrupt you there. That is taken directly from testimony from a previous hearing that up to 400,000 acres of land would be retired.

Secretary BABBITT. Well, it's not in the CALFED documents. The CALFED documents do contain some estimates. Now, there may be some confusion here as a result of other issues. There's a separate provision in the CVPIA legislation, for example, with respect to land retirement in the Westlands District. But that's a separate issue and that's a——

Mr. POMBO. That is a separate issue that has nothing to do with this particular issue.

Secretary BABBITT. Good. Good.

So we go back to CALFED. The CALFED documents and discussions and the reality, the estimates are that we may be talking in the ecosystem restoration piece about impacts on about 30,000 acres, and of that 30,000, about 26,000 would not be taken out of agricultural production.

So the best estimates right now are that the ecosystem restoration issues would impact by taking out of production several thousand acres, 4 or 5,000 acres. The economic benefits that will flow from that will—to all the communities, I think, will overwhelm any conceivable argument that there's any detriment. I don't see it.

Mr. POMBO. What you're testifying to today is in direct conflict to testimony we have received earlier in this Committee. It's in direct conflict to what a number of people have testified to in terms of what's included in the CALFED document. If we are talking about 4- to 6,000 acres of land that would be retired, I think that—although it would still concern me, I think it would be manageable in terms of an economic impact. But your numbers of 4- to 6,000 aren't even in the ballpark of what everyone else that has testified before this Committee has come up with. It's not even close.

Secretary BABBITT. Well, Mr. Pombo, I think you will be happy and satisfied because those are the numbers. They appear on either page 6 or 7 of my testimony, and I would be happy to back them up. I think you're going to be quite pleased.

Mr. POMBO. I would like you to do that. Because the—and I would provide to you—as a matter of courtesy, I would provide to you previous testimony that we have had before this Committee, and you can run it through your shop and——

Secretary BABBITT. Sure.

Mr. POMBO. [continuing] and try to see how you come up with so different figures.

But just—I know my time is up. Just in conclusion of that, if the numbers are what has been estimated by everyone else to be substantially higher than to what you are testifying, I would just like to say that has a substantial impact on my area; and the Department of Interior, the Federal Government and the State government are going to have to be very aware of what kind of an impact that is going to have on my particular area of the State. So I do want, as a matter of the record, to have that noted, that if everybody else that testified is accurate, it would have a severe impact on our region.

Secretary BABBITT. Mr. Pombo, it may be—the discrepancy may in part be—I just want to acknowledge that I am talking about lands which have been impacted by specific site-specific plans that have been approved in the process. Now, I concede that there may be a variety of estimates about what the future holds.

Mr. POMBO. I'm talking about long term in the future. I'm not talking about what's been approved up to this point.

Secretary BABBITT. Okay. I misunderstood you. And I guess what I would say is that the estimates about the future are pretty speculative. I understand your concerns and will be responsive to them.

Ms. NICHOLS. Mr. Pombo, could I add a comment on behalf of the State?

Mr. POMBO. Yes, please.

Ms. NICHOLS. I met with Secretary Lyons of the California Department of Food and Agriculture this week actually, and Mr. Snow, to discuss this issue and how we're going to reconcile the State's commitment to preservation of prime agricultural land, which is a policy of this administration as it has been in the past, and indeed we have significant programs in my agency that are de-

signed to encourage preservation and protection of agricultural land. And we certainly don't want to be in any way suggesting that we're encouraging people to convert that kind of land to non-economic purposes where it's productive.

I would just say that the environmental impact report is going to be spelling out how that—I believe the number that you gave is the extreme end of what I have heard as a worst-case assessment that will be looked at under the EIR/EIS for purposes of evaluating what could be the worst environmental possible case, if every person who had agricultural land chose to sell the water away from that land and to fallow it for purposes of selling their water for, you know, a higher economic use if that was what they chose to do.

I don't think anybody believes that that's a realistic scenario, but we need to clarify what our policies are in that respect. And I think it is clear that it's not something that CALFED is looking to—CALFED is not about the business of trying to encourage good agricultural land to be idled in California.

Mr. POMBO. Well, and I realize you were not yet in office, but the testimony on the 400,000 acres was an official person who testified to that. The extreme end of that I believe was a million acres, was a different definition of what could be retired, that up to a million acres could be retired out of that.

Most of this would be within my congressional district, within the area that I represent. I would only tell you that there are only approximately 650,000 acres of irrigated land within my congressional district, and they're looking at somewhere in the neighborhood of 400,000 acres that would fit into the definition of what could be retired under CALFED. When we receive that kind of testimony, it's obviously going to be a huge concern to the people that I represent because that would have a severe impact on my region of the country.

Thank you, Mr. Chairman.

Mr. DOOLITTLE. Mrs. Christensen is recognized.

Mrs. CHRISTENSEN. Thank you, Mr. Chairman.

As the only member here present who is not from California, unless you want to count my year of internship in San Francisco, I really don't have any questions. I just—I am here to listen. Because even in my small district that is surrounded by water, water supply and distribution is an important issue for us. And primarily I want to just welcome you, Secretary Nichols, and of course our Secretary of the Interior, Secretary Babbitt, good friend of my district and of all of our districts.

Thank you, Mr. Chairman.

Mr. DOOLITTLE. Thank you.

Mr. Secretary, the PEIS that was supposed to be released almost four years ago, is now scheduled to come out in September, correct?

Secretary BABBITT. Yeah.

Mr. DOOLITTLE. So—and it's my understanding there have been some modeling problems——

Secretary BABBITT. That's correct——

Mr. DOOLITTLE. [continuing] which may result in further delay. Do you contemplate that it may delay it beyond September as you go through the modeling problems and then once you come up with

what you think is the answer, is this going to be recirculated again? And finally, what's likely to be the possible impact of delay on this?

Secretary BABBITT. Mr. Chairman, I think the modeling issue has been resolved to the satisfaction of all of the participants. So that's already been factored in.

Mr. DOOLITTLE. Okay.

Secretary BABBITT. I think we'll be okay.

Mr. DOOLITTLE. So are you quite confident, then, you would be able to get that done and get the timetable for these—renewing the contracts under the long-term renewal would be—was it December of this year you were saying?

Secretary BABBITT. Well, my estimate in response to Congressman Miller's question was that I believe we move to a record of decision approximately November.

Am I okay on that?

Hearing no dissent, it's November.

Mr. DOOLITTLE. Okay.

Secretary BABBITT. Now, what I would like to do is—what we're aiming at is to get those long-term contracts finished up before the beginning of the next water year, which means early on in the year 2000.

Mr. DOOLITTLE. Okay. Mr. Secretary, you won't be here for the third panel's testimony, but that is written testimony submitted, and it will be oral testimony when we get there. Could I just read you a paragraph from Daniel G. Nelson's testimony, who is the Executive Director of the San Luis and Delta-Mendota Water Authority? I would like to get your response to it, if I might. It's on page 5 of his testimony.

It says, "Now the most recent PEIS data suggests that even before full implementation of CVPIA, the CVP is so inflexible that water available to contractors will be decreased to zero in all water years that are less than normal years. The wide discrepancy between this data and earlier information contained in a draft PEIS threatens to derail the current work plan schedule. That is, the new PEIS data appears to indicate that the assumptions that have guided the PEIS give the fish and wildlife obligations of the CVP significant priority over contractual obligations, contrary to the CVPIA's purpose of achieving balance between project purposes."

Could you comment on that?

Secretary BABBITT. Sure. I have great regard for Mr. Nelson and his advocacy and his judgments. But he is an advocate, and even Dan Nelson can get a little bit overheated from time to time. And, you know, the mandate of CVPIA is to put wildlife restoration on parity as a project purpose. And——

Mr. DOOLITTLE. But not superiority.

Secretary BABBITT. No, parity. Now, that's what this process is all about. And we will in due course have a document out in the light of day for everyone to judge the quality of our efforts.

Mr. DOOLITTLE. Well, do you share Mr. Nelson's conclusion that the water available to contractors will be decreased to zero in all waters years that are less than normal years?

Secretary BABBITT. Well, I would have to go back and look at it, but I'm a little skeptical of that sweeping a conclusion.

Mr. DOOLITTLE. Well, even if it weren't zero, it's likely to be substantially reduced, right?

Secretary BABBITT. Well, implicit in CVPIA is some water reallocation. I mean, that's the whole premise of the exercise. And our job is to see if we can do that in a reasonable way, consistent with the statutory mandate.

Mr. DOOLITTLE. Mr. Dooley, are you ready to begin your questions?

Mr. DOOLEY. Yeah. I just wanted to revisit this issue in terms of, you know, the CVPIA and the actions that are supposed to be undertaken to provide for offsetting the yield that might be lost for environmental purposes. And I guess I go back to the 3408-I where it basically states that in order to minimize adverse effects, if any, upon existing Central Valley Project contract water contractors resulting from water dedicated to fish and wildlife under this Title such and such, the Secretary shall, not later than 3 years after the date of enactment of this Title, develop and submit to Congress a least cost plan to increase within 15 years after the date of enactment of this Title the yield of the Central Valley project by the amount dedicated to fish and wildlife purposes under the Title, which would seem to be a pretty specific, you know, mandate that the Secretary and the Department determine, you know, how we do increase the yield offset allocations that might be lost to the environment.

I guess, you know, what progress has the Department made in terms of identifying these, you know, opportunities for enhanced yield?

Secretary BABBITT. Congressman, that really takes us back into the CALFED process inevitably it seems to me. Because that's the purpose of this exercise, is to find ways to reoperate the system, to store water, to find efficiencies, to—precisely this purpose for all users, including CVP users.

Mr. DOOLEY. And I appreciate that. But the point I guess I want to clarify is that there is a mandate within the CVPIA for the Department in which you are now using the CALFED process as a way to achieve that outcome to identify ways in which we can increase yield to offset water that has been utilized for the environment. And you would agree with that.

Secretary BABBITT. Congressman, I hear you. I agree. I think we owe you a response that is specific to the mandate of the statute, even if the major part of the response is a discussion of the CVPIA impacts.

I am also advised by my loyal staff that that report was done 3 years ago and is now under consideration by CALFED. My previous answer is inoperative.

Mr. DOOLEY. If we could move on. There's been some discussion in terms of the renewal, long-term renewal of the contracts; and I share those concerns because the PEIS has not been completed.

You know, the first draft had some modeling assumptions in it which I think were determined by all parties to be flawed, and we put in place some new modeling that is going to be embodied in the PEIS. But I'm a little concerned that that is going to be released, and I have to believe it's going to be subject to some controversy and discussion. And yet we're expecting that we can get through

that exercise and have a final rule on this thing accepted and then be able to get the long-term contracts renewed prior to the next water year. And as being involved in this, you know, in previous years, I'm very, very cautious about and not necessarily optimistic we can achieve that.

And, in part, my concern on this is that I'm not convinced that we have given adequate consideration to some of the issues that are going to be a part of the long-term contract renewals. And with specific issues there is that, as I understand it, the Department of Interior is involved in a process to determine the basis of negotiations, which I think is appropriate, but what I'm concerned about is how can you make a determination what the basis of negotiation is for an issue such as tiered pricing when there hasn't necessarily been that dialogue and interchange between users and the Department that can really allow us to come to some level of consensus on tiered pricing.

And what I would also say, that that has a direct impact in the earlier discussion we had on underground recharge, which you've acknowledged is one of the best alternatives for water storage. And yet if we're not careful to how we structure this tiered pricing, we are in fact putting one of the, you know, the greatest, you know, disincentives in place for water contractors to engage in conservation measures and storage measures that utilize the underground.

And I'm a little concerned that the Department hasn't engaged in a process to allow us to address some of these critical policy issues prior to identifying a basis of negotiations that will have a significant impact on how the long-term contracts are negotiated and renewed.

Secretary BABBITT. Congressman, I hear your concerns; and I'll do my best to factor them into this process. I do think that we are ready to proceed to conclusion on that time frame, and I will do my best to make sure we deal with these issues in a, you know, public or in a stakeholder communication process that gives everybody a chance to be heard.

Mr. DOOLEY. I guess my specific concern again on this tiered pricing, though, is, if I understand the Department's process, if you do in fact determine a basis of negotiations as it relates to tiered pricing, you are setting the parameters there. And it's an arbitrary decision by the Department to set the parameters in negotiation as it deals with tiered pricing. I'm a little concerned that the Department makes a decision like that before—on a difficult policy issue such as this which has ramifications on water conservation as well as utilization that—before we really have had this dialogue. And I'm hopeful that the Department would have a process to allow us to engage in a discussion on this issue prior to that finalization of the basis of negotiation and prior to us entering into the negotiations on long-terms contracts.

Secretary BABBITT. I will do my best to do just that.

Mr. DOOLITTLE. Mr. Secretary, I assume from your testimony and responses to questions you believe that CALFED's cooperative approach to problem solving is better than the traditional government command and control approach that's been used in the past to solve these problems.

Secretary BABBITT. I do.

Mr. DOOLITTLE. Can you commit to having your department using its discretion to minimize the negative impacts on water users when attempting to reach the goals of water management in California?

Secretary BABBITT. Mr. Chairman, I respectfully submit that this afternoon if you question the stakeholders as to my involvement in this issue, you will hear answers that reassure you on that score. Of course. Of course.

Mr. DOOLITTLE. There's so many things here, as you pointed out, about the Trinity River and so forth in your answers to Mr. Miller's questions. I mean, we've got so many laws involved in all of this that—in fact, that's the whole reason we had the Bay-Delta Accord and CALFED, is to resolve the apparent conflicts in managing for single purpose objectives and trying to coordinate the whole thing.

But to a certain extent we still have this tension because of what happens in the Trinity River, as you and others have acknowledged, is going to impact what happens in the whole Central Valley. So while there may be no legal requirement, there may never not have been a legal requirement dealing with the Trinity, but at least it's reassuring I think to hear your commitment to try and minimize any adverse impacts to the extent that that's possible within the parameters.

Secretary BABBITT. That is certainly my intention.

Mr. DOOLITTLE. Well, I think this has been a very useful hearing for us. I'm going to call on Mr. Dooley one more time if he would like to—okay. You're set.

I am sure we may have further questions by way of follow-up. I appreciate and express to our distinguished guests our appreciation for their appearance here, and the length of the questioning so forth has been useful to this Subcommittee as we seek to make progress in this most important issue of the Central Valley water management. So we will now excuse this panel, and thank you again for your appearance.

Secretary BABBITT. Chairman, thank you very much. I do very much appreciate the spirit in which this hearing has been conducted. Thank you.

Mr. DOOLITTLE. Thank you.

Ms. NICHOLS. Thank you for your support.

Mr. DOOLITTLE. We'll call up the second panel and ask them to assemble themselves at the table. And just to announce, just for everybody's information, there is supposed to be a vote in 5 or 10 minutes. So at that point we will take a 15-minute recess. If that vote doesn't happen, I think at least by 1:30 or so we'll take a recess anyway for that time. But I'm anticipating that everybody can get a break at the time the vote happens.

So do we have everybody assembled up there? I think we do.

Okay. Let me ask you gentlemen, please, who are forming Panel II, if you would rise and raise your right hands.

[Witnesses sworn.]

Mr. DOOLITTLE. Let the record reflect each answered in the affirmative.

Gentlemen, we welcome you as our second panel on this hearing today. And in the first go-around we were a little liberal in how we ran the lights. I think just because of the time of the afternoon and

the size of the panel we'll try and adhere a little more strictly to it. But don't cut off in mid-sentence if the light goes on and you're not finished. We want to hear your testimony. And appreciate your making yourselves available to the Committee.

We'll begin this panel with the testimony of Mr. Stan Sprague, who is General Manager of the Orange County Municipal Water District from Fountain Valley, California. Mr. Sprague. Welcome.

STATEMENT OF STAN SPRAGUE, GENERAL MANAGER, ORANGE COUNTY MUNICIPAL WATER DISTRICT, FOUNTAIN VALLEY, CALIFORNIA

Mr. SPRAGUE. Thank you, Mr. Chairman, members of the Committee.

As you already mentioned I am from the Municipal Water District of Orange County. I am here today as a representative of the Bay-Delta Urban Coalition, which consists of the 11 major urban water supply agencies in California, providing over 22 million people with their water supplies in California. I would also mention if I were just here representing the municipal water district solely from Orange County my comments would not be much different.

The Coalition really represents a unified voice of both southern and northern California urban water agencies. In fact, we've moved to the concept that we are urban water agencies and we don't in our discussions even depict where we come from. Northern California now is in Redding for the purposes of our urban discussions.

The basic urban message regarding the CALFED process is supportive and optimistic. We believe that CALFED continues to have the highest potential of any alternative for achieving a comprehensive plan for restoring the Delta and establishing a long-term management plan which balances all interests which depend on water from the Bay-Delta region.

During the last part of last year the Federal agencies, under the leadership of Secretary Babbitt and under former Governor Wilson, moved forward with a significant effort of investing time in what was called the so-called Phase II report, which is essentially a draft preferred alternative for a long-term plan. A completion of the Phase II document should be considered as a significant accomplishment.

Our positive views about CALFED programs, however, are not without qualification. One of the principal reasons it was possible to get closure on this document was that many of the toughest Bay-Delta issues simply were not decided. These include several issues which relate to the single most important objective to urban water suppliers and the improvement of drinking water quality. Urban agencies accepted this deferral of decision on the basis that these programs would be resolved shortly into the beginning of this year. We have not seen that significant closure on those particular issues at this time.

Following the release of the report, however, promised action on water quality issues have not been forthcoming, as I mentioned. As a result, the urban agencies are deeply concerned that the draft EIS/EIR will not adequately address the process to solve water quality issues in the long term and will not initiate a substantive step, steps essential to improving drinking water quality.

To assist the Committee in understanding our concern, let me remind you that as a drinking water source the Delta is a very poor quality compared to the national average. Poor quality source water increases public health risks and requires more costly treatment without the safeguards of source quality protection.

In addition, natural components in the Delta when treated create products that are potential hazards in themselves. In plain terms, treatment has defined limitations both chemically and in terms of costs. We have no choice but to judge the success of CALFED program on its ability to resolve the water quality issues.

To hold the continued support of the urban communities, CALFED agencies must begin making some of the key decisions on water quality. The key elements can simply be stated as follows:

> Increased commitment from EPA and other key agencies to help urban agencies achieve drinking water quality goals; timely achievement of a long-term target for bromate or bromates for total organic compound and for total dissolved solids through a combination of higher source quality protection and new treatment technology; the creation of a Delta Drinking Water Council, a Delta Ecosystem Restoration Authority and an overall CALFED management entity with fair and balanced stakeholder representation on each; keeping the dual conveyance option on the table for further study; completing feasibility studies and beginning construction of a North Delta diversion to mitigate environmental actions detrimental to water quality.

The urban agencies have made it clear in the CALFED process that these are the water quality issues that must be addressed. We remain helpful and optimistic this will be done.

In closing, Mr. Chairman, let me say that I have also included in my written testimony an additional list of issues which relate to those elements of concern to urban California and that is water supply reliability. And I will only respond to those if you ask for additional comments.

I would like to thank you and your Committee for the continued support for holding this hearing and to indicate the urban support for continued funding and the continued oversight of this CALFED activity. Thank you very much.

Mr. DOOLITTLE. Thank you.

[The prepared statement of Mr. Sprague follows:]

STATEMENT OF STANLEY E. SPRAGUE, GENERAL MANAGER, MUNICIPAL WATER DISTRICT OF ORANGE COUNTY ON BEHALF OF THE BAY-DELTA URBAN COALITION

Representatives of the Bay-Delta Urban Coalition[1] have been active participants in the CALFED Bay-Delta Program to develop a long-term, broad-based consensus agreement for improving the California Bay-Delta Estuary. Our Coalition, consisting of 11 urban water agencies, collectively supplies water to over 22 million people in urban communities around the State of California; communities that form a cornerstone in the state's thriving economy.

[1] Bay-Delta Urban Coalition consists of 11 agencies representing over 22 million people in urban communities throughout California. Coalition agencies include Alameda County Water District, Central Coast Water Authority, City and County of San Francisco Public Utilities Commission, Coachella Valley Water District, East Bay Municipal Utility District, Metropolitan Water District of Southern California, Municipal Water District of Orange County, San Diego County Water Authority, Santa Clara Valley Water District, Solano County Water Agency and Central/West Basin Municipal Water District.

The Urban Coalition remains supportive and optimistic about CALFED, and continues to believe that this process retains the highest potential for resolving the complex issues surrounding the Delta. We commend Secretary of the Interior Bruce Babbitt, former Governor Pete Wilson, and the Federal and state participants of CALFED for extraordinary efforts in 1998 to gain closure on the draft preferred alternative (outlined in the Revised Phase II Report released in December, 1998). We believe the draft reflects progress on a number of policy issues affecting the Delta and that CALFED remains committed to achieving *continuous improvements* in the four interrelated problem areas affecting the Delta (ecosystem restoration, water quality, water supply reliability and levee system integrity) and to *measurable milestones* to be used as indicators of this continuous improvement.

Our positive view about the program, and the results thus far, however, are not without qualification. First, it should be recognized that one of the principal reasons it was possible to get closure on the Revised Phase II Report was that many of the toughest issues were not decided. Among those issues were several which relate to the one objective which urban water suppliers must achieve in the Delta if the CALFED Program is to be judged successful. That objective is the improvement of drinking water quality. Because of the burden placed on our public agencies to continue to provide a reliable supply of safe drinking water to the residents of California's most rapidly growing areas, we have no choice but to judge the success of the CALFED Program on its ability to resolve these issues, and help us meet the demands placed on our agencies. We believe the CALFED Program remains the best forum for solving problems of the Delta, but unless we and our constituents are convinced that it can and will solve water quality challenges, both drinking water and improved source water, we will not be able to continue to support CALFED.

As previously stated, closure on the Revised Phase II Report required tempering and deferring a number of important issues, particularly those important to urban agencies. This result was accepted, however, on the basis of representations in the CALFED process that the bypassed issues would be expeditiously resolved in the period following the Revised Phase II Report. Following release of the Revised Phase II Report, however, there has been little or no progress on the water quality issues which are central to the urban communities' support of CALFED. The process has become passive as Federal and state agencies focus exclusively on the pending release of the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) due this June.

Now, we are deeply concerned that the revised Draft EIS/EIR will not adequately address the water quality issues most important to urban California. In fact, CALFED has stepped back from promises made to the urban community during the negotiations that led up to the Revised Phase II Report, both as to the process to address water quality issues and the substance of the issues themselves. In plain terms, EPA and other key agencies have yet to move forward on any of the key decisions regarding urban communities' drinking water quality issues.

Let me be more specific as to some aspects of the water quality problem for urban water agencies, and why it is increasingly difficult for many of us to answer the tough question posed to us by our Boards—"what is in the CALFED Program for us?" Generally, as a drinking water source, water diverted from within the Delta is of very poor quality compared to national averages. Poor quality source water increases public health risks and requires far more costly treatment that drives up water rates and affects the state's economy. In addition, natural components in Delta water, when treated, create byproducts that are potential health hazards.

The 22 million people we serve expect and demand adequate supplies of healthy drinking water at an affordable cost. We have continually attempted to convince our communities that CALFED would deliver what they expect in balance with other legitimate Bay-Delta objectives. As public water managers, we have a duty to be honest and forthright in providing our customers with the facts concerning their water supplies. If CALFED is unsuccessful at addressing our water quality and supply concerns, we must not only communicate this to our public but reluctantly begin to look elsewhere for solutions, most of them more expensive alternatives. To hold the continued support of urban communities in California, Federal and state agencies and CALFED must renew their commitment to ensuring public health by making some of the tough decisions on water quality. For the most part, this does not mean making final decisions, but rather including in the preferred alternative, for further study and comment, those elements of a CALFED solution which are most important to achieving urban water quality objectives. These key elements include:

- Increasing commitments from EPA and other key agencies to help urban agencies achieve water quality goals for human consumption.
- Providing for the timely achievement of long-term targets of 50 ug/l for bromide, 3 mg/l for total organic carbon and 150 mg/l for total dissolved solids

through a combination of higher quality source water and new treatment technology. Timely means prior to the time that EPA or CDHS require additional treatment based on source quality which exceeds these levels.

- Creating a Delta Drinking Water Council, Delta Ecosystem Restoration Authority and overall CALFED management entity with fair and balanced stakeholder representation on each.
- Keeping the dual conveyance option on the table. Begin planning and feasibility studies for the isolated facility portion of the dual conveyance option in Stage 1 and define a clear procedure for the decisions on construction.
- Completing feasibility studies and beginning construction of a North Delta diversion to mitigate environmental actions detrimental to water quality. Such diversion must first be assessed and mitigations identified for its impacts on the Mokelumne fishery.

It is imperative urban water agencies see action in the CALFED Program in the near-term to address water quality issues. We must be able to demonstrate to our Boards and consumers that CALFED, state and Federal agencies are serious about public health protection as it relates to water quality. Continued support for the CALFED Program hinges on our ability to show CALFED action in this direction.

Other Priority Issues of Concern:

Lack of progress on other promises made to urban water agencies during the negotiations that led up to the Revised Phase II Report, particularly those affecting water supply reliability, cause us concern about the potential success of the CALFED Program. This furthers our belief that the CALFED Program is unbalanced in its approach to resolving issues important to urban stakeholders. We believe restoring balance to the CALFED Program is essential to keeping all stakeholders at the table. Restoration of balance should include:

- Extending the Accord through Stage 1.
- Improving water supply reliability for exporters of Bay-Delta water by creating an Environmental Water Account and other mechanisms which provide regulatory insulation from the Endangered Species Act.
- Assuring balanced, staged implementation of Stage 1 and its sub-stages such that progress must be made equally in all areas or none at all.
- Continuing planning, site selection and environmental documentation including Programmatic 404 finding under the Clean Water Act of the need for surface storage and of the conditions that will trigger the need for conveyance and other program actions.
- Agreeing on South Delta improvements and flexible operations to allow export pumps to operate at full capacity during certain times.
- Construction of at least one new south of Delta groundwater storage project.
- Creating a cost allocation and financing program that reflects the proportional share from each party commensurate with the benefits derived.
- Providing financing for water use efficiency measures beyond those that are cost-effective at the local level.
- Creating a healthy water transfers market.

The Bay-Delta Urban Coalition remains committed to a successful Bay-Delta solution that achieves a healthy environment and meets the needs of urban water users in California. To secure support from public agencies responsible for providing drinking water to the large urban areas in California, CALFED must move quickly to make critical decisions on commitments made last December in CALFED's Revised Phase II Report. In particular, these decisions must address actions required to protect public health as it relates to improved source water quality diverted from the Delta. We look forward to working with the CALFED agencies and stakeholders to put the CALFED Program on a track that will allow us to maintain our support.

Mr. DOOLITTLE. Our next witness is Dr. Peter Gleick, President of the Pacific Institute, from Oakland, California. Welcome, Dr. Gleick.

STATEMENT OF PETER GLEICK, PRESIDENT, PACIFIC INSTITUTE, OAKLAND, CALIFORNIA

Dr. GLEICK. Thank you, Mr. Chairman, members of the Committee. Thank you for the opportunity to testify today.

I am a scientist by training. I direct the policy research activities at the Pacific Institute for Studies in Development, Environment and Security in Oakland. I have served on a wide range of boards

and committees, including the Public Advisory Forum of the American Water Works Association, the International Water Resources Association, scientific panels of the American Geophysical Union, and AAAS, although I represent today here the Pacific Institute.

The Institute is an independent, nonpartisan research center looking at a wide range of national and international water issues. We have worked extensively on California water policy issues and provide analysis and policy recommendations about those problems.

We have reviewed the Department of Water Resources Bulletin 160 process. We have offered formal comments and recommendations. We were asked by the U.S. Department of the Interior and the Bureau of Reclamation to do a formal independent review of CALFED's water-use efficiency technical appendix. We recently published a new report called Sustainable Use of Water: California Success Stories. I provided executive summaries of that for the Committee, and the full report is here as well.

This report presents 40 different detailed case studies of what works in California, the good news about smart activities already under way. These are the elements, the pieces of what needs to be done in California, although more broadly and more consistently than is already under way. Unintentionally, albeit somewhat fortuitously, these 40 case studies span the districts of every one of the California members of this Committee.

Despite rhetoric to the contrary, there is no major water crisis in California. At least, there doesn't have to be. There is a wide range of innovative and successful projects and activities already under way showing how to address California's diverse water problems.

The bad news is that there is a crisis in California water policy making. This are real problems at the upper levels of California water planning and management in the way we think about water policy. In particular, the official California water plan, the Bulletin 160 process, is failing to do what it should do.

The CALFED process is doing much better. I fully support the CALFED process. But its forecasts of future water use and demand in California have unfortunately adopted some of the worst parts of the Bulletin 160 process.

I would be happy to address these issues later if you wish, but what I would like to do is talk a little bit about the good news, what seems to be working in California and what I think it means.

Out of the limelight, every single economic sector in California is working to resolve water problems and having some success. Water use is becoming more efficient in every sector. Smart collaborations are finding ways of restoring natural ecosystems while at the same time maintaining California's excellent agricultural productivity and protecting landowners.

California's farmers are continuing to innovate and modernize, using less water while producing more food and fiber and profit. Urban water-use efficiency improvements are keeping ahead of population growth. In other words, even as population grows in California, the amount of water each person is using is dropping; and in some cases even total water use in California is dropping. The potential for even greater improvements in efficiency is enormous.

This kind of good news means that the number of successful tools we have for solving California's water problems is growing, and let me offer a few specific examples.

In the urban areas, cities are becoming much more efficient, breaking the link between population growth and water use. San Diego County is using less water, 13 percent less than it was using 10 years ago, even though its population has grown 10 percent. Los Angeles in 1970 used 590,000 acre feet of water. In 1998, they used about 590,000 acre feet of water and yet Los Angeles's population has grown 32 percent. Figure 1 in my written testimony shows this.

Industrial, commercial, and institutional water use efficiency is rising dramatically. Between 1980 and 1990 in California industrial water use dropped 30 percent, while industrial revenue and income increased 30 percent; and that trend has continued in the 1990s.

Despite the statements over the need for new surface storage—which I can address later if you wish—new storage in the form of massive groundwater banks is already being created. In the past 20 years at one facility alone near Bakersfield, nearly a million acre feet of water have been stored. The Semitropic Water District groundwater banking program has stored 500,000 acre feet of water in the past decade.

In the agricultural area, with relatively little official policy or recognition, growers have been moving toward higher valued crops that use less water per acre and produce even more money. And figure 2 in my written testimony shows this trend, the drop in field crops and grain crops and the increase in California in vegetable crops and fruit crops.

Growers are moving toward more efficient irrigation technologies, saving water, money, and energy and increasing yields. And yet much more potential exists. Figure 3 in my written testimony shows that, while we have moved toward drip irrigation and more efficient irrigation, there's considerable more potential there.

The technological and communications revolution sweeping the country and the world is also having an effect on agriculture. And the more farmers learn about their water use the more efficient they become.

In the environmental area, local landowners are working with environmentalists to improve water quality, restore waterfowl habitat, protect endangered species, and maintain food production.

Now, there are many more examples. There are 40 detailed case studies, and I can't go into them all.

There is also some bad news. As I mentioned, the California's water planning process is—I believe has some fundamental flaws. It uses methods and data and assumptions that are either wrong or outdated. And the previous Department of Water Resources has shown great reluctance to address these problems and to learn from these kinds of successes.

Let me close with a couple of lessons learned.

Existing technologies for improving water efficiency and improving water supply reliability have enormous untapped potential.

Regulatory incentives and motivations can be effective tools. Smart regulation is better than no regulation.

Economic innovation leads to cost-effective changes. The power of proper pricing of water has been underestimated.

Ignorance is not bliss. The more water users know about their own water use and options and alternatives, the better decisions they make.

Finally, the most successful water projects have individuals and groups with different agendas working together. CALFED is a very good example of this. But on the local level the examples are legion. Every successful example has local stakeholders working together to solve these problems.

Thank you for the opportunity to address these issues, to appear before you, and I would be happy later to answer questions you might have.

Mr. DOOLITTLE. Thank you.

[The prepared statement of Mr. Gleick follows:]

Testimony before the Subcommittee on Water and Power of the U.S. House of Representatives Committee on Resources

May 20, 1999

Testimony of
Dr. Peter H. Gleick
President of the Pacific Institute for Studies in Development, Environment, and Security[1]

Successful Approaches for California Water Management

Mr. Chairman and members of the Committee, thank you for the opportunity to testify today. I am a scientist by training and direct the policy research activities at the Pacific Institute for Studies in Development, Environment, and Security in Oakland, California. I have served a wide range of boards and committees, including the Public Advisory Forum of the American Water Works Association, the International Water Resources Association, scientific panels of the American Geophysical Union, the American Association for the Advancement of Science, and others. A full resume is attached.

The Pacific Institute is an independent, non-partisan research center looking at a wide range of national and international water issues. We've worked extensively on California water policy issues and provide analysis and policy recommendations about a wide range of issues. We have reviewed the DWR Bulletin 160 process and offered formal comments and recommendations. We were asked by the U.S. Department of the Interior to do a formal independent review of CALFED's water-use efficiency analysis. And we recently published a new report called **Sustainable Use of Water: California Success Stories.**[2] I've provided copies of the Executive Summary for you and the full report is also available. This report presents 40 different detailed case studies of what works in California: the good news about smart activities already underway. [Unintentionally, albeit fortuitously, these case studies span the districts of every California member on this committee.]

Despite rhetoric to the contrary, there is no real water crisis in California – or at least there doesn't have to be. There is a wide range of innovative and successful projects and activities already underway showing how to address California's diverse water problems. The bad news is that there is a crisis in California water policymaking – real problems at the upper levels of California's water planning and management community in the way we think about water policy. In particular, the official California Water Plan – the Bulletin 160 process – is failing to do what it should. The CALFED process is doing

[1] 654 13th Street, Preservation Park, Oakland, California 94612, 510 251-1600. pgleick@pipeline.com

[2] This project was funded by a diverse coalition, including California foundations, Southern and Northern California water agencies, the U.S. Bureau of Reclamation, the U.S. EPA, local water districts, and others. A full list of funders is provided in the report.

better, but unfortunately it has adopted some of the worst parts of the Bulletin 160. As a result, CALFED has some major flaws and isn't learning what it could from the lessons available statewide. I'd be happy to address these issues if you wish, but let me begin with the good news and what I think it means.

What is the Good News?

Out of the limelight, every single economic sector in California is working to resolve water problems and having some success. Water use is becoming more efficient in every sector. Smart collaborations are finding ways of restoring natural ecosystems while maintaining California's excellent agricultural productivity and protecting landowners. California farmers are continuing to innovate and modernize, using less water while producing more food, fiber, and profit. Urban water-use efficiency improvements are keeping ahead of population growth. In other words, even as populations grow, the amount of water each person needs is dropping, and in some cases, even total water use is dropping. The potential for even more improvements in efficiency is enormous.

This kind of good news means that the number of successful tools that we have for solving California's water problems is growing. Let me offer some specific examples:

Urban Highlights

Cities are becoming much more water efficient, breaking the link between population growth and growing water use.

- San Diego County is using less water – 13 percent less – than it was using ten years ago, even though its population has grown 10 percent.

- Water demands for the Metropolitan Water District peaked in 1990 at 2.5 million acre-feet and now has dropped to 1.7 million acre-feet. They are using less water now then they were 10 years ago.

- Los Angeles used 593,000 acre-feet of water in 1970. Demand rose in the late 1980s and then began to drop back. In 1998 they used 594,000 acre-feet. Figure 1 shows this history. Population during this same period rose from 2.8 million to 3.75 million people – a 32 percent increase.

Water recycling is reducing wastewater volumes and providing water supply, reliability, and environmental benefits.

Industrial, commercial, and institutional water use efficiency is rising dramatically. Between 1980 and 1990, industrial water use in California **dropped** 30 percent, while the State's economic production **rose** 30 percent. This trend has continued in recent years.

Urban streams are being restored.

New "storage" in the form of massive groundwater banks is being created.

- In the past 20 years at one facility alone near Bakersfield, nearly 1 million acre-feet of water have been stored.

- The Semitropic Water District groundwater banking program has stored 500,000 acre-feet of water in the past decade.

Agricultural Highlights

For decades, with no official policy or recognition, growers have been moving toward higher-valued crops that use less water per acre and per dollar earned. Figure 2 shows the drop in field and grain crops and increases in vegetable and fruit crops.

Growers are moving toward more efficient irrigation technologies, saving money, water, and energy, and increasing yields. Much more potential exists, as Figure 3 shows.

Total farm productivity measured in $ per acre-foot of water used has gone up from around $600/acre-foot in 1960 to over $800/acre-foot in 1997 (in 1997$). Net income has also gone up. Figure 4 shows these trends.

Smart collaborations between local landowners and urban agencies are providing high-quality, reliable recycled water for agricultural irrigation.

The technological and communications revolution sweeping the country and the world is also having an effect in agriculture. Farmers are learning how to get the information they need to improve productivity, reduce water use, and increase profits.

Environmental Successes

Collaborations between farmers and environmentalists have led to the removal of small dams while maintaining benefits for growers. Secretary Babbitt participated in one such event.

Local landowners are working with environmentalists to improve water quality, restore waterfowl habitat, protect endangered species, and maintain food production.

Floodplain management is getting smarter and more effective at reducing the risks of California's regular floods, with ecosystem benefits and protections for landowners.

Smart groundwater management is protecting water supplies, water quality, and ecosystems.

Some Bad News?

California's formal water planning process – the Bulletin 160 process – is fundamentally flawed. It uses methods, data, and assumptions that are either wrong or

outdated. The previous Department of Water Resources has been very reluctant to address these problems.

The Bulletin 160 is used as the basis for much of long-term water planning in the State: CALFED has relied extensively on it. Both of these processes fail to incorporate much of the learning that is going on throughout the State in the success stories described in our report.

Lessons Learned and Recommendations

Existing technologies for improving water-use efficiency, improving water supply reliability, and cleaning wastewater have enormous untapped potential. The potential for improving the efficiency of water use is greatly underestimated by official agencies.

Regulatory incentives and motivation can be effective tools. Smart regulation is better than no regulation.

Economic innovation leads to cost-effective changes. The power of proper pricing of water is underestimated.

Ignorance is not bliss: the more water users know about their own use and the options and alternatives available to them, the better decisions they make.

The most successful water projects have individuals and groups with different agendas working together. CALFED is an effort in this direction, but the real successes have been at the local level.

- CALFED has the capacity to provide resources so that these local solutions can happen.

- CALFED is in a unique position to remove obstacles and coordinate agencies that have trouble working together.

- The Bulletin 160 process needs to be revamped or thrown out.

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Supplemental Sheet
Follow-Up Address

Dr. Peter H. Gleick
President
654 13th Street
Preservation Park
Oakland, California 94612

Phone: 510 251-1600

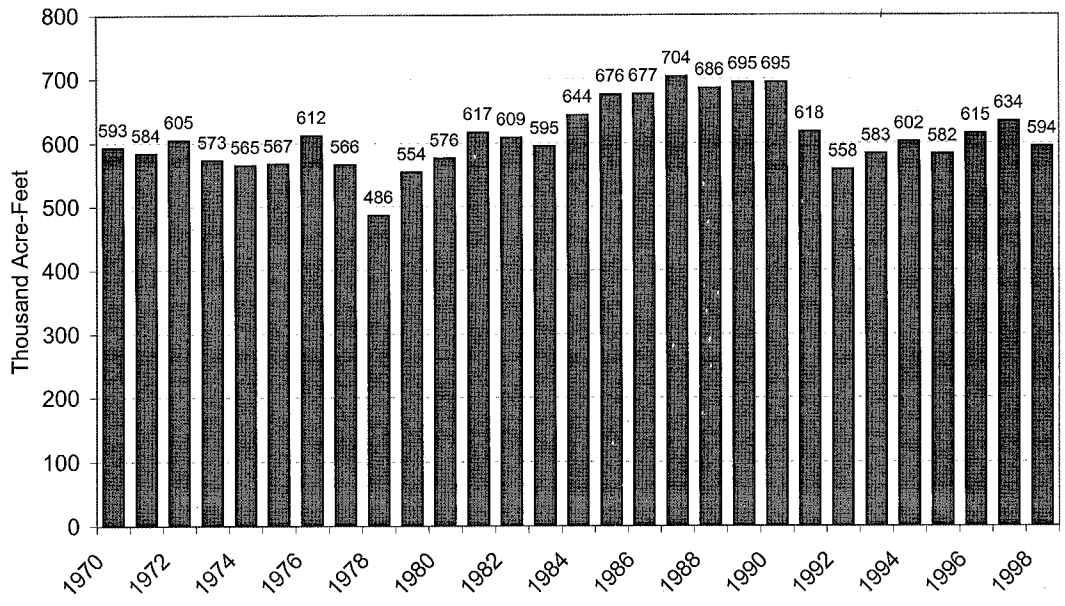
Summary of Comments and Recommendations

There is a wide range of innovative and successful projects and activities already underway in California showing how to address the State's diverse water problems. This testimony summarizes some of the 40 "success stories" analyzed in detail in the Pacific Institute's full report.

Out of the limelight, every single economic sector in California is working to resolve water problems and having some success. Water use is becoming more efficient in every sector. Smart collaborations are finding ways of restoring natural ecosystems while maintaining California's excellent agricultural productivity and protecting landowners. California farmers are continuing to innovate and modernize, using less water while producing more food, fiber, and profit. Urban water-use efficiency improvements are keeping ahead of population growth. In other words, even as populations grow, the amount of water each person needs is dropping, and in some cases, even total water use is dropping. The potential for even more improvements in efficiency is enormous.

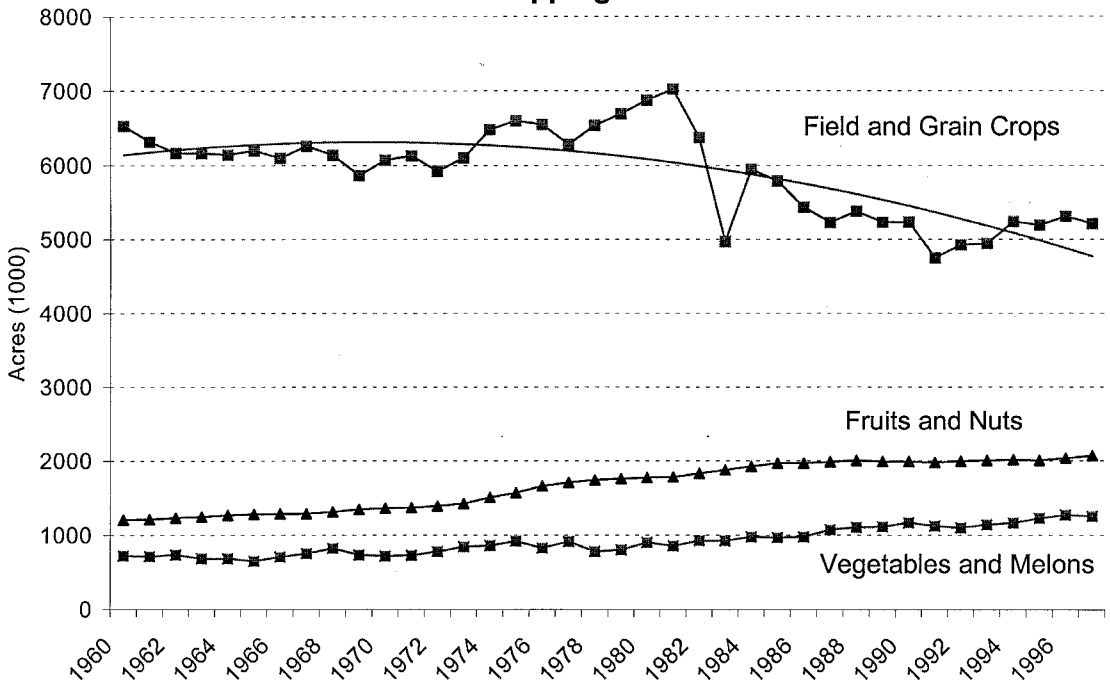
The bad news is that there is a crisis in California water policymaking – real problems at the upper levels of California's water planning and management community in the way we think about water policy. In particular, the official California Water Plan – the Bulletin 160 process – is failing to do what it should. The CALFED process is doing better, but unfortunately it has adopted some of the worst parts of the Bulletin 160. As a result, CALFED has some major flaws and isn't learning what it could from the lessons available statewide.

Figure 1
Los Angeles Water Demand



Data from City of Los Angeles, 1999

Figure 2
California Cropping Patterns: 1960-1997



California Agricultural Statistics Service 1998

Figure 3
Survey of California Irrigation Technology, 1991

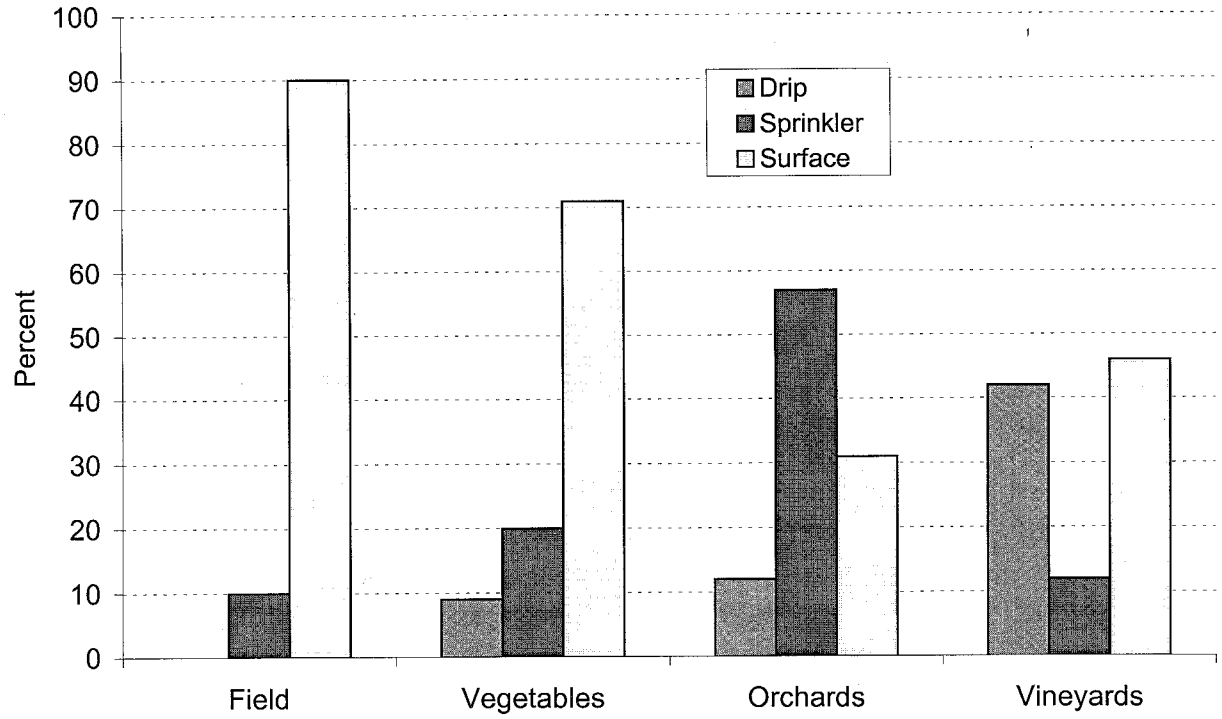
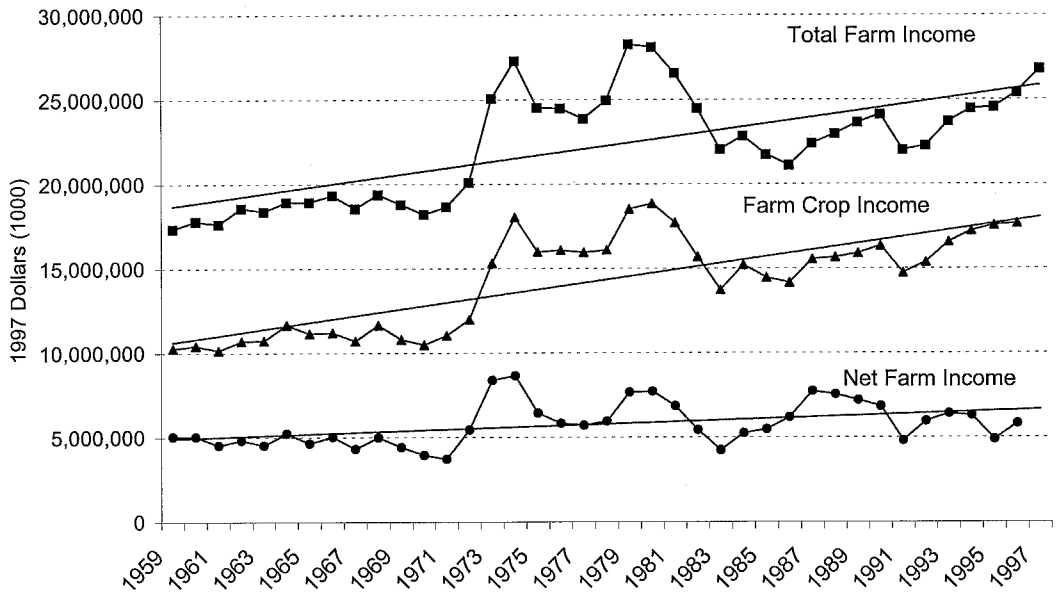


Figure 4
California Farm Income



Data from USDA, 1998

Mr. DOOLITTLE. Well, ladies and gentlemen, I have some good news and some bad news. The good news is you're going to get to have an hour off for lunch. The bad news is it's an hour that we'll have to interrupt at this point. There are a series of votes. The first one is a 15-minute vote, then two 5-minute votes, a little discussion, and then another 15-minute vote, so it makes sense at this point to suspend operations.

When we do come back there will be no more votes out on the floor, so we should be able to move fairly expeditiously through the remainder of the hearing.

So, with that, we stand in recess until 2:15.

[Whereupon, at 1:15 p.m., the Subcommittee recessed, to reconvene at 2:15 p.m., the same day.

Mr. DOOLITTLE. The Subcommittee will reconvene. We're going to begin.

I don't see Mr. Guy here. We'll start with Mr. Don Kaniewski.

STATEMENT OF DONALD J. KANIEWSKI, LEGISLATIVE DIRECTOR, LABORER'S INTERNATIONAL UNION OF NORTH AMERICA, LIUNA–AFLCIO, WASHINGTON, DC

Mr. KANIEWSKI. Thank you, Mr. Chairman and members of the Subcommittee, for inviting me to testify today.

My name is Donald Kaniewski. I serve as Legislative and Political Director for the Laborers International Union of North America. Our California affiliate is an active participant in the Bay-Delta Funding Coalition and the CALFED process. We strongly support moving the Bay-Delta program forward in a balanced fashion to meet the environmental water supply and water quality needs of California. Our members, in addition to being beneficiaries of adequate and reliable water supplies, look forward to bringing their skills in building infrastructure as part of the implementation of the CALFED Bay-Delta program.

While this is an oversight hearing, we would like to draw your attention to our support for the President's request of $95 million in fiscal year 2000 and urge your support for the stakeholder recommendation of allocating $60 million for ecosystem restoration programs and $35 million for water quality levee system integrity and water supply reliability programs.

In addition, we support Governor Davis' recent commitment to a balanced Bay-Delta program whose inclusion of $10 million in the State's fiscal year 1999-2000 budget to support the integrated storage and investigation segment of CALFED.

Why is California's Bay-Delta so important? The San Francisco Bay/Sacramento-San Joaquin Delta is the hub of California's water system. It provides two-thirds of the State's drinking water, irrigates 7 million acres of the world's most productive farmland, is home to 130 species of fish, 225 species of birds, 52 types of mammals and 400 plant species. The Bay-Delta has fueled the trillion dollar economy of California farms and cities for the past half century. However, this vital estuary has been in decline as a water and environmental resource for many years.

In 1994, the Bay-Delta Accord signed by State and Federal agencies and stakeholders brought a truce to decades of divisive conflict over use of Bay-Delta water. The Accord has been extended

through the end of 1999. It established the CALFED Bay-Delta program to develop a long-term water solution for California and a new era of cooperation among stakeholder groups.

Why is our union strongly supporting the CALFED process? Through our own recent experience with cooperative strategies, we value CALFED's emphasis on consensus and accomplishment. The Laborers International Union is a recognized leader and innovator in developing labor-management cooperation programs. These programs are designed to maximize our contractor's ability to be competitive in securing work and provide for the economic security, health and safety of our members. Through these programs, our members deliver the finest construction manpower product in the Nation.

This emphasis on cooperation has manifested itself in other successful ways, including resolving complex interagency issues involving Superfund. We are proud of our record of bringing parties together to resolve issues in a non-bureaucratic way, and the CALFED program is a logical extension of this philosophy of cooperation. The CALFED process is bringing stakeholders together throughout California to craft water solutions for California.

With helpful funding from Congress, CALFED is making progress within the ecosystem component of the program. Partnerships with local interests are resulting in projects that have multiple benefits. You will hear from other stakeholders today as to how the program is providing projects that combine water supply adequacy and reliability, water quality, and ecosystem restoration benefits.

CALFED is also fulfilling its mission towards balanced and comprehensive long-term water plans. Developing solutions that will provide for the State's expected population growth is vital for California's and the Nation's future.

My presence here today is to reaffirm our commitment to the CALFED process. CALFED is an important forum for us to balance our interests in order to provide water, secure jobs, and a brighter future for California.

I want to thank you, Mr. Chairman and the members of the Committee, and ask that as part of the record I submit a document prepared by the California business labor and water leaders coalition on the Bay-Delta solution.

With that, I thank you very much; and I'll entertain any questions at the appropriate time.

Mr. DOOLITTLE. Thank you. And the document, without objection, you submit will be entered into the record.

[The prepared statement of Mr. Kaniewski follows:]

STATEMENT OF DONALD J. KANIEWSKI, LABORERS INTERNATIONAL UNION OF NORTH AMERICA

Thank you Mr. Chairman and members of the Subcommittee for inviting me to testify today. My name is Donald J. Kaniewski and I serve as Legislative and Political Director for the Laborers International Union of North America. Our California affiliate is an active participant in the Bay-Delta Funding Coalition and the CALFED process. We strongly support moving the Bay-Delta program forward in a balanced fashion to meet the environmental, water supply, and water quality needs of California. Our members, in addition to being beneficiaries of adequate and reliable water supplies, look forward to bringing their skills in building infrastructure as part of the implementation of the CALFED Bay-Delta program.

While this is an oversight hearing, we would like to draw your attention to our support for the President's request of $95 million in Fiscal Year 2000 and urge your support for the stakeholder recommendation of allocating $60 million for ecosystem restoration programs and $35 million for water quality, levee system integrity, and water supply reliability programs. In addition, we support Governor Davis's recent commitment to a balanced Bay-Delta program through his inclusion of $10 million in the State's Fiscal Year 1999-2000 budget to support the Integrated Storage Investigation (ISI) segment of CALFED.

Why is California's Bay-Delta so important? The San Francisco Bay/Sacramento-San Joaquin Delta is the hub of California's water system. It provides two-thirds of the state's drinking water, irrigates 7 million acres of the world's most productive farmland, is home to 130 species of fish, 225 species of birds, 52 types of mammals, and 400 plant species. The Bay-Delta has fueled the trillion-dollar economy of California farms and cities for the past half-century. However, this vital estuary has been in decline as a water and environmental resource for many years.

In 1994, the historic Bay-Delta Accord signed by state and Federal agencies and stakeholders brought a truce to decades of divisive conflict over use of Bay-Delta water. The Accord has been extended through the end of 1999. It established the CALFED Bay-Delta Program to develop a long-term water solution for California, and a new era of cooperation among stakeholder groups.

Why is our union strongly supporting the CALFED process? Through our own recent experiences with cooperative strategies, we value CALFED's emphasis on consensus and accomplishment. The Laborers International Union of North America is a recognized leader and innovator in developing labor-management cooperation programs. These programs are designed to maximize our contractor's ability to be competitive in securing work and provide for the economic security, health, and safety of our members. Through these programs, our members deliver the finest construction manpower product in the nation.

This emphasis on cooperation has manifested itself in other successful ways, including resolving complex inter-agency issues involving Superfund. We are proud of our record of bringing parties together to resolve issues in a non-bureaucratic way. The CALFED program is a logical extension of this philosophy of cooperation.

The CALFED process is bringing stakeholders together throughout California to craft water solutions for California.

With helpful funding from Congress, CALFED is making progress within the ecosystem component of the program. Partnerships with local interests are resulting in projects that have multiple benefits. You will hear from other stakeholders today as to how the program is providing projects that combine water supply adequacy and reliability, water quality, and ecosystem restoration benefits.

CALFED is also fulfilling its mission towards developing a balanced and comprehensive long-term water plan. Developing solutions that will provide for the state's expected population growth is vital for California's and the nation's future.

My presence here today is to reaffirm our commitment to the CALFED process. CALFED is an important forum for us to balance our interests in order to provide water, secure jobs, and a brighter future for California.

Mr. DOOLITTLE. Our next witness, we'll go back and pick up Mr. David J. Guy. Mr. Guy.

STATEMENT OF DAVID J. GUY, EXECUTIVE DIRECTOR, NORTHERN CALIFORNIA WATER ASSOCIATION, SACRAMENTO, CALIFORNIA

Mr. GUY. Thank you, Mr. Chairman and members of the Committee.

My name is David Guy. I am the Executive Director for the Northern California Water Association. The Northern California Water Association represents 65 agricultural water suppliers in northern California as well as counties and local business leaders.

I am today going to give you an agricultural perspective on the CALFED process and would like to start off by indicating that we are also part of this coalition that supports the fiscal year 2000 appropriation.

One of the reasons that we support the fiscal year 2000 appropriation is that we see a shift towards a more balanced program,

as just indicated by the previous panelist; and we think that this is very significant and very important for the agricultural community.

There are three pieces of this program that I would like to talk a little bit about that are particularly significant; and this will, I think, shed some light on both the successes and some of the potential shortfalls in the CALFED process as we see it.

One of the most positive efforts we have seen in the State are the fish passage improvements that have been made throughout the State. Secretary Babbitt this morning mentioned Butte Creek and held that out as a great example, and he's right. In the Appendix A to our written testimony we list a sample of the water and the fish passage improvements that have been made in the Sacramento Valley; and these have been true win-win type solutions and are really, I think, the essence of what CALFED should be all about. It improves the ecosystem, and it improves water supply reliability. This has been real positive, and we need to build upon this part of the program.

The second piece is the integrated storage investigation, and although we feel that in the past that not enough attention has been paid to storage within the CALFED process, we are very encouraged that we are starting to see some progress, and the integrated storage investigation is a good indication of that.

The bottom line is that we need to augment the supplies in the State of California to meet not only current demands but also future demands in the State. This will require storage not only north of the Delta, but in the Delta, south of the Delta and in southern California, and that will be essential to maintain this balanced program as part of the CALFED program.

Finally, the third point that I want to touch on is land acquisition. Land acquisition is, again, something that we have significant concern with, and there's a lot of concern in the rural communities in California about the land acquisition part of CALFED. Because what we would like to suggest is that we recognize that there is some land acquisition that will take place and needs to take place and that we make sure that we have responsible land acquisition.

We have outlined in our testimony some steps that we believe are important to assure that we have, in fact, responsible land acquisition as part of CALFED. Some of these measures are under way and others will need to be pushed as we go forward in the CALFED process.

The most important thing about the land acquisition is that we try to avoid the redirected impacts. And that's, of course, one of the solution principles in the CALFED process and is really essential to assure that rural communities are protected in California in the CALFED process.

We're also encouraged that public lands are being looked at rather than private lands when that is possible and when it's conceivable.

We're looking forward to the EIS/EIR that will be coming out, and we are hoping that this document will give adequate attention to the agricultural and rural resources in California. We think that this is very important, and it will send a strong message to rural California about how we are going to treat those resources.

So, with that, I would just like to say that we are very positive about CALFED. We recognize that there are some serious shortfalls, but we feel positive that we can overcome that and that we will and that the fiscal year 2000 appropriation is a good starting place to begin that process. We'll have to keep moving forward to ensure that we have a balanced program that will, in fact, benefit not only agriculture but also all the other sectors of the California economy and the environment.

Thank you.

Mr. DOOLITTLE. Thank you.

[The prepared statement of Mr. Guy follows:]

STATEMENT OF DAVID J. GUY, EXECUTIVE DIRECTOR, NORTHERN CALIFORNIA WATER ASSOCIATION

Mr. Chairman and members of the Subcommittee, my name is David Guy. I am the Executive Director of the Northern California Water Association (NCWA). NCWA is a non-profit association representing sixty-five private and public agricultural water suppliers and farmers that rely upon the waters of the Sacramento, Feather and Yuba rivers, smaller tributaries, and groundwater to irrigate over 850,000 acres of farmland in California's Sacramento Valley. Many of our members also provide water supplies to state and Federal wildlife refuges, and much of this land serves as important seasonal wetlands for migrating waterfowl, shorebirds and other wildlife. I appreciate the Subcommittee's inclusion of my written testimony in today's hearing record.

We appreciate the opportunity to provide the Northern California perspective on CALFED. NCWA has actively participated in the CALFED process, as a signatory to the 1994 Bay-Delta Accord and a participant in the development of California's Proposition 204, the Federal Bay-Delta Security Act (Pubic Law 104-333) and the CALFED Revised Phase II Report. Two representatives of NCWA's Board of Directors, Chairman Don Bransford and Director Tib Belza, currently serve on CALFED's Bay-Delta Advisory Council (BDAC). NCWA is also a member of the Ecosystem Roundtable—the entity chartered to allocate state and Federal ecosystem restoration funds.

The Subcommittee's interest in water management in California's Central Valley and particularly the CALFED Bay-Delta Program (CALFED) is appropriate given the importance of a successful resolution to the environmental and water supply problems in the Sacramento–San Joaquin River Delta and San Francisco Bay (Bay-Delta). The Bay-Delta is a tremendous economic and environmental resource to California and the Nation, and there is much at stake in how CALFED implements its numerous ecosystem restoration and water management actions. Both the Department of Interior and the California Resources Agency's testimony today before this Subcommittee will be very useful for private interests participating in this process.

NCWA has been invited today to discuss the status of the CALFED program from an agricultural perspective. It was a year ago (May 12, 1998) that we provided testimony to this Subcommittee on the CALFED program and particularly the allocation of Federal funds for ecosystem restoration. Since that time, there has been good progress in certain parts of the CALFED program and very little progress in others.

Most notably, CALFED late last year issued its Revised Phase II Report. This report was significant for several reasons. First, it gave CALFED a needed boost to sustain the program. More importantly, the discussions leading up to the report revealed the need for CALFED to begin broadening its scope to show progress not only for the ecosystem, but also with respect to water management and the water supplies that will be necessary to satisfy the growing demands for water in California.

Like many others, we will provide detailed comments to CALFED when it releases its draft Environmental Impact Statement (EIS)/Enviromnental Impact Report (EIR) and another revised Phase II report this summer. Our testimony cannot and will not cover every CALFED issue. Today, we will focus on the four general CALFED programs that most directly affect the farms, cities and the environment in Northern California: (1) fish passage improvements; (2) surface and groundwater storage; (3) rural land acquisition and (4) water acquisition.

1. Sacramento Valley Fish Passage Improvements

A major success in Central Valley water management is the fish passage efforts in the Sacramento Valley to jointly improve the ecosystem and water supply reli-

ability. These projects are the type of programs that CALFED was formed to develop and implement. These projects also embody CALFED's overall mission "to develop a long-term comprehensive plan that will restore the ecosystem health and improve water management for beneficial uses of the Bay-Delta ecosystem." If successful, CALFED will rehabilitate native fish and wildlife species and their habitat in the Bay-Delta system, and increase water supplies and reliability for California's cities, businesses and farms. One measure of success in the overall program is an improving environment, achieved in part by implementation of restoration projects that resolve known problems. A good example is the installation of fish screens on agricultural diversions to prevent the entrainment of fish species. Program success can be measured by decreasing regulatory disruption of water project operations, and reduced regulations on individual agricultural water suppliers and farmers.

Many of the private interests following CALFED, such as Sacramento Valley agricultural water suppliers and farmers, are financially participating in cost-share arrangements with CALFED agencies on specific restoration projects. Nearly a dozen water suppliers throughout the Sacramento Valley are engaged in the study, design or construction of a fish screen or passage project to protect candidate, threatened and endangered fisheries. Rather than describe every project in detail, we have instead enclosed Appendix A—a sample of the fishery projects that have either been completed or are underway by NCWA members in the Sacramento Valley.

Some of these projects are now complete, such as Western Canal Water District's Gary N. Brown Butte Creek Siphon Project. This unique project resulted in the installation of a concrete siphon to convey agricultural water supplies under Butte Creek, allowing the removal of several small dams that historically hindered spring-run salmon migration to spawning habitat. Completion of this project illustrates the effectiveness of restoration actions in providing immediate benefits to the environment; in this case for spring-run salmon, presently listed as a threatened species under California law and proposed for Federal listing—and for the local community and area farmers who benefit through development of a more reliable water supply.

As with Western Canal's farmers, other agricultural water users in the Sacramento Valley have a vested interest in ensuring state and Federal funds are effectively managed to ultimately improve the fishery, and alleviate regulatory mandates. Their participation is based on the belief the projects will succeed, and are an effective way to restore fisheries and protect landowners from burdensome regulations. Although many projects are either completed or underway, there are many more similar projects that can serve both the environment and water supply reliability. CALFED has been and can continue to be successful in promoting and encouraging these types of projects.

2. Integrated Storage Investigation

One of the shortcomings in the CALFED program has been the lack of progress in providing more reliable water supplies for water users in California. In the early stages of the CALFED process, water users have committed to improve the ecosystem as evidenced by the Bay-Delta Accord, Proposition 204 and the Bay-Delta Security Act. After several years improving and investing in the ecosystem, water users are now adamant that there must be an equivalent commitment by Congress, the California Legislature and the CALFED agencies to improve the state's water supplies for both existing and future water users.

The CALFED Revised Phase II Report was significant in that it strongly recommended the study and ultimate development of new surface and groundwater storage projects in California. This led to the CALFED "Integrated Storage Investigation" which will look at surface and groundwater storage, as well as the opportunities for reoperating existing facilities to maximize water use in California. For CALFED to succeed in the next century, we believe that there must be significant progress in developing a range of water supply alternatives that will improve water supply reliability throughout the state. In Northern California, this should include continued studies and planning for Sites reservoir, raising the existing dam at Lake Shasta, locally driven pilot projects for the conjunctive management of surface and groundwater and water efficiency measures to maximize the local use of water resources.

These water supply options must complement efforts now underway to study and then develop measures to protect citizens and property from the devastating floods that have historically ravaged California's Central Valley. While CALFED must work toward improved water management in the state, it is equally important that CALFED not be used to delay or otherwise stifle significant opportunities to improve water supply reliability on both the regional and local level.

3. Rural Land Acquisition

CALFED plans to implement projects that will replicate natural processes associated with instream flows, stream channels, watersheds and floodplains. CALFED proposes to accomplish this objective primarily by the acquisition of farmland and water supplies to create river meander corridors, riparian forests, and increased instream flows. As an example, CALFED's Ecosystem Restoration Program recommends the implementation of nearly 700 actions over a thirty-year period; however, work has already begun on several of the program's main elements. As a further example, CALFED's earlier draft environmental impact report and impact statement, released in March 1998, recommended the acquisition of roughly 200,000 acres of Central Valley farmland (30,000 acres in the Sacramento Valley) to meet certain goals outlined in the Ecosystem Restoration Program.

The proposed implementation of these particular actions raises legitimate concerns for upstream and downstream communities, landowners and water suppliers. In this regard, it is important that Congress and CALFED understand the groundswell of opposition and concern that is developing in agricultural and rural communities throughout California in response to the large-scale land acquisition program that is being undertaken as part of CALFED and several other programs in California. The *Wall Street Journal* article entitled "U.S Land-Buying Program Leaves County in the Dark—and Furious" provides a glimpse into this problem in Northern California. (See May 5, 1999, CAl.)

CALFED's staff acknowledges the scientific uncertainty underlying the potential benefit to fish and wildlife from these actions. River meander and riparian forest projects necessarily require the acquisition of land along a river or stream in order, for example, to allow the river to inundate land during high flow periods. There are numerous consequences that may arise as a result of these projects, including river level and flow fluctuations and increased sediment and debris loading, which threaten existing water diversions and fish screens. Due to the unpredictable nature of these projects, and the risks they present, NCWA encourages CALFED to initially focus on restoration actions that fix known fish and wildlife problems. NCWA recognizes, however, a limited number of actions that attempt to replicate natural processes may be necessary to restore habitat for at-risk species.

There are several specific steps CALFED should consider before embarking on a large-scale river meander plan in order to avoid adverse social, economic or environmental affects to local communities, landowners, and water suppliers. This is consistent with CALFED's stated principle of implementing actions and a long-term plan that does not result in the redirection of adverse impacts.

As a first step, CALFED must attempt to utilize public lands with similar ecological characteristics prior to acquiring private property to achieve restoration measures. If public lands are unavailable, conservation easements, rather than outright fee title acquisition, should be a priority, and all acquisitions must be voluntary

Second, there is concern that the EIS/EIR has not adequately analyzed the potential impacts to the existing environment, which specifically includes agricultural resources under both the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). CALFED actions have and will result in significant impacts to the agricultural resource base in California, including agricultural land, agricultural water supplies and water quality. In a nutshell, this is the existing environment as it is utilized for agriculture. These actions will have socioeconomic impacts to local communities, local jurisdictions and local economies. CALFED should develop a plan to either avoid or to adequately mitigate for agricultural impacts. A meaningful plan will be critical for CALFED to gain confidence in rural areas and to assure that long-term environmental goals are accomplished in CALFED. Completion of both CEQA and NEPA requirements should be initiated before the acquisition of private property.

Third, CALFED's top-down approach to land-use planning where Federal and state agencies, by either purchasing land or by funding land acquisition, are dictating local land use policies with little local participation in this process. Put differently, there is a deep concern in local communities that CALFED and its member agencies are usurping the land use authority that has traditionally resided in local governments, including counties and cities. There has been progress made by CALFED to incorporate local governments in the funding process for ecosystem projects, but much more effort needs to be made in this regard. Establishment of a representative public process to ensure local involvement must be a cornerstone of any land acquisition program.

Fourth, there has been little, if any, progress on developing assurances that water suppliers and landowners will not be adversely affected by CALFED or its member agencies acquiring adjacent or nearby lands for habitat purposes. NCWA in concert with water users in Northern California has developed an assurances package that

we believe will protect and encourage cooperating landowners and local agencies that allow restoration projects on their lands or on nearby lands. We believe that this is a very constructive approach to advance the ecosystem goals in the CALFED process while providing reasonable and necessary assurances to landowners and local water suppliers. The bottom line is that CALFED must adopt clear assurances, or legal guarantees, that address issues of liability for future damage resulting from project implementation, as well as local tax and assessment responsibility. We look forward to working with CALFED and other interested parties on this proposal.

Finally, in this regard, NCWA has encouraged CALFED to consider adoption of a pilot program that may serve as a model for its future projects involving land acquisition. Although the specific principles of our recommendation are still under development, our goal is to accomplish restoration actions compatible with economic activities, including farming, water district operation and flood control protection.

4. Water Acquisition

The CALFED Revised Phase II Report developed the so-called "Environmental Water Account" (EWA). NCWA strongly supports this flexible management approach to address complex delta issues as opposed to the traditional regulatory approach. Like the other parts of CALFED, however, the EWA must be defined so that water users benefit in its implementation. From the Northern California perspective, we have concerns that this program relies too heavily on upstream flow contributions to the delta. The EWA seems to assume that upstream water will be available as an asset to meet EWA demands, which is not a sound assumption. This is particularly a concern when EWA water is in addition to flows required under the Central Valley Project Improvement Act (CVPIA) Anadromous Fish Restoration Program and other environmental programs.

5. Conclusion

With respect to FY 2000 funding, NCWA has joined this year with a coalition of California business, labor, water users and the environment to request and support a $95 million Federal (FY 2000) appropriation consistent with the Federal Bay-Delta Security Act and other relevant authorizing legislation. This request includes $60 million for ecosystem purposes and fishery improvements and $35 million for water management, including the Integrated Storage Investigation (ISI). (See April 16, 1999 coalition letter.)

From the Northern California perspective, the CALFED process was intended to address problems in the Bay-Delta which are largely associated with water uses south of the delta. NCWA endorsed the CALFED process to address these problems, as long as CALFED, in seeking solutions, does not redirect impacts and problems northward. NCWA's support of CALFED is predicated upon CALFED and its member agencies fully recognizing the senior water rights held by entities and individuals within the areas of origin. Unfortunately, these fundamental water rights seem to get lost in the zeal to move forward with the CALFED program. Unless these rights are, in fact, recognized and honored by CALFED and its member agencies, NCWA's support for CALFED, including support for future funding, will not continue.

If you have any questions or would like to discuss this further, please call me or Dan Keppen in our office.

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APPENDIX A

NCWA: Local Fishery Projects in the Sacramento Valley

The Sacramento Valley's initiative and effort to help protect salmon and other aquatic species is unprecedented and is now recognized as one of the most exciting and progressive voluntary salmon restoration efforts in the United States. Today, over a dozen NCWA members, representing over 500,000 acres of irrigable land, are in various stages of developing screens to prevent fish entrainment at their diversions. As a result, nearly 75 percent of all agricultural water use from the Sacramento River will soon flow through new, state-of-the-art fish screens. On Butte Creek, local water users have addressed—or will address—nearly every fishery impediment identified by regulatory agencies.

Since 1994, many NCWA members have initiated far-reaching efforts to screen diversions, refurbish fish ladders, construct siphons, remove dams and implement

other habitat improvement projects to enhance the environment. These projects include:

1. Browns Valley Irrigation District

Browns Valley Irrigation District (BVID) has started construction on its Yuba River Diversion Fish Screen. The completion of this project, designed to protect salmon in the Yuba River, was delayed due to inclement weather. Browns Valley has secured complete funding for its project from various sources, including Yuba County Water Agency, Yuba River PG&E Mitigation Account, Category III, CV-PIA Restoration Fund, Tracy Pumps Mitigation Fund and BVID's own funds. BVID will independently build and install the fish screen project.

2. Glenn-Colusa Irrigation District

Glenn-Colusa Irrigation District (GCID) broke ground on its Hamilton City Pumping Plant screening project in April of 1998. GCID diverts a maximum of 3,000 cubic feet per second (cfs) from the Sacramento River, with the peak demand occurring in a dry spring year at the same time as the peak out-migration of juvenile salmon. Key components of the project include a 600-foot extension to the existing fish screen and a stabilizing gradient facility in the mainstern of the Sacramento River. Total construction cost of the screen and gradient facility is estimated at $50 million. This project will minimize losses of all fish in the vicinity of the pumping plant diversion, including endangered winter-run chinook salmon, and will maximize GCID's capability to divert the full quantity of water it is entitled to utilize to meet its water supply delivery obligations.

3. M & T Chico Ranch

M & T Chico Ranch environmental restoration activities included relocating and screening the M & T Pumping Station from the mouth of Big Chico Creek to the Sacramento River, recently completed for a total cost of $5 million. This project will ensure a guaranteed water supply to over 8,000 acres of permanent wetlands and over 1,500 acres of seasonal wetlands. Additionally, it also protects habitat for migrating spring-run chinook salmon. One other important benefit of this project is M & T Ranch's agreement to provide fish flows in the amount of 40 cubic feet per second to Butte Creek, one of the most important and last remaining spawning areas for the Spring-run.

4. Maxwell Irrigation District

The Maxwell Irrigation District now operates a state-of-the-art positive barrier fish screen, one of the first of its kind installed on the Sacramento River. Completed in 1994, the new pumping plant and screen facility divert approximately 80 cfs at a completed cost of nearly $1.6 million. The screens are intended to protect all fish, but primarily steelhead and endangered winter-run chinook salmon. The State of California recently retroactively reimbursed Maxwell ID for much of their expenditures.

5. Natomas Central MWC

Preliminary engineering studies have commenced to investigate the feasibility of screening the 700 cfs Natomas Central Mutual Water Company diversion on the Sacramento River. Natomas Central has already undertaken feasibility studies and will receive CVPIA Restoration Fund monies to help cover the estimated $10-$15 million capital costs associated with this project. The screened diversion is an integral component for future integrated water resources management in the American River basin.

6. Pelger Mutual Water Company

In 1994, the Pelger Mutual Water Company completed construction of its new pumping station and positive barrier fish screen in the Sacramento River near Knight's Landing. This facility includes pumps with a discharge capacity of 60 cfs and was completed for a total cost of $350,000. While Pelger MWC financed the original project, the State of California recently reimbursed the water company for much of the original expense. Pelger MWC also recently received additional CALFED ecosystem funding to undertake an innovative evaluation of entrainment potential of unscreened small diversions.

7. Princeton-Codora-Glenn Irrigation District/Provident Irrigation District

In August 1997, the Princeton-Codora-Glenn and Provident irrigation districts began construction of an $11 million fish screen and pump consolidation project on the Sacramento River. The new 605 cfs diversion will protect endangered winter-run chinook and spring-run chinook salmon. The new facility, which eliminates three unscreened diversions, was originally scheduled to be operational by spring

1998. Delays in construction, primarily resulting from the high water conditions in the Sacramento River last year, have pushed back project completion to later this year.

8. Reclamation District 108

Reclamation District 108 began construction in 1997 of a new $10 million screen. The project, located at the district's Wilkins Slough diversion, will protect migrating endangered winter-run chinook salmon, as well as the spring-run chinook. The design for the new screen facility was chosen after several years were spent examining the performance of alternate screen technologies. The district will hold dedication ceremonies for the completed project this spring.

9. Reclamation District 1004

Reclamation District 1004 began construction of its $7 million screen last summer. Poor weather and adverse river conditions delayed the start of construction in 1997. The proposed project includes relocation of the Princeton Pumping Plant and necessary conveyance facilities to a more stable location along the Sacramento River, in addition to construction of a positive barrier fish screen. This project will eliminate significant adverse impacts to fish inhabiting the Sacramento River, including juvenile winter-run chinook salmon and steelhead.

10. Richter Brothers

The Richter Brothers diversion on the Sacramento River near Knights Landing is located along a reach of the river that hosts several species of salmon, steelhead trout and the recently listed Sacramento splittail minnow. Richter Brothers have received CALFED funding for feasibility studies and preliminary design for an improved diversion that will provide an important protective role for fish in this critical stretch of the river.

11. Tehama-Colusa Canal Authority

The water users that make up the Tehama-Colusa Canal Authority (Authority) and the U.S. Bureau of Reclamation have addressed fish passage problems at Red Bluff Diversion Dam since 1985 by modifying dam operations. The installation of rotary drum screens in 1990 and the $22 million research pumping plant in 1995 furthered these efforts. The CALFED Bay-Delta Program is also exploring plans for improved fish ladders at Red Bluff or a new screened facility on the Sacramento River. Last year, the Authority obtained $340,000 in state and Federal funding through the Ecosystem Roundtable to investigate the feasibility of installing state-of-the-art screening and pumping at Red Bluff to replace the diversion dam gravity intake system.

12. Western Canal Water District

The Central Valley Project Improvement Act and the Anadromous Fish Screen Program have identified several projects within the Butte Creek watershed that would improve fishery resource conditions, specifically spring-run chinook salmon and steelhead trout. A number of these projects at Durham-Mutual, Rancho Esquon (Adams Diversion Dam), and Gorrill Land Company (Gorrill Diversion Dam) are scheduled to be constructed during 1998 and 1999. The Western Canal Water District $11 million siphon project completed last year features construction of a siphon under Butte Creek to transport irrigation water across the creek without impacting migrating salmon, including the spring-run chinook—a fish recently designated as a threatened species by the California Fish and Game Commission. As a direct result of this work, several existing barriers to migrating fish will be removed.

13. Lower Butte Creek Project—Sutter Basin Butte Sink Water Users Association, Reclamation District 1004, RD 70, Butte Slough Irrigation Company, RD 1500, Butte Sink Waterfowl Association, Western Canal, RD 1660.

Lower Butte Creek, Butte Sink and Sutter Bypass: On the main migration corridor for Butte Creek spring-run salmon, The Nature Conservancy, California Waterfowl Association and NCWA are working with local water users and fishery agencies to determine the feasibility of reducing or eliminating fish passage and entrainment problems. The group has already completed the first phase of this project, and is moving into the second phase, which will include preliminary engineering and design that may lead to construction by the year 2000. CALFED will fund the second phase efforts up to $750,000.

14. Yuba County Water Agency

The Yuba County Water Agency is working with the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers to evaluate options to improve fish passage upstream and downstream of Daguerre Point Dam on the Yuba River. While

the existing fish ladders appear to be working properly, a study will assess whether the facilities can be further improved. Yuba County Water Agency has also received CALFED and CVP Restoration funds to study the life history and stock composition of steelhead trout on the Yuba River.

Mr. DOOLITTLE. Our next witness is Mr. Steve McCormick.

Mr. McCormick.

STATEMENT OF STEVE McCORMICK, VICE PRESIDENT, WESTERN DIVISION, THE NATURE CONSERVANCY, SAN FRANCISCO, CALIFORNIA

Mr. MCCORMICK. Thank you, Mr. Chairman.

I'm the Executive Director of the Nature Conservancy of California, and we are dedicated to preserving the best examples of the original natural landscape. We do that by working in local communities and cooperatively with private landowners. It has been our privilege to participate in shaping the ecosystem restoration program of CALFED and, I think more importantly, engaging in its implementation.

While I will focus my remarks on that aspect of our participation in CALFED, I do want to say that one of the distinguishing features of the program is that it is a single integrated plan; and it's really an elegant vision in that respect to address exceedingly complex issues involving the most important resource in California, water. But it is important to regard every one of the components that—in context and as part of a whole. So my remarks on the ecosystem restoration program should be regarded as such.

In that program, we have been delighted to see that it is truly an ecosystem program focusing on whole systems, entire watersheds, not just individual species or isolated and fragmented pieces of property. It has indeed elevated the vision of all participants and I think ennobled us to think big and systematically.

What I would really like to concentrate on are the tangible results that are being accomplished that far exceeded anyone's original expectations. I have been working on preserving landscape for 20 years. I have never seen anything approaching the success of CALFED implementation.

I'm going to give two examples, the Sacramento River and the Consumnes River, and they're really just illustrative I think of again almost unimaginable things that can be accomplished.

The Sacramento River. We, along with public agency partners and, most significantly, with local landowners, have been working to create a meander zone that would not only re-establish and reconnect some of the most fragmented and disrupted and reduced habitat in California which is uniquely California but would also provide benefits for landowners. This meander zone would allow flood waters to flow more harmlessly in areas that would not affect agriculture or residential development. It would also provide valuable recreation to an area that is experiencing increasing population growth.

I do want to stress the involvement of local landowners. Candidly, when we began in this area prior to CALFED there was a great deal of opposition to increased land acquisition; and we made a commitment to working with that local community. You'll see from the supplemental materials that we have distributed with my

testimony a sample letter from Chuck Crain, who was an outspoken opponent of CALFED and now is an enthusiastic supporter. He sees that this program is bringing in benefits in the form of real money that enables landowners willing to sell property to sell those portions of their lands that are not particularly productive, to put that money into better lands and better production, to lease back from those organizations and private institutions that are buying land agricultural properties that are still productive. And we have a very large leaseback program that is putting money back into the local community, and local farmers are being hired to do the restoration work of natural habitat.

About a month ago, I was out turkey hunting with one of the landowners that we work with. And after we were finished in the morning we went to see his walnut facility. As we were having lunch, we walked on an area that he has undertaken as a restoration project. He said, you know, I actually get more pleasure out of watching these trees grow than my walnuts know. Because I know they're going to be there long after I die and that my kids will enjoy their shade and recreation, the hunting opportunities there, and they enhance the quality and value of my farm.

And, again, that was really just one example of many that we're seeing on the Sacramento River, people really converting to the value, the multiple values derived from the ecosystem restoration program.

On the tributaries of the Sacramento River, there are local land conservancies formed by local landowners that are coming up with watershed plans. We have already heard about the tremendous success of Butte Creek—1,000 salmon run, now almost as many as 20,000. Forests are being re-established, as I mentioned, which is providing habitat not only for listed species but species that could be listed in the future.

On the Consumnes River we have also had great success with CALFED. We have engaged local farmers. In one case, as you'll see in the supplemental material, we joined with a local farmer to buy property with him which otherwise he wouldn't have been able to afford it. We stripped off the development rights but give him a permanent opportunity to farm that property. He couldn't have been more delighted.

We have preserved almost 10,000 acres of additional productive farm land that's compatible with habitat there and demonstrating compatible uses as a blend with preservation of habitat. The concepts really are turning into reality.

The final thing we have done to the Consumnes most recently is the completion of the final phase of a non-strucutural flood control operation which has opened up flood land not only for habitat but allowed otherwise dangerous flood waters to shunt harmlessly onto land that is used during summer months for agriculture but during winter months is fallowed.

Some observations and recommendations on the program. I heard that the process is slow, but it is necessarily slow. It is collaborative and inclusive. That is an inherently slow process. It is inherently a better process because people come to consensus and final decisions. The process should continue to be integrated. As I mentioned, I think its great beauty and its elegance is the fact that

it is integrated and should not be separated into its component parts. Every part is of a piece—ecosystem restoration, water storage, water quality, et cetera. Ideally, there would be a single implementation agency. We have seen some of the shortcomings of having the existing entities try to multi-manage the process, and that provides some difficulties.

And, finally, funding is critical to maintain the momentum and the real traction that has been realized just in the last couple of years and is gaining every day. So we enthusiastically support the appropriations that are requested for this year. I think this is really one of the finest hours in California history addressing an issue which the chairman said earlier which is really one of the most significant facing Congress. I hope that future Californians will look back at this as a time when Californians of all different concerns, issues and backgrounds came together to solve what seems to be an intractable issue which I think, showing through CALFED, can be done.

Thank you very much.

Mr. DOOLITTLE. Thank you.

[The prepared statement of Mr. McCormick follows:]

United States House of Representatives
Resources Committee
Water and Power Subcommittee
Central Valley Water Management Oversight Hearing
May 20, 1999

TESTIMONY OF
STEVE McCORMICK
EXECUTIVE DIRECTOR
THE NATURE CONSERVANCY OF CALIFORNIA

MAY 20, 1999

Introduction

Mr. Chairman, members of the Subcommittee, thank you for the opportunity to speak today in support of the CALFED Bay-Delta program.

My name is Steve McCormick. I am Executive Director of The Nature Conservancy of California, and have overseen our conservation projects and programs in California since 1985.

The Nature Conservancy works closely with other stakeholders and CALFED agencies on the development and implementation of the ecosystem restoration program. We have not been directly involved in development of other CALFED program areas and are therefore not prepared to discuss the status of those programs at this hearing. Barry Nelson of Save San Francisco Bay Association is here to testify on the CVPIA panel and is also available to answer any questions you might have on other CALFED policy issues.

The Promise of CALFED: A Single Blueprint for Solving Complex Problems

Those of you familiar with The Nature Conservancy—with what we do and how we do it—may be surprised to see us here today testifying on a water policy program. The reason we are here is our belief that if we are to achieve lasting and meaningful restoration of the Bay-Delta ecosystem it must be approached in a comprehensive way.

This refers not only to the need for a comprehensive ecosystem restoration program, but also solving the interrelated problems of water supply reliability, water quality, levee system integrity and flood control. We need **ONE BLUEPRINT** to work from that ensures that the solution to one of these problems doesn't make another problem worse.

The promise of CALFED is to create **a single, integrating vision or blueprint** for solving interrelated problems in the Bay-Delta system, and that is why we participate in and support the CALFED program.

Program Administration

CALFED is more than a promise—it is an active program. While planning continues, CALFED, through its Restoration Coordination Program, is implementing a host of on-the-ground actions that solve problems.

People often comment that the CALFED Restoration Coordination Program is getting off to a "slow start". We think it is worthwhile to look deeper than that sound bite into why this seems to be so.

Our view is that one reason implementation may appear to be slow is because CALFED's approach is novel and **better.** It is better in the following ways:

- **CALFED is looking at the whole ecosystem in context, at entire watersheds rather than individual species or projects**. The Nature Conservancy prides itself on planning and implementing landscape-scale ecosystem conservation and restoration projects, yet our staff has exclaimed that CALFED has forced us to expand our thinking.

- **Priority setting and project selection undergoes extensive technical and stakeholder review.** The Restoration Coordination Program has instituted a remarkably rigorous project review process involving public agency and private sector technical input, as well as representative stakeholder input through the Ecosystem Roundtable.

- **CALFED takes great care to ensure that ecosystem restoration projects also benefit or at least do not conflict with other CALFED program objectives.** For example, fish screens improve the reliability of water supply while also protecting fish.

- **Great emphasis is given to collaborative partnerships, local involvement and avoiding third party impacts.** For example, we are currently working with Glenn County, local landowners, the Army Corps of Engineers, the SB1086 advisory committee and several other interested parties to develop a flood control solution for Hamilton City that also provides ecosystem benefits. *Local involvement and coordination take time.*

- **The Restoration Coordination Program is working to coordinate its program with other ecosystem restoration projects and programs, especially CVPIA.**

One example of we are working with CALFED is the Sacramento River Conservation Area. I have provided a briefing book illustrating elements of this effort that The Nature Conservancy has been directly involved with.

CALFED in coordination with the CVPIA is taking a **comprehensive approach** to restoring habitat and natural processes in the Sacramento River watershed. CALFED and CVPIA have **funded more than 100 individual projects** on the Sacramento River and its tributaries, including:

- Watershed planning on Mill, Deer, Battle, Butte and Big Chico creeks. These plans are being developed by local watershed conservancies and other local groups

- Fish screens large and small from the $5 million Princeton fish screen to the $50,000 Richter Brothers' screen on the Sacramento River.

- Modification or removal of barriers to fish passage; for instance, five dams will be removed on Battle Creek as part of a $50 million project

- More than $15 million for land acquisition and riparian habitat restoration along the Sacramento River.

Conservation and restoration efforts along the Sacramento River are **developed collaboratively** with landowners, stakeholder organizations, local government and public agencies. Most of these efforts are coordinated through the SB1086 program, a public/private partnership working to design and implement a multiple-benefit riparian corridor along the Sacramento River. All lands acquired with CALFED funds have been from **willing sellers**.

Prior to CALFED a lot of activity was already underway on the Sacramento River, but CALFED has created the framework and provided the funding for a more comprehensive, and ultimately more successful and sustainable approach. For example, the Conservancy has been working with the U.S. Fish and Wildlife Service and California Wildlife Conservation Board to purchase land and restore riparian forest along the Sacramento River for more than 10 years. Under CALFED, these activities are now coordinated with instream habitat projects and flood control efforts.

Results

The CALFED Restoration Coordination Program is still very young, but the results are nevertheless impressive. The program is **solving problems:**

- **Listed species are making a** comeback**.** More than 20,000 adult spring run chinook salmon were counted on Butte Creek this year, up from less than 1,000 in most recent years.

- Many other species are also responding. This is important, because many native species in the CALFED solution area, while not yet listed, are candidates for listing. Therefore, restoring their habitats and populations may **prevent additional listings and abate the need for additional regulatory action.**

- **Ecosystem restoration dollars are also providing other benefits**. For example, when the currently funded CALFED fish screen projects are completed, nearly 75% of the water diverted from the Sacramento River will be screened, thus improving the reliability of those water supplies.

As I mentioned earlier, restoration activities in the Bay-Delta watershed have been going on for years, but CALFED and CVPIA have spurred four very significant improvements:

1. The **SCALE** of activities is larger and more appropriate. CALFED is pursuing restoration of watersheds, landscapes and natural processes. It is widely recognized that an ecosystem and natural process approach is more effective and sustainable in the long term.

2. The **RATE** of progress has greatly increased, in large part due to the significant and much-needed funding made available through CALFED and the CVP Restoration Fund.

3. **INTEGRATION** of activities—e.g. flood control and ecosystem restoration, or habitat and farmland protection—is encouraged or required. Agencies and organizations that used to focus on single-purpose programs are now designing projects to address multiple issues and solve interrelated problems.

4. CALFED is developing **PERFORMANCE** INDICATORS, **COMPREHENSIVE MONITORING AND ADAPTIVE MANAGEMENT** protocols. This element of the program is essential to measuring success and providing a feedback mechanism to inform future restoration actions.

An excellent example of where the CALFED program is being implemented and showing results is at the Cosumnes River Preserve, in Congressman Pombo's district. I have provided a briefing packet on this project as well.

CALFED has provided more than $13 million to The Nature Conservancy and its partners which, along with other public and private funding, has been used to pursue land acquisition and related activities that protect farmland, improve floodwater conveyance, and improve habitat conditions for fish and other species in the lower floodplain of the Cosumnes River. **The ecosystem is starting to respond with more fish, more forests, and more birds:**

- Twenty-two species of fish, eight native, were recorded in a newly inundated floodplain at Cosumnes River Preserve. Researchers last year found large numbers of **federally listed splittail** utilizing this habitat.

- Also noteworthy, young salmon sampled here are 25% larger than salmon found in the river's main channel. Larger juvenile fish have a much higher survival rate than their smaller relations.

- Waterfowl use of 1,000 acres of restored wetlands at the Cosumnes Preserve has steadily increased from about 10,000 birds in 1989 to almost 100,000 last year.

- Songbird species are utilizing riparian habitat restoration sites at the Preserve.

In addition, activities to date (funded by CALFED as well as other public and private sources) have **protected over 10,000 acres of agricultural land**—land that is now free from development pressure, but **remains in farming and on the property tax rolls.**

In response to the stepped-up rate and scale of conservation and restoration activities at the Preserve, the **Cosumnes Science Consortium** has been created in collaboration with the University of California at Davis. The Consortium will develop **region-wide monitoring strategies** aimed at evaluating the conservation benefits of habitat protection and restoration projects in the eastern Delta.

Other CALFED Program Elements

When we talk about the CALFED blueprint it's not just for the ecosystem, it's for all of the CALFED program areas. While there is not full agreement amongst all stakeholders on the details of the CALFED proposed program there is very broad-based support for progress in all of the program areas. Most everyone wants a healthy ecosystem, reliable water supply, excellent water quality and reliable levees.

The **breadth of support for moving forward with all CALFED program areas was recently demonstrated by a letter from The California Bay-Delta Water Coalition**—a diverse group of urban and agricultural water users, business, labor and environmental/conservation groups—to Secretary Babbitt and Senator Feinstein. The letter describes the coalition's support for FY2000 appropriations for CALFED,

including $60 million in ecosystem restoration funding as well as $35 million for water quality, water supply reliability and levee system integrity programs.

The beauty of CALFED is that it acknowledges the relationships **and interdependencies between ecosystem restoration and all of the other program areas**. As the CALFED program moves forward it is imperative that every effort be made to ensure that each program element is pursued in a fashion that complements and even advances the objectives of the other program elements.

As I mentioned above, there are many examples of activities undertaken as part of the ecosystem restoration program that have been designed to address multiple problems. For example, fish screens protect both fish and the reliability of water supplies. Acquisition and expansion of floodways and floodplains improves habitat, reduces flood damages and downstream flooding and can contribute to water quality and groundwater recharge.

In the same way, water supply reliability, water quality and other CALFED program elements should be developed to, at the very least, not further damage the ecosystem, and, preferably, to make it better.

Recommendations for Program Improvement

CALFED is a huge, complex, important program. As described above, the CALFED Restoration Coordination Program is doing things differently: bigger, faster, and more comprehensively. It is a problem-solving program: using ecosystem restoration dollars to solve water supply reliability, flood management, and water quality problems while repairing the ecosystem.

More staff support. The CALFED Restoration Coordination Program has a very small staff, and while they do excellent work, the sheer volume and complexity of the work can create an administrative bottleneck.

Don't slow down. Some have argued CALFED should slow implementation to allow for more careful planning. *We can't afford to slow down*. While many species are responding to ecosystem restoration, habitats are still mostly inadequate and fragmented, too many species are still precariously close to extinction, and many more are still in decline. **Rather than slow implementation, we need to make sure that the rate and quality of planning keeps pace with implementation.**

The CALFED Ecosystem Restoration Program needs a single implementation entity. Implementation of the Restoration Coordination Program has been complicated by fragmentation of implementation responsibilities. Currently, several CALFED agencies as well as CALFED program staff have responsibility for administration and oversight of various CALFED ecosystem restoration funds. It is widely acknowledged that this fragmentation is not efficient.

Keep the CALFED program areas integrated. As the CALFED program moves forward, there will be a tendency for each program area to be treated as a separate program; i.e. ecosystem restoration, water supply reliability, water quality and levee

system integrity planned and implemented independently. CALFED will face the continuous challenge of maintaining an integrated approach to planning and implementation. Even more difficult will be the challenge of getting implementing agencies to look beyond their individual mandates and jurisdictions to implement a truly integrated program. These are challenges that must be met if CALFED is to be successful.

Conclusion

CALFED's success is important not only for California, but for other regions as well. The Bay-Delta watershed is a critical part of the Pacific Flyway and home to one of the nation's most productive commercial fisheries.

While the promise of CALFED is one comprehensive blueprint for solving the complex, interrelated problems of the Bay-Delta system, the success of CALFED lies in implementation of that plan. The CALFED Restoration Coordination Program is off to an impressive start.

My organization remains committed to helping make CALFED a success. I urge you to continue to support the CALFED Bay-Delta program.

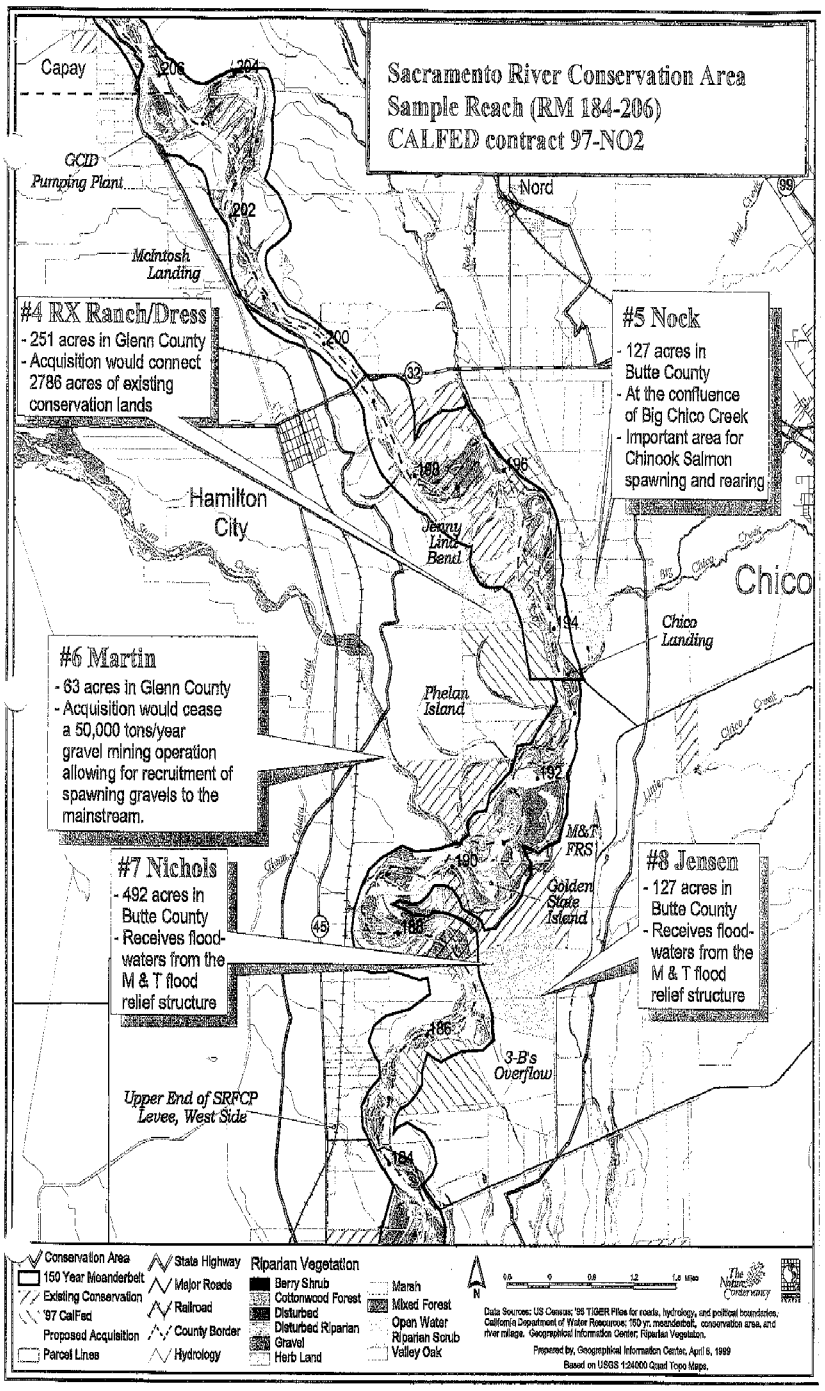
Thank you for inviting me to appear before you today. I will now be happy to answer any questions you might have.

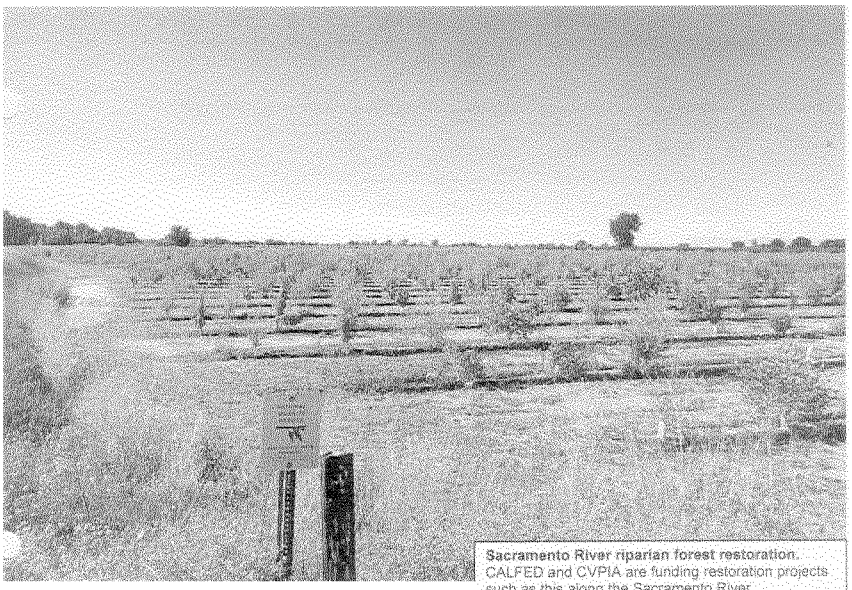
Sacramento River Conservation Area

Map
Photos
Press Clippings
Letters of Support

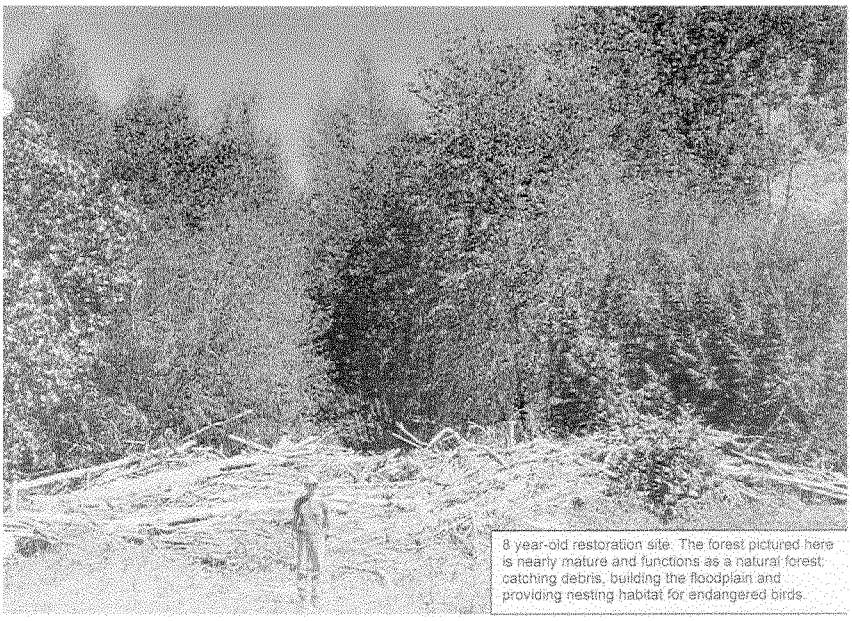
Prepared for House Resources Committee
Subcommittee on Water and Power
Central Valley Water Management
Oversight Hearing
May 20, 1999

by
The Nature Conservancy
California Regional Office

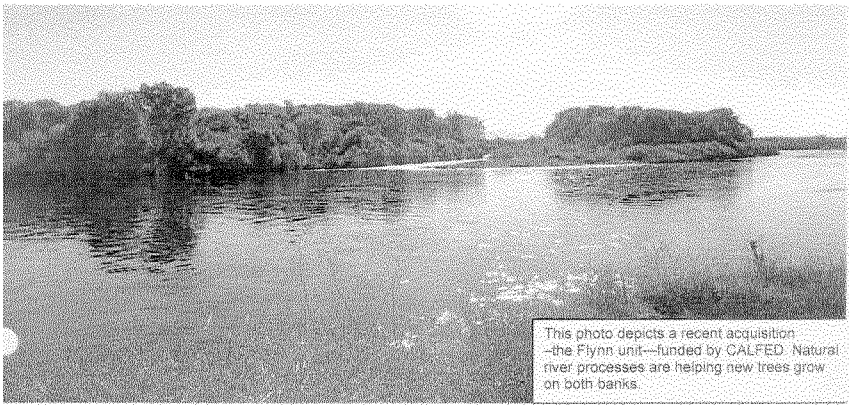

Sacramento River Conservation Area
Sample Reach (RM 184-206)
CALFED contract 97-NO2
Capay
GCID Pumping Plant
Mcintosh Landing
Nord
#4 RX Ranch/Dress
- 251 acres in Glenn County
- Acquisition would connect 2786 acres of existing conservation lands
#5 Nock
- 127 acres in Butte County
- At the confluence of Big Chico Creek
- Important area for Chinook Salmon spawning and rearing
Hamilton City
Jenny Lind Bend
Chico
Chico Landing
#6 Martin
- 63 acres in Glenn County
- Acquisition would cease a 50,000 tons/year gravel mining operation allowing for recruitment of spawning gravels to the mainstream.
Phelan Island
M&T FRS
Golden State Island
#7 Nichols
- 492 acres in Butte County
- Receives flood-waters from the M & T flood relief structure
#8 Jensen
- 127 acres in Butte County
- Receives flood-waters from the M & T flood relief structure
3-B's Overflow
Upper End of SRFCP Levee, West Side
Conservation Area
150 Year Meanderbelt
Existing Conservation
'97 CalFed Proposed Acquisition
Parcel Lines
State Highway
Major Roads
Railroad
County Border
Hydrology
Riparian Vegetation
Berry Shrub
Cottonwood Forest
Disturbed
Disturbed Riparian
Gravel
Herb Land
Marsh
Mixed Forest
Open Water
Riparian Scrub
Valley Oak
N
0.0 0 0.8 1.2 1.6 Miles
The Nature Conservancy
Data Sources: US Census; '95 TIGER Files for roads, hydrology, and political boundaries. California Department of Water Resources; 150 yr. meanderbelt, conservation area, and river milage. Geographical Information Center; Riparian Vegetation.
Prepared by, Geographical Information Center, April 6, 1999
Based on USGS 1:24000 Quad Topo Maps.



Sacramento River riparian forest restoration. CALFED and CVPIA are funding restoration projects such as this along the Sacramento River.



8 year-old restoration site. The forest pictured here is nearly mature and functions as a natural forest: catching debris, building the floodplain and providing nesting habitat for endangered birds.



This photo depicts a recent acquisition --the Flynn unit---funded by CALFED. Natural river processes are helping new trees grow on both banks.

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Planting trees to protect a river

E-R photo by Ty Barbour

They got their hands dirty, but Hamilton Elementary 3rd graders in Kristol Graves' class had some fun for a good cause Wednesday, helping plant baby trees near the Glenn County side of the Sacramento River. The plantings don't look so impressive now, but in a few years they'll be like the ones in the background, which were planted about seven years ago.

500 Hamilton students help plant 5,000 trees along river

Native saplings part of long-range plan to give river room to meander

By Patsi Brown
Staff Writer

HAMILTON CITY — Nearly 500 Hamilton Elementary students didn't go over the river and through the woods Wednesday morning. They went to the river to plant some woods.

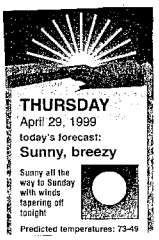
Under the guidance of the Nature Conservancy, managers of the land that is part of the Sacramento River National Wildlife Refuge, 452 students, 25 teachers and 50 community volunteers braved insistent north winds to plant 5,000 trees indigenous to the riparian habitat that flanks the Sacramento River a few miles south of here.

After more than five hours of bending, stretching, tamping and admiring, the volunteers saw the lands dotted with colored flags marking the year-old saplings of western sycamore, arroyo and sandbar willow, box elder, California rose, coyote bush, box elder and Oregon ash.

In between four year-old valley oaks that replaced a no longer productive and since uprooted prune orchard, the kids dirtied their hands in a project they will be able to revisit proudly for decades to come.

According to Dawit Zeleke, who wore his purple Nature Conservancy hat with great panache, enlisting the local community's involvement in planting the U.S. Fish and Wildlife Service-owned property is a

See TREES/12A



Trees

From 1A

new idea.

Initially, farmers planted the trees. But with 600 acres on the restoration schedule, it seemed that others could participate in the task and increase their knowledge of restoration efforts.

Zeleke said even though lots of people live near the area, only a few know of the activities that go on there.

"It's private and posted, now, but efforts are underway to establish limited public access in the future."

Seeds gathered from the site last year were taken to Chico State University Farm where, under contract, they were germinated for Wednesday's event. As indigenous species, the plants are expected to thrive in their new surroundings.

To ensure success, they are staked with bamboo, protected by cut out milk cartons and watered by a drip system set among the new-mown rows — not grass — just "a mowed weed community" also native to the area.

Zeleke said close attention will be paid for two years until the trees become established - then they are on their own and survival of the fittest will kick in.

There is no shush of running river water at the site.

Dubbed "higher terrace riparian habitat," the acreage stands as an example of the change in vegetation as it gets farther from the river.

Closest are willows that root in river silt; then come the cottonwoods. Fledgling valley oaks then become more prevalent until they are overshadowed completely as huge oaks take over.

In the next field south, seven-year-old oaks planted by Chico State University students under the same plan have become a mature forest.

Oldtimers in the area can remember when the valley flooded for miles both east and west of the Sacramento River. It at times was an inland sea. River silt transported during those floods took a variety of plant life with it that took root in new surroundings.

Forests of oaks were then not unusual in a riparian habitat.

Sam Lawson, project director for the wildlife refuge that stretches from Red Bluff to Colusa, said the Nature Conservancy manages 4,000 acres of agricultural land that is leased or leased back to local growers. It only is replanted when the orchards are no longer financially viable.

Lawson said the goal of the planting is to establish a limited meandering (of the river) to reconnect a portion of the river's original flood plain.

To prepare Hamilton students for their day, teachers presented age-appropriate curriculum during school science classes.

Third grade teacher Nelda Schofield said her 18 students spent three days learning terms like ecosystems and niches and focused on the role of trees. She said her kids loved it and received it well.

"And what's more fun, we get to come back here for other projects the Nature Conservancy does."

Seventh and eighth grade science teacher Pamela Radke spent three weeks on the unit provided by the Nature Conservancy in lesson plan form. She emphasized how little fresh water there actually is on earth and how important it is to preserve it and keep it healthy.

Still to come is a 15-foot long stream table in the Hamilton Elementary school yard that will reinforce the day's lessons on the importance of maintaining the Sacramento River watershed.

And the kids? They said it was fun and just plain cool.

"I planted at least 45 trees," one enthusiastic seventh grade boy exclaimed. Others in Mr. Flores fifth and sixth grade class laid claim to only the 10 that each of the 500 folks present were alloted to complete the 5,000 tree total.

Amy Hoss of the Nature Conservancy's Chico office summed it up.

"It's a great start with the Hamilton City kids. Every one of them now has a personal experience in the natural process of protecting the river."

April 15, 1999

Mr. Lester Snow
Executive Director
CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Dear Mr. Snow,

This is a letter of support for CALFED funding for the acquisition of riparian habitat in the Sacramento River Floodway. As a farmer in Glenn, Butte and Tehama counties, I have first hand experience with the farming of flood-prone lands along the Sacramento River and the negative economic impact of the river on some adjacent, low-lying property. I support the Nature Conservancy's efforts to acquire existing riparian habitat, as well as agricultural properties adjacent to the Sacramento River which are not economic to farm. In certain cases where properties cannot be split, it is sometimes necessary to purchase limited viable agricultural property to complete the purchase. As long as all reasonable alternatives are exhausted in the divestiture of the viable agricultural land, and the TNC is willing to continue leasing the moderately productive agricultural land until it becomes not economically viable, then I believe any negative impacts have been adequately mitigated.

I would also like to express my support for the "Agricultural Leasing Program" on the lands acquired by the Nature Conservancy. I lease approximately 900 acres of walnuts owned by the TNC. While a portion of the revenue from the agricultural contracts provide The Nature Conservancy with funds to operate their restoration program, a portion is paid to the farmer. There is no doubt that these local leases retain agricultural income within the local economy.

Being one the area's largest farmers, my wife and I own properties that border the TNC in ten different locations. To date, the TNC has been a good neighbor, and has limited our exposure to conflict with the neighboring habitat development on adjoining properties. TNC managers have been courteous and professional in dealing with any neighborly issues. One of the sites where we border the TNC, is Beehive Bend. I am looking forward to working with the TNC on the future management of the flood control systems and the Beehive Bend Site-Specific Management Plan. I am encouraged that TNC is including landowners in this process.

Thank you for your consideration.

Sincerely,

Charles R. Crain, Jr.

CRAIN ORCHARDS

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Glenn County Public Works Department

777 North Colusa Street
WILLOWS, CALIFORNIA 95988-2298
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THOMAS J. TINSLEY
Public Works Director

April13, 1999

Mr. Lester Snow, Executive Director
CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

SUBJECT: Proposal for Floodplain Acquisition and Sub-Reach/Site Specific Management
The Nature Conservancy, Applicant

Please accept this letter in support of the application of The Nature Conservancy (TNC) for Floodplain Acquisition and Sub-Reach/Site Specific Management.

This project complements the efforts of Glenn County to explore non-structural flood management alternatives in the 40 river miles within our jurisdiction.

The Glenn County Public Works and Development Services Agency is an applicant for site specific planning funds in the Wilson Landing to Chico Creek (Hamilton City) sub-reach (RM 193-206) , which is designated on TNC's figure 1, accompanying their application. Their efforts described in the "Monitoring" component of their application within this sub-reach will complement our work in identifying site-specific opportunities for providing expanded riparian restoration together with enhanced floodway capacities.

In addition, we support the site specific management planning proposed for the Beehive Bend sub-reach (RM 165-176), as an example of what can be achieved by collaborative effort between agencies and others, as well as a process that will hopefully yield non-structural solutions to flood plain management within this area of the County.

We are pleased to be able to participate in this effort and are confident that it will lead to some projects that will address the joint goals of habitat restoration and flood management within the Glenn County area. Please feel free to contact this office if you have any questions.

Very truly yours,

Thomas J. Tinsley, P.E.
Director
Glenn County Public Works and Development Services Agency

Cosumnes River Preserve

Map
Photos
Press Clippings
Letters of Support

Prepared for House Resources Committee
Subcommittee on Water and Power
Central Valley Water Management
Oversight Hearing
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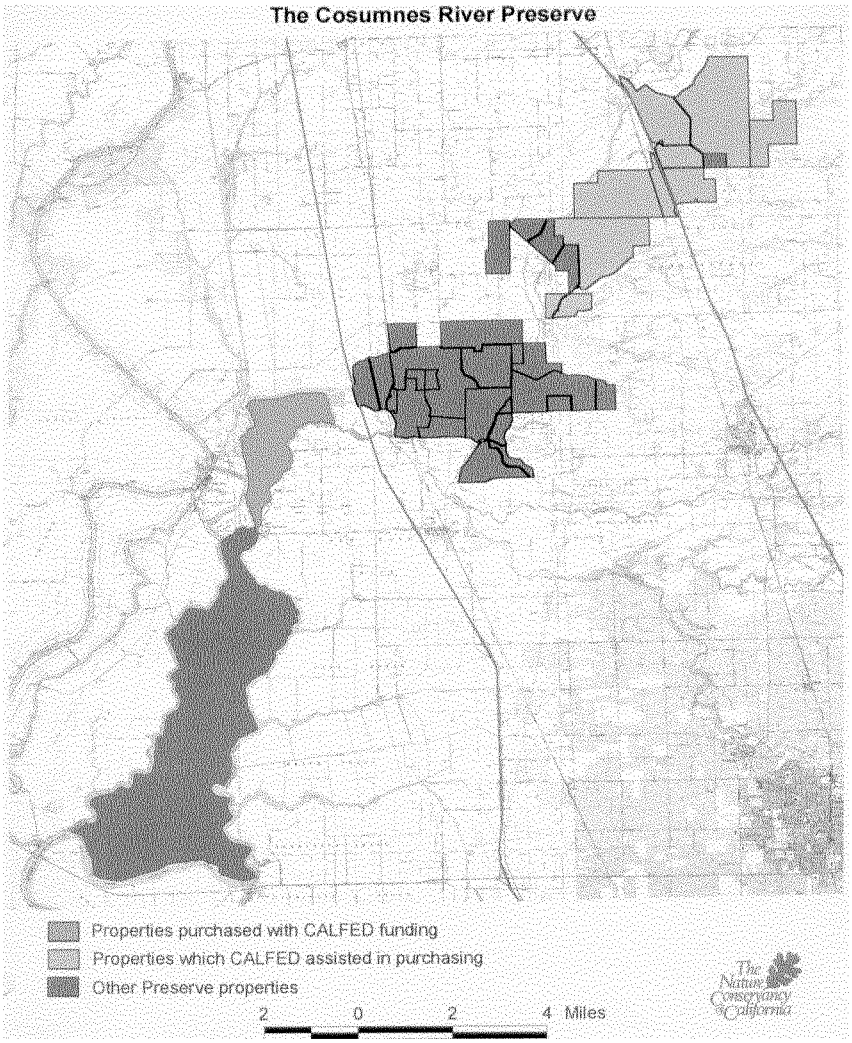
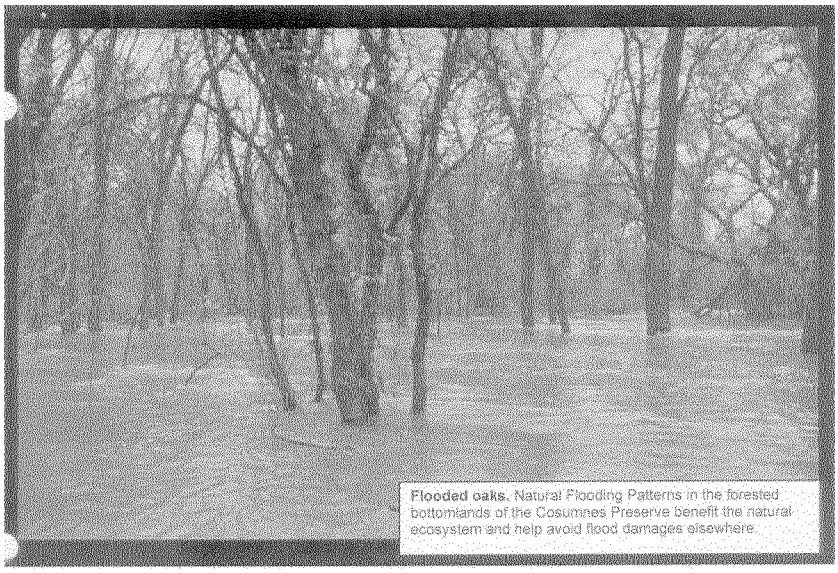
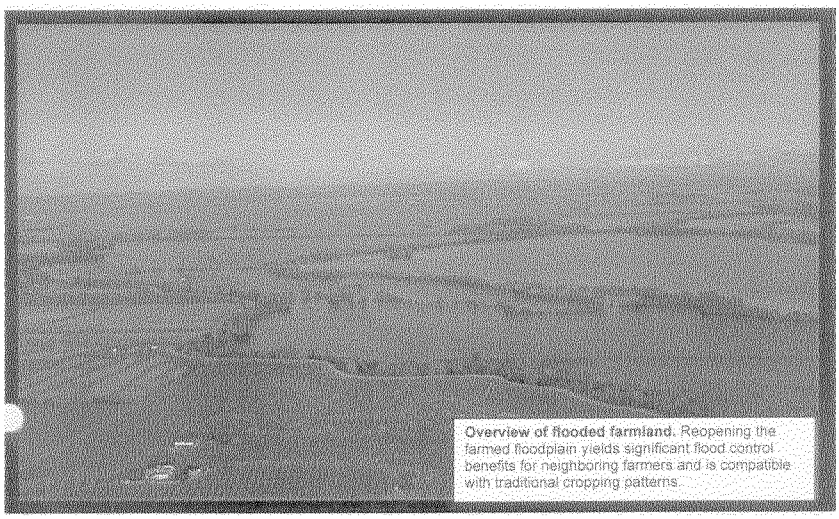
by
The Nature Conservancy
California Regional Office


The Cosumnes River Preserve
Properties purchased with CALFED funding
Properties which CALFED assisted in purchasing
Other Preserve properties
2 0 2 4 Miles
The Nature Conservancy of California

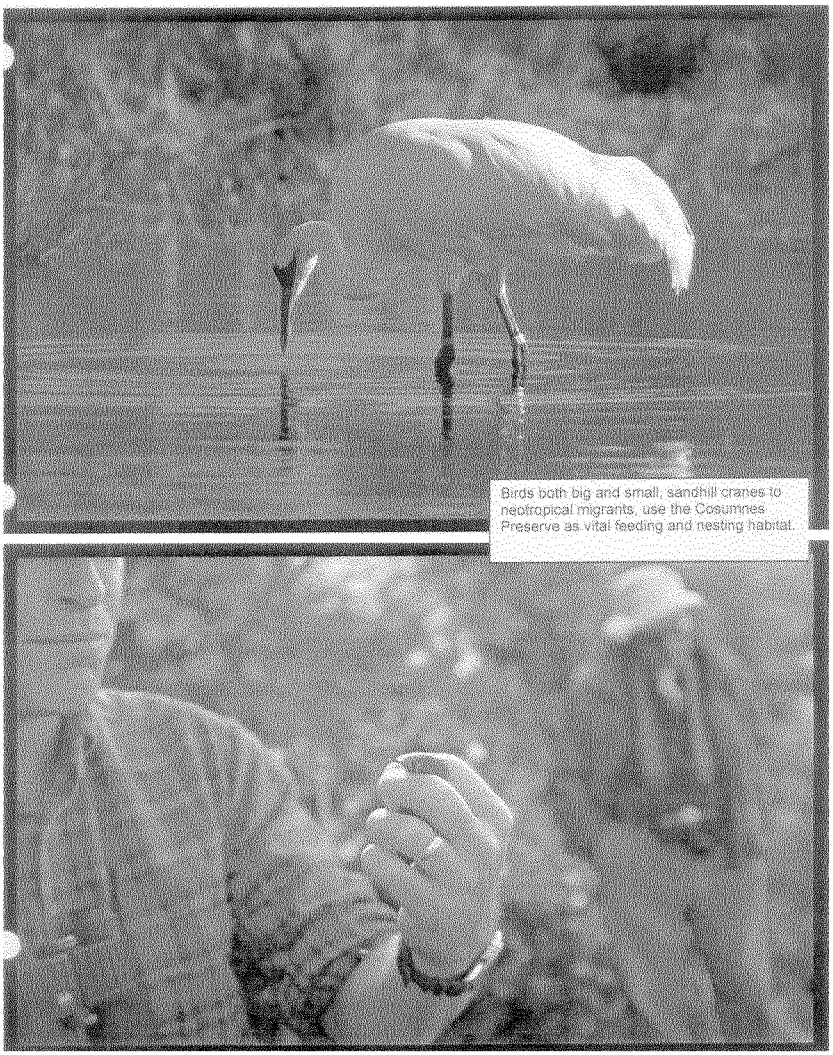


Flooded oaks. Natural Flooding Patterns in the forested bottomlands of the Cosumnes Preserve benefit the natural ecosystem and help avoid flood damages elsewhere.



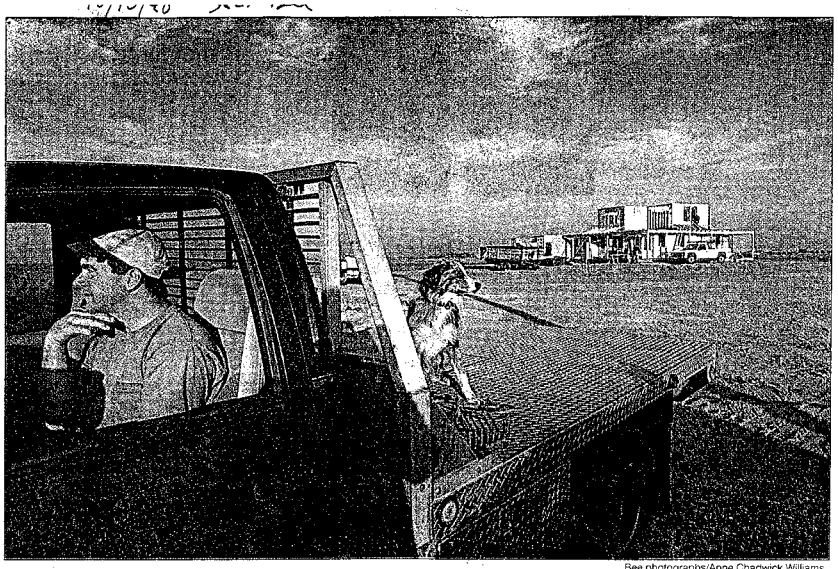
Overview of flooded farmland. Reopening the farmed floodplain yields significant flood control benefits for neighboring farmers and is compatible with traditional cropping patterns.

The Cosumnes Preserve is an outdoor laboratory where school kids learn about farming and wildlife.



Birds both big and small, sandhill cranes to neotropical migrants, use the Cosumnes Preserve as vital feeding and nesting habitat.

Organic rice is successfully grown on the Cosumnes Preserve, providing food for migratory birds and humans alike.



Bee photographs/Anne Chadwick Williams

Mike Johnson, shown with his dog Boomer, and the Nature Conservancy have formed a buffer zone of bird-friendly farmland. Below, sandhill cranes fly over the Johnson property near the Cosumnes River Preserve.

Farm family, nature group join forces

By Bill Lindelof
Bee Staff Writer

Sacramento Bee
10/10/98

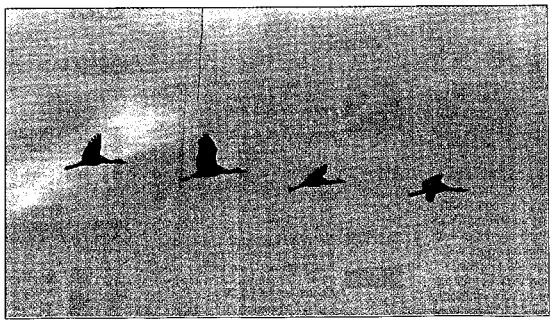
Conservationists and farmers have not always had a good relationship. Arguments over fairy shrimp in vernal pools and kangaroo rats in cotton fields have made them suspicious of each other's motives.

But in south Sacramento County, a farm family and environmentalists have used a land acquisition technique called an "agricultural-conservation easement" that preserves agriculture while at the same time protecting wildlife.

The opportunity to use the easement came about when land became available on Twin Cities Road. Farmer Mike Johnson enlisted the aid of the Nature Conservancy, one of the major owners of the nearby, 14,000-acre Cosumnes River Preserve.

"I had always wanted the property," said Johnson. "But the owner wanted too much money for it, so we went together with the Nature Conservancy. That made it feasible for me to buy the land."

Mike and Laura Johnson, who have two children, wanted to ranch and farm the land. The Nature Conservancy wanted a buffer zone of bird-friendly farmland on the northern side of the preserve, which hosts 1,200 tundra swans and thousands of sandhill cranes every winter.



The Johnson family has long farmed along Twin Cities Road near the Cosumnes River. Mike Johnson's grandfather worked the land as far back as 1929.

Now the next generation of Johnsons are building a new house on land that the Nature Conservancy helped them buy. All the Johnsons have to do is raise cows or plant crops on the land – just what they want to do. Development would be prohibited.

"We ended up negotiating with him an easement that said he could not plant

Please see EASEMENT, page B4

Easement: Other farmers have made inquiries

Continued from page B1

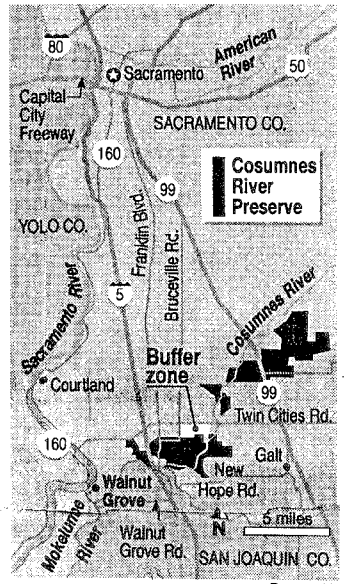
perennial plants – no grapes or orchards," said Mike Eaton, director of the Nature Conservancy's Cosumnes River project, "and he can only build one house on the land."

That, said Eaton, "accomplished everything we needed and left us without a management burden. And it gave him everything he wanted because he had no intention of planting grapes or orchards."

Orchards and grapes takes away the habitat for birds such as tundra swans, and sandhill cranes, which prefer open land, said Eaton.

Johnson and the Nature Conservancy were actually involved in two separate deals: Four years ago, about 370 acres at Bruceville and Twin Cities roads were purchased for about $2,900 an acre, said preserve officials. Later, 257 adjacent acres were purchased for about $2,000 an acre.

Johnson, 33, grew up just down the road from the purchased properties on a 575-acre family homestead. He estimated that prices have gone up 50 percent in 10 years, boosted by wine grape growers who are planting vineyards at a rapid pace on former rangeland.



Bee graphic

Also, hints of development caused by the steady march of housing, just north on Interstate 5, have inflated property values.

The family is building their home on the first property they purchased with the Nature Conservancy's help – land where sandhill cranes share irrigated pastureland with 250 cows. The second parcel supports tomatoes and other crops.

"We needed to get a little bigger," said Johnson, who works the family farm with his father. "It seems that it takes more land. You don't make as much per acre as you used to."

A handful of other farmers have inquired about setting up an easement arrangement. Chris Unkel, who handles easements for the conservancy, said the group does not want to take farmland out of production.

"There is acreage along the Cosumnes River that is best suited for habitat but ill-suited for crops because of the constant threat of flood," said Unkel. "Those are properties we would buy outright. On other land . . . it makes more sense to use the easement to achieve our objectives."

Easements are "just starting to take off in California," said Erik Vink, state policy director for American Farmland Trust.

"We will probably end up doing more conservation easements than outright buys in the future," said Eaton of the Nature Conservancy. "It's a more cost-effective way for us to go."

Johnson said farmers and conservationists can work together if both parties are reasonable.

"They don't have blinders on," Johnson said. "They want the wildlife but they understand you have to make a living."

Bee photographs/Dick Schmidt

Horses graze along a field last week that lies ready for planting at the M&T Staten Ranch, whose management of Staten Island includes the accommodation of wildlife, making it a good fit with the Cosumnes River Preserve.

Sacramento Bee 4/7/99

A Delta farm that's wildlife friendly

9,200-acre ranch joins Cosumnes preserve

By Walt Wiley
Bee Staff Writer

For as long as Jim Shanks can remember — even before he and wife Sally managed it — wildlife has been welcome on the 9,200-acre Staten Island farm they run.

Sally Shanks' dusty four-wheel-drive rig bounced to a halt atop the narrow Staten Island levee. To her left was nearly 10,000 acres of earth, flat as a pool table and ridged up in furrows ready to be planted in corn, wheat and tomatoes. To the right was the north fork of the Mokelumne River.

"See, here's what you can do," she said with a wave of her hand, pointing to a small lagoon that had been created in the river with a line of alders and tules cutting across a sharp bend in the levee.

"It doesn't slow flood flows one bit, but with normal flows you get tidal action that promotes all sorts of stream-side life you don't get when it's just bare rock," she said. "And now we'll be able to do so much more of this."

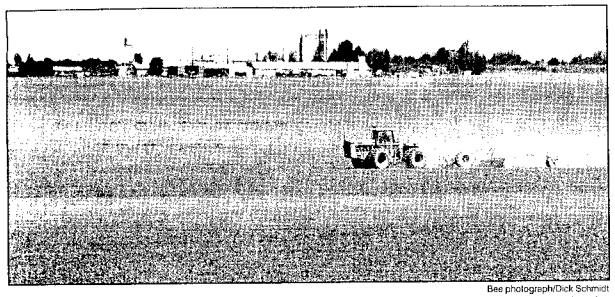
Shanks and her husband, Jim, manage the M&T Staten Ranch, 9,200 acres all on one island in the Delta southeast of Walnut Grove. It's a full-blown, no-nonsense, money-making agribusiness enterprise that just happens to be very friendly to wildlife.

And last week, the ranch became part of the Cosumnes River Preserve, adding its private, for-profit acreage to the mix of federal, state, local and private non-profit land, almost doubling its size to a new total of 21,800 acres.

For as long as the Shankses can remember, long before they took over, those parts of the vast ranch that have not been needed for growing crops have been managed for wildlife habitat.

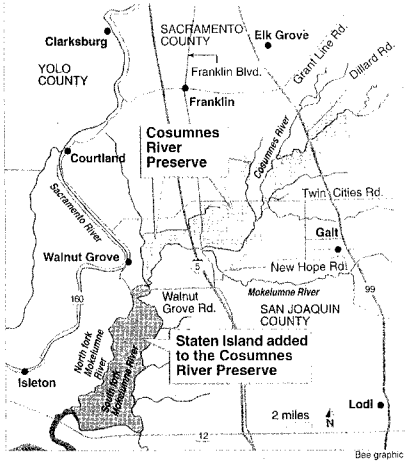
And come fall, when the crops are in,

Please see FARM, page B4



Bee photograph/Dick Schmidt

M&T Staten Ranch, 9,200 acres on an island between the north and south forks of the Mokelumne River, is in business to make money, but its managers say there is still room for wildlife.



Bee graphic

Farm: Bureau sees rising trend in ag-conservation partnerships

Continued from page B1

essentially the whole place gets flooded to provide habitat for migratory waterfowl, staying flooded until the birds leave in the spring, just in time for planting.

"So it just seemed like a perfect fit for us to join up with the preserve," Shanks said. "They're doing the same thing we are, even farming on the land where it's appropriate.

"And talk about waterfowl: Those birds fly south at 10,000 feet until they're right over Staten Island, then they just drop. We'll have 100,000 birds – 18,000 sandhill cranes."

The ranch was founded when the land was leveed and drained in the 19th century. M&T Corp. of San Francisco acquired it in the 1930s, and since 1984 M&T has been part of the investment portfolio of the Washington state public employees' pension fund.

"And we're a solid moneymaker for them, year after year," Shanks said.

Profitability is essential, certainly, but M&T's choice to join the preserve reflects a trend of modern farmers, said John Gamper, the California Farm Bureau's land-use and taxation director.

"More and more, they're looking at higher values than just the speculative value of land. It's a matter of wanting to stay in farming, of having farming be a valuable and desirable use of the land," he said.

Staten Island is in the heart of the area buffered by the Delta Protection Commission from urban development, but it still faced pressure from other forces that could have ended farming there, said Margit Aramburu, commission executive director.

"There was one proposal where Sacramento County said it could solve all its flood control problems by making Staten Island a 'floodway,'" or route of the river before it was controlled by levees, Aramburu said.

"That plan died when San Joaquin County didn't think much of it, but there's always somebody around to come up with things like that, and it couldn't hurt to have friends in the right place."

Shanks said a gas pipeline company just a few months ago was preparing to draw a line across the island and install a new pipeline without even asking where it might be least inconvenient.

"Those utilities can just thumb their nose at an ordinary farmer, do as they please," she said. "But when these guys learned we were hooking up with the preserve, all these agencies, Fish and Game, BLM, Department of Water Resources, they stepped back and got a little more polite."

In addition to the strength-in-numbers support from its partners in the preserve, she said, the ranch could get financial help for some of its non-farming efforts, such as one program being explored that would pay the ranch for its lost profits on land dedicated to permanent wetlands.

As for the preserve overall, it is strengthened by being nearly doubled in size with land along its watershed, in this case directly downstream from the preserve's core holdings, said Rick Cooper, a federal Bureau of Land Management range conservationist who serves as preserve manager.

The preserve was created in 1984 with some oak woodlands and wetlands acquired by the private Nature Conservancy. Three years later Ducks Unlimited, also a private group, joined in and began adding acreage and supplying a full-time manager.

Now there are 10 employees and the land of nine owners: M&T, BLM, Ducks Unlimited, the Nature Conservancy, the state Wildlife Conservation Board, Sacramento County Parks and Recreation, the state Department of Water Resources, the state Department of Fish and Game and the California Lands Commission.

"When you look at the whole watershed of the Cosumnes River from the headwaters on Forest Service land up in the Sierra all the way to the Delta, Staten Island is a key piece," Cooper said.

"It's not important who owns it. We've proven that. What's important is the habitat, and this is real habitat."

100

BOARD OF SUPERVISORS
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DON NOTTOLI
SUPERVISOR, FIFTH DISTRICT
(916) 874-5468
FAX (916) 874-7593

April 15, 1999

Mr. Lester Snow, Director
CALFED Bay-Delta Program
1416 Ninth Street, 11th Floor
Sacramento, CA 95814

Dear Lester:

I am pleased to provide this letter of support for the grant proposals to be submitted by The Nature Conservancy. The Cosumnes River Preserve and the Staten Island Consortium, in partnership with The Nature Conservancy are seeking funding from CALFED to accomplish several projects involving flood control and flood plain management improvements in the area of the lower Cosumnes and Mokelumne Rivers. It is my understanding these projects and initiatives are designed to improve flood security for existing agricultural lands and habitat areas and that these projects would involve a number of public agencies, private organizations and property owners.

I am appreciative of the Cosumnes River Preserve's approach which is directed toward maintaining a substantial amount of land in private ownership, toward improving flood protection for agricultural operations in the two river corridors and demonstrating that farming and wildlife habitat can be compatible objectives.

Thank you in advance for your consideration of these proposals.

Sincerely,

Don Nottoli

Don Nottoli, Supervisor
Fifth District

DN:sv

U.S. WATER NEWS

WATER SUPPLY

Farmers, conservationists forge new alliance to restore Sacramento River.
New approach to land management brings economic benefits to farmers.

RED BLUFF, Calif.—Bert Bundy has farmed land along this stretch of the Sacramento River all his life.

Formerly the executive director of a local landowners association, he may seem an unlikely candidate to lead conservation efforts that depend on retiring agricultural land to recreate river meanders. Those efforts, in turn, will help reconnect the natural flood plain of the 200-mile stretch of the Sacramento River between the Bay-Delta and Shasta Dam.

But that is what he is doing. Bundy has just been hired—through a CALIFED grant—as a coordinator for the Sacramento River restoration project, an effort he has been involved in as a landowner for the past 12 years.

"I'm very sold on the program," he says of the 12-year public/private partnership that has recently gained the support of the CALFED program, which includes restoration of rivers and watersheds in the Central Valley.

Twelve years ago, in 1987, Bundy was among 25 local stakeholders who formed the core of what is now called the S.B. 1086 Group. In that year Senate Bill 1086 was passed to facilitate a consensus-based approach to restoration of the upper Sacramento fisheries, which is habitat for 4 races of chinook salmon.

As a result of that process, he said, some 20 recommendations for improving the operation of the river to benefit fish runs were implemented, but the riparian restoration called for in the plan languished until 1993, when it was revived by Doug Wheeler, who was then California Secretary of Resources.

Out of this process came the goal of restoring "limited meanders" on this stretch of the Sacramento, wherever practically feasible.

"It's taken some time for all these stakeholders to agree to the limited meander concept, but people now realize its a win/win," said Sam Lawson, who is Sacramento River project director for The Nature Conservancy, the private non-profit organization that purchased land along the Sacramento 10 years ago as part of its on-going program to reestablish wetlands in the Central Valley. "We've worked hard to find practical solutions that benefit everyone."

The Nature Conservancy became part of the process when it donated land it purchased here to the U.S. Fish and Wildlife Service for inclusion in a wildlife refuge on the river. The non-profit organization has long been a leader in the public/private collaboration to reconnect the river to its flood plain, a concept recently endorsed by the CALFED program in its goal of sustainable resource management.

Restoring meanders to selective stretches of the Sacramento will reconnect the flood plain, said Lawson, thus creating a healthier ecosystem and improving wildlife habitat. But the benefits don't stop there, he added. Meanders also provide flood control by both absorbing the river's energy and slowing down rushing water. And they offer superior in-stream storage in times of high water.

This "geologic" approach to flood control, he said, is far superior to man-made structures like levees, because these natural features improve with time, due to the cumulative effect of natural processes, whereas levees must be continuously maintained, repaired, and replaced.

The restoration requires the sacrifice of some farmland (mostly orchard acreage), but Lawson explained that the land taken out of production is "marginal land" that is no longer productive.

Because the restored meanders and reconnected flood plain are limited to a corridor less than a mile wide—rather than the 10-15 mile width of the original flood plain—farmers are assured that the loss of farmland will be minimal. In addition, the orchards selected to be replanted as riparian habitat are already close to the end of their productive farming life.

The Nature Conservancy purchases available land from the farmers, giving them the capital to reinvest in new orchard property, then leases the land it bought back to the same farmer, who continues to farm the best land of the acreage he previously owned. The Conservancy also pays the farmer to replant the acreage now designated as riparian habitat.

"It's a plan that makes sense—economic sense—for everyone," said Lawson. "It would actually cost the farmers more to keep the levee system in place, or to deal with flood damage to these marginal lands."

Bundy agrees.

"Much of that land right next to the river shouldn't have been planted in the first place," he said, adding that ready access to river water, as well as the lure of fertile

bottom-land made sense in earlier times. But the continuing damages to natural resources and the ecosystem are clearly not worth the cost of such outdated farming practices, he said.

"We have yet to convince some landowners of this," he added. "But after 12 years of working together, Sacramento farmers and conservationists are beginning to understand we have more in common than we once thought."

Both farmers and conservationists view urban and suburban sprawl as a common threat that can only be contained by unconventional alliances and practical mechanisms like those worked out in this public/private partnership, he said.

Of the 20,000 acres of land authorized for a refuge on the Sacramento River, 10,000 acres have already been acquired, and of that, 1700 acres of marginal farmland have been restored to riparian habitat.

"We have just closed up a block between two creeks that will allow us to abandon about 3000 feet of levee," said Lawson. "This year alone we will restore another 850 acres of riparian habitat."

Lawson points out that the total cost of reclaiming the ecosystem on this stretch of the Sacramento is approximately $100 million, including both land acquisition and restoration—not a high price to pay considering the Sacramento is the major source of water for a large percentage of the state's population, as well as being the home to a number of endangered species, including winter run chinook, which are found no where else on Earth.

"When you take all that into consideration," he said. "It's a bargain—and an opportunity we can't afford to lose."

Mr. DOOLITTLE. The final witness in this panel is Dr. Dennis King. Dr. King.

STATEMENT OF DENNIS KING, SENIOR RESEARCH SCIENTIST, UNIVERSITY OF MARYLAND, CENTER FOR ENVIRONMENTAL SCIENCES, SOLOMONS ISLAND, MARYLAND

Mr. KING. Thank you. My name is Dennis King. I'm senior research scientist at the University of Maryland Center for Environmental Science, and direct that Center's Natural Capital Research Group. I am also managing owner of a consulting firm, King & Associates, where we specialize in natural resource accounting and environmental assessment and mitigation trade scoring.

A great deal of my research, consulting and teaching involves the economic aspects of environmental restoration. I'm currently working on projects related to wetland mitigation, riparian buffer construction, prioritizing investments in noxious weed eradication and fishery habitat problems. I'm also writing a book for Columbia University Press entitled, Economics of Ecological Restoration.

I currently live in Maryland, but until 10 years ago I was a California resident. I also have family out there, so I have some personal interest in the issue of California ecosysytem restoration.

I'm here simply to encourage the use of clearly defined investment indicators to prioritize and manage CALFED ecological restoration investments and to recommend perhaps that CALFED be managed as an exercise in what Wall Street investors or businessmen would call integrated risk management.

My written testimony has some details on the differences between investment indicators versus performance indicators. The basic difference is that investment indicators are leading indicators of success. The analogy on Wall Street would be the criteria used to pick stocks which include risks and expected financial returns, as opposed to the performance criteria, which would pretty clearly be defined as the rate of return in your investment.

The concept of integrated risk management is described in more detail in my written testimony. It's really just a practical way to

implement adaptive ecosystem management. It involves managing individual investments in ecosystem restoration as part of a portfolio, managing those risks that can be managed, carefully monitoring indicators of those risks that are uncontrollable and, mostly importantly and most difficult, responding quickly when risk factors change. This is particularly difficult in the case of ecosystem restoration which involves applications of technologies and science that are relatively new; and subject to lots of vagaries related to floods, droughts, fire, invasive species, water diversion and so on.

I have arrived at this conclusion that using investment criteria is more important than using performance criteria based on three general experiences dealing with the failure of ecosystem restoration which I think were a result of an inability of restoration managers to lay out clear decision-making criteria.

The first is related to Prince William Sound and the aftermath of the Exxon Valdez spill. There were billions of dollars spent on restoration. It provided good public relations for Exxon and for some regulators. It transferred a lot of wealth to Alaska. It satisfied a public need to punish Exxon. It did a lot of other things. However, in terms of a public investment and restoration a lot of it was a waste and in some cases it did more harm than good.

My second experience included 8 years on the Scientific Committee of the Pacific Fisheries Management Council. These regional fishery councils are composed of scientists and regional stakeholders. Over the last 20 years the scientists have studied fish, and the stakeholders have liquidated them. In that case, too, we in the process didn't provide good investment criteria; and we basically allowed an industry to liquidate a publicly owned asset and called it economic production, even though the scientists and stakeholders were in a regional organization and approved the decision. So that sort of made me think again that we really need more public investment criteria even though I completely understand the need for stakeholder consensus and limits of benefit cost analysis and so on.

The third experience is one I'm involved in right now, which is scoring wetland mitigation trades and looking at the cost and success of wetland mitigation projects. Like most other environmental economists, I have been pushing for market-based environmental solutions my entire career. But now what we find is that when you're dealing with environmental goods where the units of exchange and debit/credit criteria are vague, the risks associated with these environmental trades are enormous. So much so, that even scientists and people who have argued in this context that all wetlands are unique and special and wanted ad hoc negotiating criteria are beginning to beg for clear debit/credit criteria. There is so much money and political risk involved that in ad hoc negotiations scientists and resource managers tend to lose.

Based on this experience, I have three recommendations for CALFED. First is that it be viewed as an exercise in integrated risk management. Again, that means considering the success of the overall program, not just individual projects, and providing incentives for project managers to take on the same consideration.

To consider the sufficient conditions, not just necessary conditions. It's very common for managers of restoration projects to focus on creating the necessary condition that they are responsible for

without monitoring whether the other necessary conditions are evolving. They should be encouraged to blow the whistle on their own projects if the likelihood to success gets so low that the money would be better diverted to somewhere else.

It means rewarding people who manage those risks and rewarding those people for monitoring risks that cannot be managed and, most importantly, responding to those things. We found in our review of restoration projects it's very difficult.

Second, CALFED should use investment indicators to select and manage projects. The stakeholder role, I know they're enormously important, need to be managed to put preferences on outcomes, not on investments. They're too complicated for stakeholders to select.

Scientists can help define opportunities and constraints and the need for projects to generate new information. But, again, the management of these complex projects is too complicated for scientists and involves more decision-making under uncertainty than they prefer—Third, and perhaps most importantly, is these indicators provide some cover for the ecosystem restoration manager to manage for outcomes and to minimize waste. What I'm finding in wetland mitigation is that if there is a lot of squirm room in what success criteria are used, the people trying to manage these projects have very little justification or particular technical cover for stopping wasteful projects.

And so I think, whether you call it adaptive ecosystem management or integrated risk management, investment indicators are needed to provide restoration managers with the ability to deal with two very substantial challenges. One is the fact that ecosystem restoration investments are enormously risky and involve unavoidable risks that science is not going to be able to reduce very much. Two, the fact that they result in benefits that are very difficult to measure in conventional dollar terms and may take many years to appear. We cannot demand the impossible. Even if we can't guarantee that an investment will suceed or has succeeded, we can certainly guarantee that we're using all the best criteria for allocating our investments and management risks.

There are eleven exhibits attached to my written testimony which help clarify and expand some of these points, and I welcome any questions. [See attached Exhibits.]

Mr. DOOLITTLE. Thank you.

[The prepared statement of Mr. King follows:]

Testimony of

Dennis M. King

Before the

U.S. HOUSE OF REPRESENTATIVES
Committee on Resources, Subcommittee on Water and Power
May 20, 1999

Introduction

My name is Dennis King. I am a Senior Research Scientist at the University of Maryland, Center for Environmental Science, where my research focuses on the economic aspects of ecosystem restoration. I am also managing owner of King and Associates, Inc., an environmental economic consulting firm specializing in environmental economics, natural resource accounting, and the assessment of environmental investment and mitigation trades.

My background includes a Ph.D. and an M.S. degree in environmental economics and over 25 years of research, consulting, and teaching in the field. I have written over eighty articles, technical reports, and book chapters dealing with ecosystem restoration and management, and am currently writing a book for Columbia University Press entitled The Economics of Ecological Restoration.

My university research is supported primarily through contracts and grants from federal and state resource agencies. My private consulting clients include resource agencies, business interests, financial institutions, and non-profit organizations. I have no financial or business interests in any ecosystem restoration companies or technologies.

Focus

My testimony today focuses on methods of assessing and comparing ecosystem restoration projects as public investments. My comments will emphasize two different types of indicators that can be used to prioritize and manage ecosystem restoration. They include investment indicators or "leading indicators" of whether a restoration project is likely to succeed, and performance or "scorekeeping" indicators that measure whether a restoration project has succeeded. These are very different types of indicators and both are important for managing large portfolios of ecosystem restoration projects. The difference between them is comparable to the difference between the criteria Wall Street investment fund managers use to select portfolios of stocks, i.e., indicators of risk and profit potential, and the obvious measure of how their portfolios performed, i.e., it's financial rate of return. In an ecosystem restoration context the indicators that are useful for selecting investments with the greatest potential for success are related to site and landscape indices and the potential of other related projects; after-the-fact performance indices reflect actual changes in ecosystem functions, services, and values. As a practical matter, performance feedback in ecosystem restoration will not often be available fast enough to provide a sound basis for managing investment spending.

Attempts at ecosystem valuation continue, but it may never be possible to compare the benefits of CALFED investments in terms of conventional dollar-based values. It may not even be realistic to expect that it will be possible to distinguish between the benefits

that result from different CALFED investments or to assume they will be measurable in the near-term. This is why investment indicators are especially important when managing portfolios of ecosystem restoration projects. Monitoring leading indicators of expected performance and risks, and responding to them in a timely way is often the only way to manage long-term ecological restoration initiatives.

My purpose in providing testimony today is to emphasize that public spending on ecosystem restoration should not be viewed simply as a stakeholder-driven initiative, or as a method to fund landscape-level scientific experiments. These are important and complex public investments with very high opportunity costs in terms of forgone opportunities to invest in the environment and solve other problems. Selecting and managing these investments requires special skills and special tools that most regional stakeholders and most scientists do not have. To provide fiscal accountability those overseeing public spending on CALFED need risk-based investment and expected performance indices as much as they need cost and budget information.

The main point of my testimony is that ecosystem restoration is inherently risky and that large-scale restoration programs, such as CALFED, should be considered as exercises in what Wall Street investment managers refer to as "integrated risk management." Risk can be defined generally as the volatility of potential outcomes. In the case of large-scale environmental restoration, the volatility of environmental outcomes stems from some predictable and unpredictable sources. Problems with project planning, design, and implementation, problems with other related restoration projects, and other factors, such as drought, flood, storms, fire, disease, water diversions, and invasive species are all sources of investment risk that need to be controlled or monitored.

Applying relatively strict risk and performance criteria to public investments, such as CALFED, is important for three reasons. First, it provides a sound basis for managing investment spending. Assessing project costs in the absence of information about expected outcomes and risks provides a very weak basis for managing ecosystem restoration initiatives or preventing waste. Second, it provides a basis for restoration managers to be explicit about the tradeoffs involved in selecting investments to achieve environmental goals i.e., salmon recovery, and to achieve other admittedly important social goals, i.e., consensus or an equitable distribution of restoration spending or jobs. Third, it provides restoration managers with the technical justification and political cover they need to prevent wasteful spending on high-risk or low-payoff projects that are popular with special interest groups or political leaders.

The expected payoffs from public spending on restoration should be subjected to the same critical investment criteria that public agencies apply to private environmental restoration spending. For example, federal agencies use expected changes in habitat suitability indices, or functional capacity indicators, or "hydrogeomorphic" conditions to assess private wetland mitigation projects and to debit and credit wetland mitigation trades. These are good examples of the kinds of indicators that managers of publicly funded restoration projects should use to assess and compare investment alternatives.

Conclusions

The integrated management of restoration investments requires controlling those risks that can be controlled, and having a plan for monitoring and responding quickly to changes in those risks that are not controllable. This is adaptive ecosystem management in

action where adapting means cutting losses by making mid-course corrections when conditions change. This is difficult and costly, and making mid-course changes in investment strategies is often extremelyunpopular with government agencies, contractors, and interest groups that become vested more in projects than results. It helps to provide incentives for individual project managers to be committed to the success of the overall effort, not the survival of their particular projects. It helps to have contracting and budgeting protocols that allow spending flexibility. It also helps to have credible and investment and portfolio management criteria that deal explicitly with uncertainty.

In summary, CALFED should be viewed as a continuous investment management process rather than a process for selecting and implementing a set of agreed-upon projects. Stakeholder groups and scientists will inevitably have preferences for certain projects and spending priorities. Taxpayers, more than most other stakeholders, have a vested interest in achieving the greatest results at the lowest cost. Over time CALFED investments or prospective CALFED investments will inevitably displace other private and public environmental investments or make them difficult or impossible to implement. This is called "supplanting" in the context of wetland mitigation and is real cost of large-scale publicly funded restoration initiatives. Besides developing investment and performance indicators related to the outcomes of CALFED investments, therefore, it might be useful for CALFED managers to develop indicators to monitor and control risks associated with unintended environmental consequences and lost restoration options.

From a public investment perspective, the important roles of stakeholders, scientists, and restoration managers breaks down as follows: Stakeholders should assign preferences to restoration outcomes, i.e., fish habitat or rare bird habitat, but not influence the portfolio of restoration investments selected to achieve their preferred outcomes i.e., spending on water quality improvements, riparian buffer construction, or wetland restoration. Scientists should identify restoration opportunities and constraints i.e., life requisites and sufficient conditions for species survival, and identify information needs, but should not decide what mix of research or restoration investments are in the public interest. The role of restoration managers should be to select and manage investments to achieve results, not to make decisions that meet stakeholder preferences for particular spending patterns or to support scientific research that has no specific link with restoration outcomes.

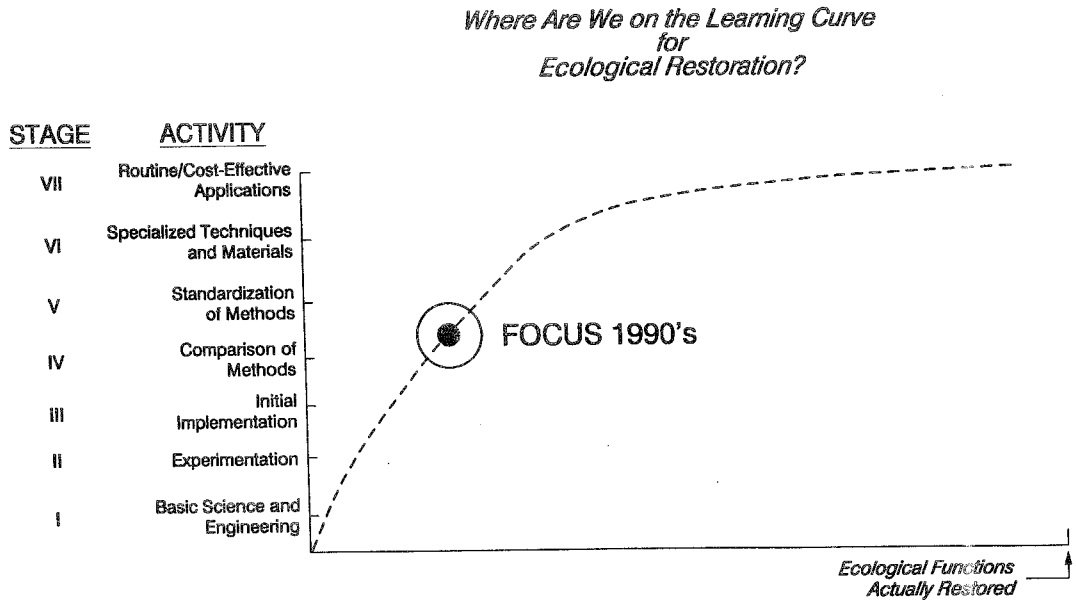
Whether it is called adaptive ecosystem management or integrated risk management, the role of the restoration manager is critical to achieving results and reducing waste. They need the ability to monitor and manage risk and to change spending decisions quickly. This will require credible indices to help them face three substantial challenges: 1) the fact that the ecosystem restoration is an enormously risky public investment, 2) the fact that scientific research can only marginally reduce restoration risks, and 3) the fact that these investments result in benefits that are difficult to measure in conventional dollar-terms and take many years to appear.

I have attached eleven exhibits that clarify and expand on some of the comments presented in this written testimony. I welcome any questions and encourage members of the committee and their staffs to contact me if they are interested in additional information.

EXHIBITS

Exhibit 1	Where Are We on the Learning Curve for Ecological Restoration
Exhibit 2	Ecosystem Restoration Tradeoffs
Exhibit 3	Comparing the Costs and Benefits of Ecosystem Restoration Projects
Exhibit 4	Wetland Restoration Cost-Effective Frontier
Exhibit 5	Overall Ecosystem Value
Exhibit 6	Essential Questions about Wetland Benefits
Exhibit 7	Basic Verification Questions
Exhibit 8	Links to Establish Restoration Benefits Indices
Exhibit 9	Ecological Restoration Investment/Risk Assessment Summary
Exhibit 10	Flow of Indicator Development to Arrive at a Relative Index of Wetland Value
Exhibit 10a	Terms Used to Describe Ecosystem Restoration Opportunities, Constraints, and Outcomes
Exhibit 11a	Illustration of Wetland Service Capacity Subindex Development
Exhibit 11b	Illustration of Wetland Value of Service Subindex Development
Exhibit 11c	Illustration of Wetland Service Risk Subindex Development
Exhibit 11d	Indicators to Link Functions to Services at Various Spatial Scales

Exhibit 1.



Source: King, Dennis M., 1992, "The Economics of Ecological Restoration" In: *Natural Resource Damage Assessment: Law and Economics*, John Duffield and Kevin Ward (Eds.), John Wiley Publishers, NY.

Exhibit 2. ECOSYSTEM RESTORATION TRADEOFFS

LEVEL 1	ASSET BALANCE	• Wetland vs. Upland, Riparian Buffer • Saltmarsh vs. Vernal Pools
LEVEL 2	PROJECT SITING	• Urban, suburban, agricultural, rural • Disturbed/undisturbed landscape
LEVEL 3	PROJECT GOALS	• Fish Habitat vs. Waterfowl Habitat • Wading Birds vs. Diving Birds • Short-legged vs. Long-legged Waders • Breeding vs. Feeding Habitats • Self-sustaining vs. Managed Habitats
LEVEL 4	PERFORMANCE CRITERIA	• Features, Functions, Services, or Values
LEVEL 5	DESIGN STRATEGY	• Intensive vs. Extensive • Aggressive vs. Passive • Engineered vs. Natural
LEVEL 6	RISK TOLERANCES	• Adaptive Management (Flexible; Natural) • Engineering Standards (Rigid Capacity) • Performance Standards (Rigid Function) • Service Standards (Equivalency) • Value Standards (Equivalency)
LEVEL 7	EQUITY CONSIDERATION	• Who benefits? Who pays? Who loses?

Exhibit 3.

COMPARING THE COSTS AND BENEFITS OF ECOSYSTEM RESTORATION PROJECTS

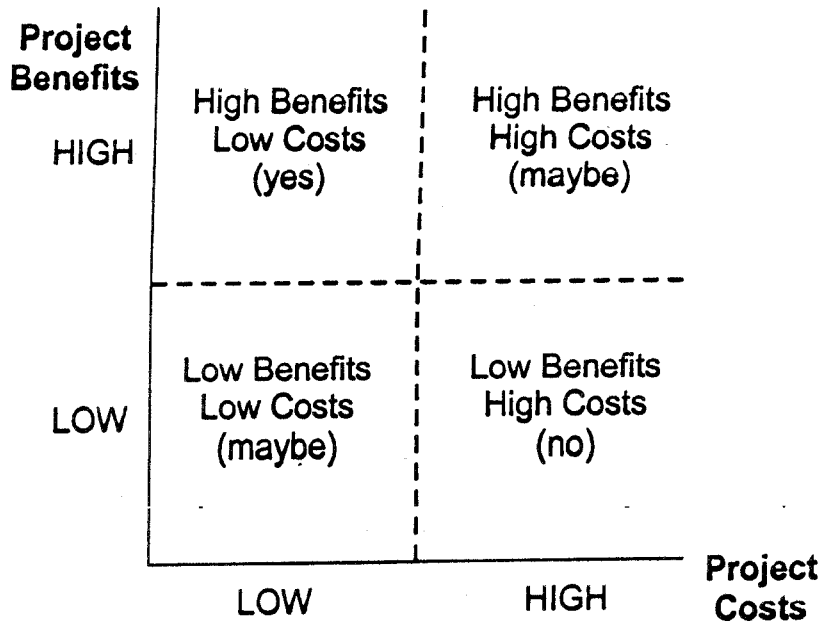
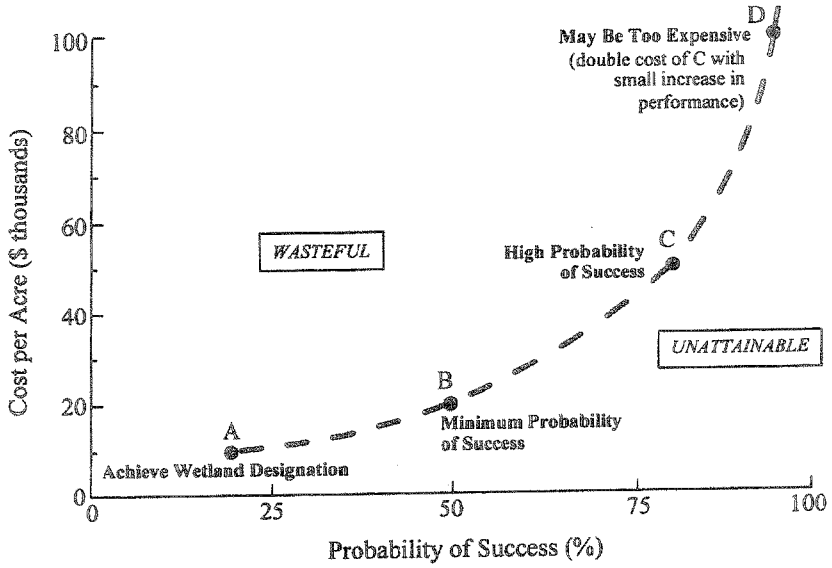


Exhibit 4 .

WETLAND RESTORATION COST-EFFECTIVE FRONTIER *



Explanation:

- Along the Cost-Effectiveness Frontier, additional costs increase the probability of success.
- The area above the Cost-Effectiveness Frontier is wasteful - tasks could be eliminated with cost savings and no reduction in the probability of success.
- The area below the Cost-Effectiveness Frontier is UNATTAINABLE - a given probability of success requires more tasks and higher costs

* *Illustrated values are based on preliminary estimates of cost and performance for coastal salt marsh restoration.*

Exhibit 5.

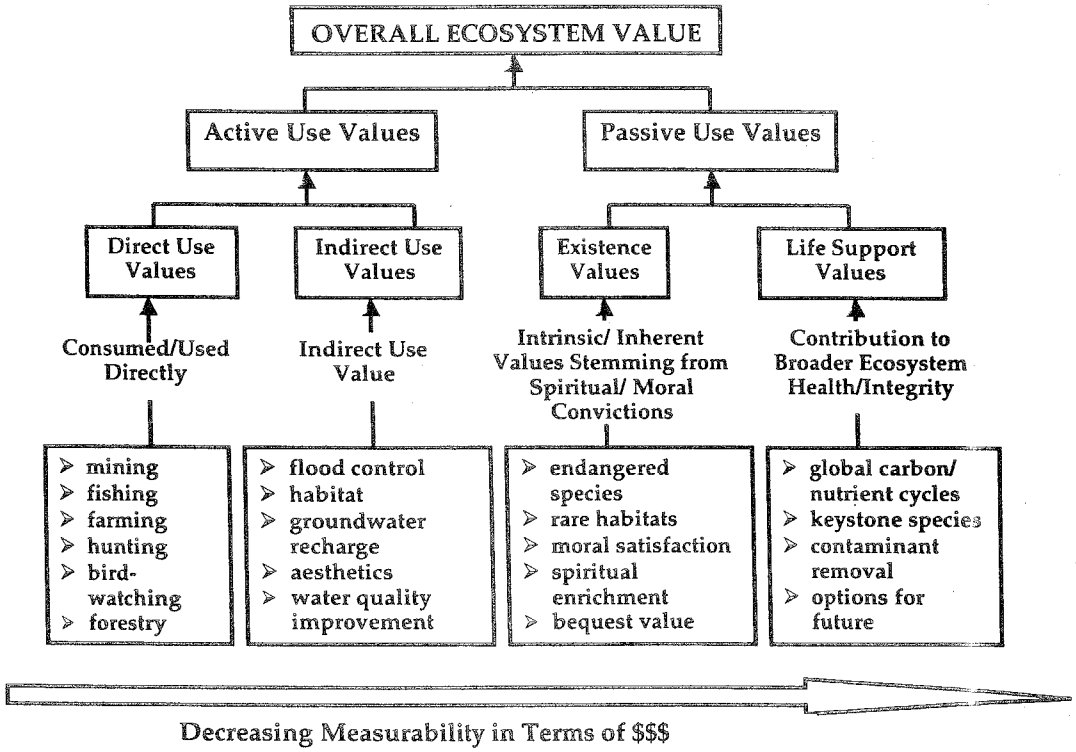

OVERALL ECOSYSTEM VALUE
Active Use Values
Passive Use Values
Direct Use Values
Indirect Use Values
Existence Values
Life Support Values
Consumed/Used Directly
Indirect Use Value
Intrinsic/ Inherent Values Stemming from Spiritual/ Moral Convictions
Contribution to Broader Ecosystem Health/Integrity
➢ mining
➢ fishing
➢ farming
➢ hunting
➢ bird-watching
➢ forestry
➢ flood control
➢ habitat
➢ groundwater recharge
➢ aesthetics
➢ water quality improvement
➢ endangered species
➢ rare habitats
➢ moral satisfaction
➢ spiritual enrichment
➢ bequest value
➢ global carbon/ nutrient cycles
➢ keystone species
➢ contaminant removal
➢ options for future
Decreasing Measurability in Terms of $$$

Exhibit 6. Essential Questions about Wetland Benefits

The following questions need to be addressed to arrive at a meaningful set of wetland value indices. In general, HGM addresses questions of function. Supplemental indicators would need to address the service value and risk questions.

Functions

1) What environmental functions does this wetland have the capacity to provide?
2) Does the wetland's landscape context allow it to provide these functions?
3) If so, are there factors that will cause it to function at less than full capacity?
4) Are there factors that may cause the wetland to function beyond its sustainable capacity?

Services

1) What services, products, and amenities will these wetland functions generate?
2) Over what geographic area will people benefit from these services and products?

Values

1) How scarce are these services, products, and amenities in this area?
2) How many people benefit from them; what is their income, ethnicity, etc.?
3) How much does it cost in money or time for people to enjoy these services?
4) Are there near-perfect *natural* substitutes that exist or could be developed?
5) Are there near-perfect *man-made* substitutes that exist or could be developed?
6) How could the affected population adapt to having fewer of these services?
7) How much would the affected population benefit from having more of these services?

Risk

1) How might future development make the services provided here more/less important?
2) How vulnerable are services generated by this site to temporary/permanent disruptions?
3) How restorable are these services in this region compared to other regions?
4) How might future development make the services provided here more/less vulnerable?
5) Will demographic/land use change increase/decrease preferences for these services?
6) Will demographic/land use changes increase/decrease availability of these services?

Exhibit 7. BASIC VERIFICATION QUESTIONS

WHAT — Should verification be based on documentation of:

- Site Suitability - e.g., potential of land use change to improve environment
- Activity – e.g., documented land use change or management practice
- Outcome – change in onsite biophysical features
- Result – change in habitat suitability or functional improvement

WHEN

- How frequently should activities, outcomes, or results be verified?
- Verification before the fact requires predicting outcomes and results.
- Verification after the fact requires waiting and measuring.

WHERE

- Should verification be based on typical or "average" sites or on individual sites?
- If typical or average sites are used how should they be classified by region, by site characteristics, by landscape context, by land use?
- What are the tradeoffs between resolution (accuracy) and effort (cost)?
- Sample at scale of ecoregion, grid area, region, county, site type

HOW

- Should verification be based on: 1) general rules, 2) process models, 3) remote sensing, 4) site monitoring, 5) site inspection, 6) site sampling, or 7) some combination
- How precise do predictions/estimates need to be? At what scale?
- How much precision can investment monitors afford?
- What is the cost of achieving accuracy to +/- 50%, +/- 75%, +/- 95%
- How can verification costs be reduced? How far should they be reduced?
- Can insurance and risk-sharing instruments reduce the need for accuracy?

WHO

- Who should undertake verification? Contractors, agencies, third-party auditors ?
- Who should pay for verification?
- Who should be liable for inaccuracies or responsible for warrantees?
- Who should certify that the certification criteria is accurate?

Exhibit 8. LINKS TO ESTABLISH RESTORATION BENEFITS INDICES

STAGE	INDICATOR TYPE	FOCUS OF ATTENTION
1	financial incentives	Eligibility criteria, project ranking criteria, level of funding, allocation of funds, etc.
lead to		
2	restoration investments	Conservation tillage, wetland restoration, riparian buffers, noxious weed control, manure management, reduced fertilizer/pesticide use, irrigation practices, etc.
which results in		
3	Bio-physical effects	Reduced sediment, nutrient, contaminant runoff, reduced use of water, energy, man-power; change in mix of seasonal/permanent ground cover, etc.
which improve		
4	the state of the environment	Improved habitat for fish, birds, fur-bearing animals; increased water/air/soil quality; reduced sedimentation
which generates		
5	Improved environmental functions	hydrological - floodwater control, groundwater recharge biological - biodiversity, species abundance, ecosystem resilience physical - chemical and carbon cycling, etc.
which results in		
6	Improved environmental services	commercial - better commercial fishing, reduced dredging, etc. recreational - better rec. fishing, hunting, bird watching, etc. other - reduced ecological and public health risks, aesthetics, etc.
which are the source of		
7	socio-economic benefits	Increased quality of life as measured by: a) revealed, expressed, or imputed "willingness to pay" • for improving environmental services • for reducing environmental & public health risks b) estimates of the numbers of people who benefit, etc. c) illustrations of how people benefit, costs avoided, etc.

Exhibit 9. Ecosystem restoration investment/risk assessment summary

Fact: Improving agricultural nutrient management is a necessary but not sufficient condition for improved economic conditions in coastal fisheries.

1. Investments in agricultural nutrient management may not result in fishery-related benefits.
2. Fishery-related benefits from controlling agricultural nutrients may be measurable only in terms of a reduction in economic losses caused by other factors.
3. Investments in agricultural nutrient management should be viewed within the context of portfolio investments designed to improve economic conditions in coastal fisheries.

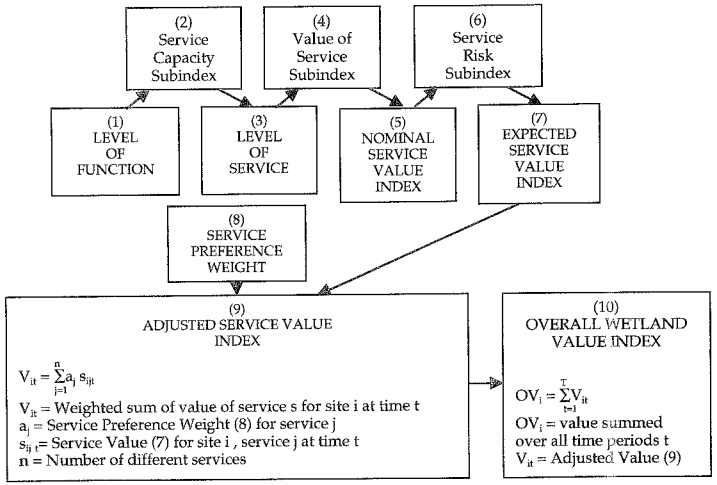
Species: Estuarine Fish Example

Life Requistes	Effect on Population	Status	Trend	Investment Level
Habitat	Recruitment Growth			
S.A.V. coverage				
availability of refugia				
substrate quality				
Water Quality				
D.O. level	Recruitment Growth			
ambient nutrient levels				
redox potential				
salinity				
temperature				
toxics				
Forage Availability				
availability of detritus	Growth Natural Mortality			
light intensity				
invasion of exotics				
Limits on Predators				
velocity & flow of freshwater	Natural Mortality			
population of larval predators				
population of alternative forage fish				
parasitism/disease rates				
invasion of exotics				
Fishing Pressure				
Commercial Effort	Fishing Mortality			
Recreational Effort				

Exhibit 10. Flow Of Indicator Development To Arrive At A Relative Index Of Wetland Value

EXAMPLES OF HGM FUNCTIONS
(Based on Kentucky Riverine Model)

1. Dynamic Surface Water Storage
2. Long-Term Surface Water Storage
3. Energy Dissipation
4. Subsurface Storage of Water
5. Modification of Groundwater Flow or Discharge
6. Nutrient Cycling
7. Removal of Elements and Compounds
8. Retention of Particulates
9. Export of Organic Carbon
10. Maintain Characteristic Plant Community
11. Maintain Characteristic Detrital Biomass
12. Maintain Spatial Structure of Habitat
13. Maintain Interspersion and Connectivity
14. Maintain Distribution and Abundance of Invertebrates



Definition of Terms: See Exhibit 1a for definitions of Function , Service, Value and Risk

Description of Indicators:

(1) Level of Function Index	Based on wetland conditions and landscape context.; HGM FCIs range from 0 to 1.
(2) Service Capacity Subindex	Based on expected services per unit of function; used to modify FCIs; also range from 0 to 1 and may depend on the level of several functions.
(3) Level of Service Index	Product of (1) and (2) (Level of Function x Service per unit function); since functions support more than one service there may be several Level of Service Indices per function.
(4) Value of Service Subindex	Based on expected value per unit service; used to modify the Level of Service Index.
(5) Level of Value Index	Product of (3) and (4) (Level of Service x Value per unit service)
(6) Service Risk Subindex	Based on exposure and vulnerability of the wetland site or important landscape features for a given time period.
(7) Value of Function Index	Product of (5) and (6); reflects the "expected value" of the services generated by wetland functions for a site in a given time period
(8) Preference Weight	Reflects public preferences for one type of mix of services over another; derived from ranked preference surveys
(9)Adjusted Value of Service	Product of service values (7) weighted by their value relative to other services (8)
(10) Overall Wetland Value Index	Sum of (9) for all services over all time periods

Exhibit 10a. Terms Used To Describe Ecosystem Restoration Opportunities, Constraints, And Outcomes

Building Blocks of Wetland Value

Functions, services, values, risk and several other terms are used in different ways in the wetland assessment literature and in the economics literature. The following definitions are offered here to minimize confusion over what will be used in the following sections as building blocks of wetland value indices.

Functions – the biophysical processes that take place within a wetland (e.g., fish and waterfowl habitat, carbon cycling, nutrient trapping). The level of wetland function depends on site and landscape characteristics and can be assessed independently of any human context.

Services – the beneficial outcomes that result from wetland functions (e.g., better fishing and hunting, cleaner water, better views, increased human health and reduced ecological risks). These require some interaction with, or at least some appreciation by, humans. However, they can be measured in physical terms (e.g., increased catch rates, greater carrying capacity, more user days, reduced risk, property damage avoided). The capacity of a wetland to provide services can be estimated without any ethical or subjective judgements about how much the services are worth. The types of potential services depend to some degree on the level of functions but predominantly on other factors (e.g., access, proximity to people or problems caused by people).

Values – interchangeable with the term benefit. Defined in strict economic terms, the full range of wetland benefits includes each person's "willingness-to-pay" in dollars for each wetland service summed across all people and all services. In most cases, tracing and estimating the absolute (dollar) value of a wetland is impossible. However, overall willingness to pay for a wetland service depends on the number of people with access, their income and tastes, the cost of access, the availability of substitutes, and other factors related to local, regional, and national supply and demand.

Features – on-site characteristics of a wetland that establish its capacity to perform or support various environmental functions (e.g., soil, ground cover, hydrology).

Landscape context – proximity of the wetland to other natural and man-made features in the surrounding landscape. Landscape context influences: a) the wetland's opportunity to function at capacity, b) the services that will flow from those functions, c) the value of those services, and d) the risk that the services will not persist.

Preferences – the identification of one wetland service as being more important or valuable than another. For purposes of comparing wetland values, individual and community indicators of ranked preferences can be as useful as absolute (dollar-based) estimates of value and are much easier to determine.

Risk – the volatility of potential outcomes. In the case of wetland values, the important risk factors are those that affect the possibility of service flow disruptions and the reversibility of service flow disruptions. These are associated with controllable and uncontrollable on-site risk factors (e.g., invasive plants, overuse, restoration failure) and landscape risk factors (e.g., changes in adjacent land uses, water diversions).

Exhibit 11a. Illustration of Wetland Service Capacity Subindex Development

SERVICE (on or off site)	WETLAND CONTRIBUTION	NECESSARY CONDITIONS	MEASURES OF NECESSARY CONDITIONS	POTENTIAL COMPONENTS OF SERVICE CAPACITY INDEX
Recreational Fishing Opportunities	Provide feeding, breeding and nursery habitat	Game fish present in adjacent or connected water body and fish/larvae have access; people have access	Presence of game fish, eggs, or larvae; Infrastructure to support fishing in connected waterway	•Obstructions to fish movement; fishable classification downstream; • % of time wetland hydrologically connected to adjacent waterway; •Fish population surveys; •Recreational infrastructure (fishing pier presence, fishing bank area, parking lot size, boat ramp presence, restroom capacity)
Birding, Hunting and Gathering Opportunities	Provide habitat for fungi, plants, birds and animals that use wetlands	Support of appropriate (esp. diverse or rare) habitat; access by enthusiasts	Presence of rare or desirable species; Access by birders/ hunters/ gatherers	•Biodiversity indices; presence/absence data; •Property ownership; •Trail miles; •Hunting restrictions;
Water Quality Maintenance	Trap sediments; Cycle nutrients; Filter contaminants	Surface water usage; water quality (fishable, swimmable, drinkable)	Sources of erosion and contaminants upslope / upstream; runoff, low gradients, shallow throughflow; Access measures; Significant contribution to water quality	Sources: •Presence of industrial or agricultural activity; •Area in unsewered residential; •Volume of waste water discharged upstream. Usage: •Beaches, •Parking, •Restrooms, •Municipal water intakes
Flood Damage Avoidance	Hydrologic regulation	Vulnerable property downstream; Ability of wetland to hold water	Structures and crops in 100-year flood plain downstream; Depressional area volume and upslope area drained by wetland	• # of structures in 100-year flood plain downstream; ownership type, land use •Depressional area volume; •Upslope area drained by wetland

Figure 11b. Illustration of Wetland Value of Service Subindex Development

SERVICE (on or off site)	GEOGRAPHIC EXTENT OF SERVICE	POPULATION BENEFITING	SUPPLY CONDITIONS	DEMAND CONDITIONS	POTENTIAL COMPONENTS VALUE OF SERVICE INDEX
Recreational Fishing Opportunities	Local	5-mile radius	Alternative sites within 5 miles; Quantity, quality, and capacity of alternative sites within 60 miles	Level and frequency of participation; Expressed / revealed preferences; Leisure time	• # fishing permits in zip code; •User days; •Contributions and memberships; • # fishing related businesses; • #alternative sites; •Preference survey results; •Avg. income / property value
	Regional	60-mile radius	Alternative sites within 60 miles	Level and frequency of participation; Expressed / revealed preferences; Leisure time	# fishing permits in state; #fishing related businesses; •Contributions and memberships; •Average income
Birding, Hunting and Gathering Opportunities	Local	5-mile radius	Alternative sites within 5 miles; Alternative sites within 60 miles	Level and frequency of participation; Expressed / revealed preferences; Leisure time	• # hunting permits; • #related businesses; • #alternative sites; •Value of gathered goods; •Access fees; •Contributions and memberships; •Average income
	Regional	60-mile radius	Alternative sites within 60 miles	Level and frequency of participation; Expressed / revealed preferences; Leisure time	• # hunting permits; • #related businesses; • #alternative sites; •Value of gathered goods; •Access fees; •Contributions and memberships; •Average income
Water Quality Maintenance	Regional	Regional	Existing water quality; Safe alternatives	expressed / revealed / imputed preferences;	•Stream order; Stream designation (swimmable / fishable); •Water volume; •Salinity; •Flow rates, •Residence time; •Types of use
Flood Damage Avoided	Local	Owners of downstream property within flood plain	Alternative natural or manmade stormwater control	Potential property and income losses; Proportion of industrial, residential and business property; Insurance costs	•Volume of runoff controlled by stormwater devices and natural depressions / vegetation; •Value of property at risk; •Proportion of industrial, residential and business property

Exhibit 11c. Illustration of Wetland Service Risk Subindex Development

SERVICE	MAJOR THREATS TO FUNCTION*		MAJOR THREATS TO SERVICES		POTENTIAL COMPONENTS OF SERVICE RISK SUBINDEX
	On-site	Off-site	On-site	Off-site	
Recreational Fishing Opportunities	Biological, physical and chemical threats to wetland	Biological, physical and chemical threats to landscape features	n/a	Change in access / property ownership / regulation and zoning; Change in land use	•Projected population growth rates (by locale / zipcode / watershed); •Expected development patterns in area (e.g. % impervious surface at buildout); •Disturbance level in adjacent area (mowing, boat traffic, agriculture, unsewered residential, channelization, invasive species); •Planned changes to nutrient loads, hydrologic regimes (e.g., waste water discharges, reservoirs, water diversions, groundwater drawdowns); •Invasive species spread rates.
Birding, Hunting and Gathering Opportunities	Biological, physical and chemical threats to wetland	Delivery of excess sediments, nutrients or contaminants (beyond wetland filtering capacity)	Change in access / property ownership; Conversion to developed use (agricultural/ residential); excavation; draining	Change in access / property ownership / regulation and zoning; Change in land use	
Water Quality Maintenance	Change in water table depth; Alien invasive plant / animal species; Erosion; Sea level rise; Change in soil or plant characteristics	Activities that generate delivery of excess sediments, nutrients or contaminants (beyond wetland filtering capacity)	Conversion to developed use: excavation, draining; Logging, fire	Projected land or water use that precludes service; Water diversion; Logging, fire, dredging	•Existing land use risk factors: agriculture, feed lots, septic fields; •Projected land use risk factors: water withdrawals; new feed lots, septic fields, logging , etc.; •Dredging; •Fire; •Changes to hydrologic regime: flood control structures, water diversions, groundwater drawdowns.
Flood Damage Avoided	Change in water table depth; Alien invasive plant / animal species; Decrease in floodplain storage or roughness	Excess sediment delivery; Increased runoff upslope; Change in flood frequency; Change in floodplain slope; Change in channel	Conversion to developed use; excavation; draining	Change in land use	•Homes in flood plain modified / moved / destroyed; •Changes to hydrologic regime: flood control structures, water diversions, groundwater drawdowns.

* Since services depend on function, the service risk subindex includes risk factors related to threats to functions as well as threats to service flows.

Exhibit 11d. Indicators to Link Functions to Services at Various Spatial Scales

		Potential Services			
Generalized Function (from HGM)	**Potential Landscape Components of Service Subindices**	**On-site (active use)**	**Watershed / County (active use)**	**Regional / State (active use)**	**Global (passive use)**
Habitat / Biodiversity: Variety of plants & wildlife using wetlands	Core area and nearest neighbor distances between local wetlands or other fragmentation measure (e.g. contagion); Site access, adjacent/nearby land use; ownership	Hunting, Viewing or Gathering (berries, nuts, mushrooms)	Property value maintenance; Fishing via habitat support (e.g., organic matter inputs, spawning and nursery habitat); Tourism related to viewing endangered species	Variability of production (option value); Fishing via habitat support (organic matter inputs); Reduce risk of function loss (through resilience to perturbation); Research opportunties	Existence, Bequest option of flora and fauna; Human life support; Health risks avoided
Water Quality Related: Sequester and cycle nutrients and particulates; Aquatic habitat	Downstream: Connected to water source? Swimmable / fishable? Upstream: Land use in residential, industrial or commercial land uses? RCRA / Superfund sites?	Aesthetics	Swimming, fishing through habitat support(chemical), Human health support, food supply	Protect drinking water resource for current / future needs	Existence, Bequest option of water source, Fish habitat
Hydrologic Functions: Store water, Moderate peak and base flow fluctuations	Residential / commercial riparian land uses downstream; Land area potentially draining to that site;	Erosion control, Peat or hay supply, Aesthetics	Flood control, Channel maintenance, Fishing via habitat support (structural, e.g., maintaining base flows)	Food production and Fishing through fish habitat support in estuary, near-coastal habitat (e.g. by reducing sediment inputs to receiving waters); Protect groundwater supply	Existence value, Bequest option of fish habitat

Mr. DOOLITTLE. Dr. King, as you look at the CALFED operation in the light of your experience, and I took note of how difficult you indicated it was in some cases to actually ascertain performance, but how do you think CALFED measures up, based on your knowledge of these issues?

Dr. KING. I have to say that I just this morning got a look at the indicator draft, and I thought it was very thorough and covered the conventional types of indicators. However, they're basically performance indicators.

Occasionally, there will be an indicator listed there that will say, for instance, a life requisite for a salmon might be water quality, habitat and so on and so on. The difference there is that if you're managing investments the hard choices require you to say, we're improving this necessary condition but we can only—that can only reach any meaningful goal if these other necessary conditions exist. And if we have a 5-year program and in the beginning of year one, one of the other necessary conditions doesn't exist, the likelihood of success changes, and we need to change our investment strategy.

Those are the kind of indicators, these risk indicators, leading indicators of success and failure, which I think build on what are in those indicators that represent primarily scientific definitions of performance.

Mr. DOOLITTLE. Thank you.

Let me throw this question out to the members of the panel and see what your answer is. Many of you—all of you I think have supported CALFED and indicated that it's doing good things; and if you want to elaborate on that, I would invite that. But I guess, conversely, what is it about CALFED that isn't in your opinion going as it ought to go? Where could it—where is it falling down or where does it need to improve? Anybody want to take a stab at that?

Mr. SPRAGUE. Mr. Chairman, I'll be bold and take a first shot.

Mr. DOOLITTLE. Okay. Mr. Sprague, for the record, is going to volunteer his opinion. Good.

Mr. SPRAGUE. You know, there is kind of a group of what I'll call inside baseball players that have been following this CALFED, and I would even include this Committee in that group. But then there's a whole another sundry of people that are outside, for example, my own board of directors that are locally elected that really make the decisions and the consumers that they supply with water. I don't think we have collectively and I think we have to collectively take part of that blame with CALFED. They have the wrong expectations of what CALFED is going to deliver at the end of the day. They're measuring the beef of the success in many instances in the wrong way, and I think we need to work with CALFED and try to get a broader understanding. For example——

Mr. DOOLITTLE. I didn't understand something you said. You said they're measuring the what for their success?

Mr. SPRAGUE. They're measuring kind of "Where's the beef" in the whole effort.

Mr. DOOLITTLE. Oh. That was Mondale's slogan, right? "Where's the beef?"

Mr. SPRAGUE. Yeah. I believe so. I learned it from a little old lady in Pasadena.

Mr. DOOLITTLE. Okay.

Mr. SPRAGUE. But I think one of the difficulties that we have right now is many of us are more used to EIRs and EISs that come out that are very project oriented. So you're going to put a pipeline in the ground, you're going to put a reservoir in place, you're going to put a treatment plant in place, you're going to put a bridge in place, so you're doing an EIR in that fashion.

What we're really going to see coming out of this upcoming document really is a foundation that we use then to build on for the next 30 years. And my biggest fear is that, when this EIR is released, our public is not going to see the beef in that document and so, therefore, they're going to declare it a failure.

And so I think somehow or other we collectively need to work together to help them understand what the process is. Let's get an EIR that gives us the foundation to do the necessary permitting. And then when we go to the individual projects that are necessary, those get dealt with in a separate EIR document. So it's more of a public outreach issue than it is a technical issue where they're bringing the stakeholders together.

Mr. DOOLITTLE. So you think they're falling down in not doing enough public outreach.

Mr. SPRAGUE. I think so.

Mr. DOOLITTLE. Okay. Anybody else want to volunteer an opinion?

Mr. GUY. Well, I'll——

Mr. DOOLITTLE. Mr. Guy.

Mr. GUY. [continuing] reaffirm—talked a little bit earlier about both I think the impatience that you're starting to see in the water user community that we're going to have some water supply reliability and some real water supply reliability. I just think that we need to make some things happen. And there needs to be a balanced package where the water users see some immediate benefit. Otherwise, I think people's patience is going to grow very thin.

I also made some suggestions on the land acquisition side. I think that that so far—there's been some shortfalls in that, but I think we have seen some progress, and I think there's some ways to get around that. But I think we need to work a lot harder in that area.

Mr. DOOLITTLE. All right. Thank you.

Mr. Dooley is recognized for his question.

Mr. DOOLEY. I guess on this land acquisition, I'm struggling with this just a little bit. Mr. Guy, what problems are you talking about that have already occurred?

Mr. GUY. Well, I think some of the—they come in a lot of forms. But I think there's been a real feeling that the counties particularly have not been involved in the process.

Mr. DOOLEY. But isn't this a voluntary sale? I mean, a willing seller to a willing buyer? So if I'm a private landowner and I want to participate in this program, I just exercise my property rights and—I mean, is—are those being infringed upon in any way?

Mr. GUY. Well, it is being well-premised on voluntary sales. But the county, of course, typically has some land use authority and has been granted that by the legislature. And they have revenue issues, of course, that when you convert land to habitat purposes there are some revenue losses that occur to the county. And there's

been some problems with in-lieu taxes not being paid. I think those are legitimate concerns.

Mr. DOOLEY. Is that the issue? Because, as a farmer myself and a property owner, if I choose to sell to this program, I don't want the county or anyone else saying, no, I can't do it. So I want to make sure we're defining the issues. Is the problem, then, a lack of tax revenue that you're most concerned with?

Mr. GUY. That's one piece of it, yes. I think you hit it right on the head. I don't think anybody, at least that I'm hearing, wants to stand in the way of a transaction. That's not, I don't think, what anybody is saying.

The second piece of this is if you take, for example, some riparian land and make it into setback levees or put trees in the flood plains, what does this mean for existing diversions for water supply? That can create some real problems whether the diversion may get washed out, it may get silted up. That poses some problems. And those issues really, I think, need to be worked out. And so far have—there's really not been a process to do that. I think there will be, though.

Mr. DOOLEY. Those are very valid points, and I appreciate that.

Dr. Gleick, I appreciated your testimony. I guess, though, a lot of the folks I represent which are south of the Delta are concerned about whether or not we do have adequate supplies of water. And where you're—your figures I do not contest. I think they're accurate. But some of the concerns are even with the upcoming PEIS is that there's some modeling that's been doing there that would show just even on almost normal years or slightly below normal years that there could be significant reductions, very significant reductions to agriculture contractors. I guess that's, you know, the concern that some of us have is, you know, how do we ensure that we do have an adequate supply of water that can maintain an agriculture base even when we have these critically dry years? I don't know if you have a comment on that.

Dr. GLEICK. Well, I have been critical in the past of the long-term water planning process in California, as many people in this room know, in particular the way we project future demand, the way we actually try and calculate what the demand for water is going to be in the different sectors. There are real problems there.

Having said that, I think the way to think about this is not to separate out the different pieces but to think about it in an integrated way. Our goal is not new storage. Our goal is not individual pieces of this. Our goal is a safe and reliable water supply for our users with a healthy environment.

And there are a whole series of tools that we have available to us to achieve those goals; and they can only be achieved, we think, in the way CALFED is trying to do it, by bringing together all of the parties and thinking about the alternatives.

And the Trinity River came up this morning. And I realize no decision has been made about the Trinity River and reallocations of water, but it's an interesting issue. Because the assumption I think of some of the Committee members has been that it's a win-lose situation. You take water out of the Trinity—you put water back into the Trinity River and somebody downstream in the Sacramento River is going to lose.

And I would like to suggest that, in fact, there might be another way to think about that. To give you an example, if you look at the Mono Lake situation, the decision was made, legally to return water to the ecosystem. That meant many people believed you lose water in Los Angeles. But the truth of it is that when you get together with the users in Los Angeles and you think about ways of meeting the ecosystem needs required by law, without losing water for users or without losing what the water provides, they were able to figure out ways of increasing the efficiency of water use and providing the same level of services.

So it was not a win-lose situation; it was a win-win situation. And there are a lot of those. And I think in the agricultural area in particular there are lot of them. I think that's what we have to look for.

Mr. DOOLEY. And I think you're right, and I think we're seeing some evidence of that to some extent. It's just—but just even like in a year such as this where we've had 120 percent of rainfall in the—you know, the northern California and, you know, the Westlands water district that I represent is at 70 percent of allocation. Their concern and, I guess, willingness to accept that, you know, we—even with the Trinity decision and other decisions that take more water out of the system, you know, they don't have a whole lot of confidence that I guess that this thing can be, you know—that that can be replaced. But I think you're right about the process in terms of that's the best way to deal with it is in its totality.

Dr. GLEICK. I also don't dispute your point. In a very dry year, in which—I mean, California has dry years. It's a regular part of our system. Not every user is going to get all of the water they might demand. And that's always been true, and it's going to be true in the future. And the question is, how do you reallocate during dry years to meet the needs you really want? And there are economic ways of doing that, and there are regulatory ways of doing that, and it's got to be in a balanced, discussed approach.

Mr. DOOLITTLE. Mr. Miller is recognized.

Mr. MILLER. Thank you.

Dr. Gleick, let me follow up on your first discussion on the Trinity River. Would you care to expand on why you think this might not be a win-lose situation?

Dr. GLEICK. I raise that only as an idea to think about. Obviously, no decision has been made about how much water might have to be reallocated into the Trinity or where that water is going to come from. But downstream in the Sacramento River there are many users, urban and agriculture users; and there is enormous potential, we believe, for improving the efficiency with which those users use their water. That may reduce their long-term demand. I think the potential is quite significant to reduce long-term demand and still meet the needs with less water.

Now, if that's part of the decision, you decide how much water can be reallocated for ecosystem needs at the same time you're figuring out where that water is coming from, I think that's what you have to do. But I can't speak specifically to——

Mr. MILLER. I just—I didn't know if you had something particular in mind. I agree with you that there is a lot of alternatives

to be explored in terms of whether or not people end up actually using, as you say, the purposes for which the water was delivered. There's other ways to do it.

Let me take you back to your discussion some months ago on the question of Bulletin 160. What has been done to address some of the concerns that you raised with respect to this demand that would be driven by this bulletin and the assumptions that were made in the bulletin?

Dr. GLEICK. Umm——

Mr. MILLER. When I say what has been done, I'm asking about in the CALFED process.

Dr. GLEICK. Let me address two pieces. The comments we made and continue to make about Bulletin 160 to the Department of Water Resources addressed the assumptions and the methods and the data they used to project future demand in California. And our conclusion then and today was that their assumptions about future demand are very much wrong, that their methods are wrong, their data are wrong, their assumptions are wrong. The final Bulletin 160-98 did not adequately, in my opinion, address the errors in the draft.

Now, CALFED in its first draft—we were asked by the Bureau of Reclamation to do an independent assessment of their water use efficiency numbers. In the first round, they pretty much assumed the same things Bulletin 160 assumed. They adopted the assumptions, they adopted the data. I would have to say even in their first draft they did somewhat of a better job than did the Department of Water Resources.

And, in addition, after receiving our comments and other people's comments, I think the CALFED staff has made a very serious effort to understand the nature of the problems in Bulletin 160 and to try and correct them.

My feeling, based on what I have seen of the latest version, is that they have still not adequately completely addressed this problem of projecting future demand, with the result being that I think they are still overestimating 2020 demand in California. But they are technical issues that I find them open to discuss. I find them open to trying to resolve some of these issues.

Mr. MILLER. I raise that because in conversations after your initial criticisms and concerns with the Bulletin and its estimates of demand, with the number of people—because I think that it's absolutely crucial that this point get cleared up. I'm not suggesting how or what the conclusion is. But if at some point we envision ourselves going to the taxpayers and asking for very substantial amounts of money, and this is still an ambiguity or certainly the criticism remain credible, that we're sizing the system for demand that is not there. I think you are going to have a lot of difficulty in that measure if you then have opponents to that measure who can use that argument. Because usually those kinds of questions which are deeply imbedded with economic decisions don't do well when they're raised inside the debate on a bond issue or such an effort.

So, you know, I don't know whether people want to hold on to these assumptions or you indicate that you think there's some honest review going on here, and I find that very encouraging. Because

I think if that doesn't happen, this can be fatal to what some people envision will be part of this process, which is a substantial bond issue to fund these projects. But if the basis of which those decisions are made is flawed, I suspect you—it would not take a lot of effort to discourage voters from voting for that bond issue. So I'm glad to hear that you suggest that there is some correction and some ongoing discussion about these matters but apparently not yet completely resolved.

Dr. GLEICK. Ultimately, the California water plan is the Bulletin 160 process. And I think that process is broken, and I think it needs to be fixed.

There was a meeting yesterday at the Department in Sacramento on Bulletin 160, and the next one which will be in 2003. I don't think we can believe the current Bulletin 160-98 demand productions. I think they're not useful for policy making. And I agree entirely with your point if we are planning for a demand that either isn't going to materialize or doesn't have to materialize with relatively inexpensive, relatively simple measures, we could be making very expensive mistakes.

Mr. MILLER. Well, I just notice that Mr. Gartrell's testimony in the next panel, you know he talks about the fact that in Contra Costa, in the congressional district I represent, the water district, their service area has declined almost 15 percent since 1990, despite a substantial population growth, is—currently is about 25,000 acre feet annually below the level it would have been if he had just taken 1990 and run it out. You know—and I don't know what's going on in other water districts or other users of any kind. But, again, you know, before you're able to go to the taxpayers and ask for hard dollars, I think you better have the justifications for that based upon solid and correct evidence.

Dr. GLEICK. That trend is not unique. In my testimony, I provide data for Los Angeles, for San Diego, the East Bay Municipal Utilities, every water district showing continued population growth and leveling off of total demand and a decline in per capita water use.

Mr. MILLER. I some time ago met with a group of bankers in San Francisco to talk about water in California and about the questions of long-term contracts, water marketing and pricing and all the rest of it. And after long, long discussions their conclusion was that if, you know, if you had a real water market in the State you'd probably have a substantial surplus of water and not terribly high-priced water, not the estimates that you see that are as wild as they suggested.

I don't know if they're right or not, but their economic model suggested to them that there were a lot of ways to manage demand and deal with it. And the question of how far out they would be driven that aren't consistent with just this, you know, glide path that suggests that you're never really going to be able to catch up to it with supply was sort of the story we first heard about energy.

When I first came on this Committee, if we didn't build a thousand nuclear power plants the country was going to go black. All the lights would be turned out. That went on here for almost a decade. Obviously, we find the story of electricity is entirely different than that.

Thank you very much for your help.

And, Mr. Kaniewski, let me say Max would be proud of you today. It was sterling testimony.

Mr. KANIEWSKI. Thank you.

Mr. MILLER. You're welcome. Thank you.

Mr. DOOLITTLE. Thank you.

Mr. McCormick, after I concluded it was pointed out to me that you were about to answer my question, I guess, which was where is CALFED falling down or where could it improve. Did you want to take a stab at that?

Mr. MCCORMICK. Yeah, thank you very much. Not so much falling down but some areas to pay attention to.

Although a significant amount of money has been awarded for the ecosystem restoration program, the process for getting that money spent is cumbersome, and I think it hasn't caught up, really, with the demand, and it's a consequence of a number of agencies trying to manage the process. I think a single contracting entity would help enormously. I also——

Mr. DOOLITTLE. Let me just ask, so you're recommending a single contracting entity. How many contracting entities do we have now?

Mr. MCCORMICK. Well, there are the State contracts and Federal agencies' contracts and sort of borrowing staff, as it were, from those various agencies.

Mr. DOOLITTLE. Okay. Dr. Gleick, I find your testimony interesting and useful in the way you've laid out the remarkable strides made with conservation in those examples for LA water demand, but, in general, you make that point very effectively.

One thing I have wondered about, we're going increasingly towards permanent crops now. Well, I think in the San Joaquin Valley—maybe that trend is in the Sacramento Valley. But, in any event, there is some trend toward that which I guess may use less water than field crops but which demand water every year without having the ability to not use it in a given year. How do—as you see meeting our water needs, how do you think we should address that situation?

Dr. GLEICK. You're right. There is that trend. Figure 2 in my written testimony shows that trend. I also agree that that trend means some of those crops are going to need water with a higher level of reliability.

Now, I think that's an interesting issue. I think it hasn't adequately been addressed, and I think there's a real legitimate discussion that needs to happen about how to guarantee higher levels of reliability for certain kinds of crops. And I don't know whether that's an—economic measures are appropriate for that or some sort of regulatory measure, which I'm a little reluctant to recommend. I do think it's valid.

California's cropping patterns are still—I mean, the vast majority of the acreage is still in grains and field crops, and that I think still has enormous potential for—all of the crops still have potential for improving the efficiency for which they use water. And that—I mean, there are different ways of doing that. One is, you reduce the amount of water to grow a certain amount of crops or you keep the amount of water constant and you grow more crops. The productivity of the farms goes up. Those are all relevant issues that need to be discussed.

Mr. DOOLITTLE. So are you of the opinion that the potential for further conservation in the urban areas is still substantial or do you feel maybe they've just about reached their potential to conserve?

Dr. GLEICK. I think they have nowhere near reached their potential to conserve. I think the potential in urban areas is still enormous. And that includes not just doing what we do more efficiently but there's also enormous potential for much more widespread use of reclaimed recycled water. There is even, in our case, studies, examples of reclaimed water being used for agricultural use. And that's a very reliable source of supply, that you will get that water in drought years as well as wet years. So that's—I think that's an interesting issue that is also—I mean, there are examples already under way. I think it needs to be more widely looked at.

Mr. DOOLITTLE. Examples of agricultural reuse?

Dr. GLEICK. Sure. Now, that water tends to be relatively more expensive. You want to use it—it's got to be relatively close to where it's been reclaimed because you can't move it very far. But there are already examples of farms in rural or areas near urban areas using reclaimed water.

Mr. DOOLITTLE. Would you just as a supplement to your testimony today, if you have this available, forward that to the Committee?

Dr. GLEICK. Sure. In the executive summary of the case studies we have, there are brief descriptions. I will leave with you the full report which has the detailed case studies as well.

Mr. DOOLITTLE. Great. Thank you.

Mr. Sprague, did you want to comment?

Mr. SPRAGUE. Thank you, Mr. Chairman.

One of the things that we have to keep in mind as we move forward with conservation particularly in urban areas, we can do much more, but one of the things that is very critical to us is water quality. As we get a poor quality water, once you move that water through the domestic cycle once, you may not be able to have the second use. So the better we can receive as far as a source water quality, this is going to give us second uses and even third uses of that reclaimed water. So water quality plays a very high role in long-term water use efficiency, particularly in the areas of conservation in the urban areas.

Earlier this morning we were talking—the Secretary was talking about conjunctive use and groundwater efforts. There are a great number of opportunities for conjunctive use of groundwater basins. But just in Orange County, we are experiencing problems there. In effect, Colorado River water that's brought into southern California can't be discharged even onto crops, in theory, or onto land because it exceeds the basin plan.

However, we have come up with strategies to overcome some of that. So salinity issue as an element of water quality is extremely important for success in the area of conservation, and I know it's an extreme importance to agriculture. So there's a clear partnership there, and I believe it has the same impacts on agriculture as it relates to conservation as well.

Mr. DOOLITTLE. Gentlemen, I thank you for your appearance before the Committee. The testimony has been very useful. We may

have further questions. We'll keep the record open to receive your responses. And, with that, we'll excuse this panel.

I would just like to announce that, contrary to what I had announced previously, apparently we are supposed to have one more vote. So I don't know when that is going to happen, but I guess we'll just roll on through until it does.

We'll invite our third and final panel to come forward and begin the discussion of CVPIA.

We welcome the members of our third panel. Let me ask you to rise and raise your right hands.

[Witnesses sworn.]

Mr. DOOLITTLE. Let the record reflect that each answered in the affirmative. And I thank you very much for your patience and joining us today for this important hearing where we'll now focus more on the Central Valley Improvement Project Act.

We will begin with our Secretary—oh, Miss Beneke is available to answer questions. So we'll begin with Mr. Gregory Gartrell. Mr. Gartrell, welcome.

STATEMENT OF GREGORY GARTRELL, ASSISTANT GENERAL MANAGER, CONTRA COSTA WATER DISTRICT, CONCORD, CALIFORNIA

Mr. GARTRELL. Thank you very much, Chairman Doolittle, members of the Committee. It's a pleasure to be here this afternoon.

I'm going to briefly summarize the text that I submitted.

I'm representing Contra Costa Water District. Contra Costa Water District has been a supporter the CVPIA and its goals from the beginning. In fact, the District was the first to renegotiate its own CVP contract under the CVPIA and has already incorporated many of the provisions within its contract.

Contra Costa Water District represents and serves about 400,000 customers in eastern and central Contra Costa County, including 10 major industries. About a third of our demand is industrial. We are the largest municipal and industrial CVP contractor. We're entirely dependent on the Delta for our water supplies and have a long history of a strong commitment to water quality and the environment in the Delta.

I'm going to hit just a few of the issues in my summary. I would be happy to answer questions on any of them.

The first one I would like to touch upon is the contract renewal issue. The Contra Costa Water District and other urban CVP contractors are very concerned at the moment about the shortage provisions that are being envisioned within the PEIS for the CVPIA. We are now looking at shortages up to 50 percent for urban areas.

Previously, the maximum shortage level was down to a 75 percent supply under the urban reliability paper of the Garamendi process. Our current contract calls for an 85 percent supply except under the most extreme droughts, 75 percent. The 50 percent supply is simply well below the limits that are needed to sustain health and safety and would result in major economic disruption. For example, in our district, 30 percent of the supply—approximately 30 percent of our supply goes to industrial use, or, of our current demand of 120,000 acre feet, about almost 40,000 acre feet.

A 50 percent cutback down to 60,000 acre feet would result in a choice of either cutting off the major industries—and these include refineries for Shell and Tosco and others, Dow Chemical, U.S. Steel–Posco, or putting the full burden on our other customers, the municipal customers, which would leave them, out of a normal demand of about 80,000 acre feet, down to about 20,000 acre feet, well below that needed for a simple toilet flushing and usual health and safety measures that are needed.

So we are very concerned about this coming forward at this late time in the PEIS process. We think they are not going to leave that just with that. We believe there are solutions that need to be worked out with Reclamation, and the Department of the Interior.

There are a number of assumptions going into these studies that are being made that have not been well examined. I think a number of those need reconsideration. But, most importantly, I think the process of the CVPIA needs to be tied closely to CALFED to address the impacts that are coming out. This is going to be a theme throughout my discussion, that it is, I think, very important for both the CVPIA and CALFED to be moving together towards a regional solution for the State.

The second issue is related to (b)(2), as mentioned previously today. This is a very contentious and technically difficult issue. The 800,000 acre feet is now embroiled in a lawsuit. We are very concerned that this not get into a death spiral of lawsuits which could easily affect CALFED and other water issues.

We suggest that the Federal Negotiated Rulemaking Act may be one solution to this, the 1990 Act which provides for a binding consensus building on which that rule is based. This would be an ideal situation, I think, in which to use that Act to get stakeholders in the room and work out a solution on the accounting for the 800,000 acre feet.

Another item of concern is tiered pricing, also mentioned earlier today. This is one area where one size does not fit all. In particular, tiered pricing can be used, if not carefully put together, to penalize those who seek to take more water in the CVP in wet years, store it and then use that to reduce their burden on the CVP in dry years. If you're in a situation like ours where Contra Costa is well below our full-contract amount, by taking more in a wet year and storing it you could be end up paying in the higher tiers and end up with an overall financial penalty.

The other problem is the high fixed costs of the CVP. We're finding that the more we conserve the higher our rate goes, so that the financial benefits of conservation don't accrue at 100 percent. This is the something that Reclamation and Interior are going to have to implement very carefully.

Finally, with respect to the PEIS and the CVPIA, we all know the PEIS is very late. It has still a number of issues to resolve with respect to baseline ensuring that impacts are fully disclosed, and it is showing some serious impacts that are significant with respect to endangered species, in particular to winter run. We're very concerned about the studies that are showing Shasta levels at very, very low levels at the same time agricultural users are getting no water supply, urban areas are getting a 50 percent supply. It's not

clear that that's an implementable solution with respect to winter run.

Probably the single most important thing we have done for winter run in raising their numbers from a few hundred a couple of years ago into the thousands now has been having a good supply of cold water in Shasta. Lowering Shasta to very low levels will put that in jeopardy.

Again, I think the solution here is an integration of these issues with CALFED. It was mentioned earlier by Secretary Babbitt that they're both moving down—both CALFED and the CVPIA are moving in the same direction. Our concern, I guess, is it is almost like two big trains moving on parallel tracks. You look down the line there, you're not quite sure whether those tracks intersect or not. If they do and they are not well timed and well coordinated, you're going to have a big collision. And we would like to ensure that those trains end up on the same track pulling each other along.

Again, the—for a number of issues with respect to CALFED and the CVPIA, related to 404 permits, the ESA, the Anadromous Fish Restoration Program—and the general assurances may again lend themselves to a discussion and a resolution through the Negotiated Rulemaking Act. Other issues certainly will not. But I think the focus now should really be put on the Record of Decision where all of these issues have the opportunity to come together.

And that concludes the summary of my statement.

Mr. DOOLITTLE. Thank you.

[The prepared statement of Mr. Gartrell follows:]

Statement of Gregory Gartrell
Contra Costa Water District, California

Chairman Doolittle and Members of the Committee:

The following text is my statement, which provides an urban water supplier perspective on aspects of the current implementation of the Central Valley Project Improvement Act (CVPIA). As requested, I will be providing testimony which addresses the following issues: 1) Central Valley Project (CVP) contract renewals, including Municipal and Industrial (M&I) shortage provisions; 2) implementation of Section 3406(b)(2) of the CVPIA (the 800,000 acre-foot provision); 3) tiered pricing; 4) CVPIA Restoration Fund management; 5) options under consideration to carry out the Trinity River provisions; 6) the CVPIA PEIS, including sunsetting provisions in CVPIA; and 7) CVPIA coordination with the CALFED Program.

At the start of my comments it is important to recognize that the Contra Costa Water District (CCWD) provided early support of the 1992 CVPIA and has continued to be a supporter. In fact, CCWD was the first to renegotiate its contract under the CVPIA and included CVPIA provisions in the contract.

Seven years ago, the Congress recognized the need to make critical changes in the operation of California water systems, both to protect and restore the aquatic environment and to help resolve the issues that are impacting the reliability and quality of water supplies for the 20,000,000 people who rely on the Delta for some or all of their water. The CVPIA has also had significant impacts beyond the limits of the CVP itself.

One of the most substantial impact was the initiation of the CALFED Bay-Delta process in 1994, an effort of unprecedented scale and sweep that is aimed at developing and implementing a consensus solution to the environmental and water quality needs of the Bay-Delta. Today California is struggling to move this restoration program forward, in an effort to resolve problems that developed over a century and a half. We believe that CALFED must succeed, and that to succeed, the CVP must perform at its best. To that end I will identify some areas where improvements are needed.

Contra Costa Water District: The Contra Costa Water District (CCWD) is the CVP's largest Municipal and Industrial (M&I) contractor. CCWD serves a population of approximately 400,000 in Central and Eastern Contra Costa County, one of the fastest growing urban areas in California. CCWD has a contract with the U.S. Bureau of Reclamation (Reclamation) for 195,000 acre-feet annually from the CVP; currently, the water demand in CCWD is about 125,000 acre-feet annually. The demand for water in CCWD's service area has declined almost 15 per cent since 1990 despite substantial population growth, and is currently about 25,000 acre-feet annually below the level it would be at were the 1990 level of demands simply scaled by population growth. This decline in water use is due to a substantial commitment by CCWD and its customers to conservation and to the lingering effects of the 1987-1992 drought, during which CCWD suffered large cuts in its CVP water supply.

CCWD is entirely dependent upon the Sacramento-San Joaquin River Delta (Delta) for its water supply. CCWD has historically played a key role in defending the Delta, especially with regard to improving Delta water quality and the Delta environment. CCWD's recently completed Los Vaqueros Project, a $450-million water quality project that is entirely funded by CCWD's rate payers, is a strong example of CCWD's commitment to the Delta. The Los Vaqueros Project was designed to improve the water quality of CCWD's customers while at the same time enhancing the Delta environment. The Los Vaqueros Project provides a net benefit to the Delta, and will continue to do so as CCWD's water demands grow over the next 50 years.[1] Provision of net benefits to the Delta and to fisheries has become the standard for implementing projects affecting the Delta, and CCWD's Los Vaqueros Project has led the way.

Exhibit 1 to this statement provides more details on the Contra Costa Water District, its water contracts and water rights and its commitment to the protection of the Delta.

The following addresses each of the issues listed above.

1) Central Valley Project (CVP) contract renewals

Urban agencies are deeply concerned with the trend to allow shortages to M&I customers that result in supplies below the minimum levels necessary to maintain public health and safety and the local economy. Currently, Reclamation is developing information for the CVPIA PEIS that would allow frequent, severe shortages to M&I contractors; the PEIS is assuming shortages of up to 50%. These levels are far below those water supply levels required to meet minimal public health and safety, as well as those needed to maintain a healthy economy in the communities served by CCWD and other CVP M&I contractors.

By way of comparison, CCWD's current CVP contract provides for a minimum 85% supply, except in extreme droughts, when it can fall to 75% of historical use. Even these shortage levels will cause substantial disruption for M&I users for several reasons.

First, a large fraction of M&I use is for industry; for CCWD, one-third of its water deliveries goes to industry. In order to prevent wholesale shutdowns of industries like the Martinez (Shell) and Tosco Refineries, Dow Chemical, USS Posco, and others, the burden of the cutbacks would be shifted to municipal demand, thus putting nearly all of the burden on a fraction of the water users, people in their homes and small businesses in the community.

Second, municipal use is already reduced due to substantial conservation efforts. Municipal use throughout California is well below 1990 levels, despite a substantial increase in population. This means that the margin for further conservation is

[1] In fact, the Los Vaqueros Project has just been announced as the American Society of Civil Engineers' Outstanding Civil Engineering Achievement for 1999 in recognition, in part, of the environmental benefits of the project.

substantially reduced. The customer who saved 7.5 gallons of water by not flushing a toilet in 1990 now saves only 1.5 gallons with a new Ultra Low Flow Toilet. The customer who replaced a lawn with a drought tolerant garden is already using minimal levels of water. Further reductions would be difficult and very costly for the consumer, yet that is what would be necessary under the current proposed shortage formulas.

As it stands, a 75% shortage policy for M&I customers is not sustainable for long droughts without significant economic impacts. The proposed shortage level of 50% would result in an economic and social nightmare: rationing would be severe, major industries would be forced to shutdown or substantially curtail operations (resulting in significant secondary impacts that can affect the price of commodities such as gasoline), minimal water levels would be available for public health and urban green areas would disappear.

The assumptions involving these higher levels of shortages were not made in an open forum, and are inconsistent with the Urban Reliability paper presented by Interior during the Garamendi process. The imbedded assumptions that relate to this shortage level are made in a way that will limit the analysis and the options available for a Record of Decision. The full impacts of such a policy will be masked in the analysis and not fully disclosed. Further masking the impacts of a potential 50 per cent supply reduction is the fact that California has been in a wet cycle since 1993. This undoubtedly leaves many with a false sense of security.

To avoid unacceptable shortage levels, Reclamation and the Department of Interior must continue to explore better ways to balance supplies in shortage periods, and work to ensure mitigation is available, through the PEIS. The yield replacement sections of the CVPIA point to a way to mitigate these impacts. Yield replacement should be pursued now to avoid or mitigate for potentially severe economic as well as health and safety impacts. There is an opportunity to tie implementation of the CVPIA to CALFED, so that solutions to these issues can be brought forward through CALFED at the same time as the CVPIA PEIS moves forward.

Urban agencies are concerned that the contract supply amounts and contract term issues be appropriately resolved. The California Constitution provides that the highest use of water is domestic use, and California water right law provides for urban areas to obtain and hold water rights in excess of current needs in anticipation of the growth of urban areas. Urban agencies are expecting that the water needs analysis and contract amounts will appropriately include historical use as well as anticipated future demand. In addition, the contractual right to renew is an important issue with respect to the ability of urban agencies to fund significant infrastructure improvements. These are issues that can be resolved administratively.

Urban agencies are concerned that the timing and resource commitment necessary for contract renewal are insufficient. An accelerated schedule has been proposed by Interior. However, substantial issues remain to be resolved and policy has not been developed in a number of areas. Such fundamental issues, such as the definition of historical use (which

must consider impacts of dry and wet weather cycles, plus conservation, and account for other supplies), is not complete and will require substantial time and effort to resolve. It will be very difficult to meet Interior's time schedule.

Furthermore, the PEIS, which will form the basis of contract renewals, is not yet completed. The PEIS is required to fully disclose the impacts of implementing the CVPIA. The information in the PEIS is vital to the decision-making process related to contract renewals. However, as discussed below, it is important to coordinate the PEIS with the CALFED process, since it is through CALFED that there is the potential for resolving many of the issues that will be raised in the PEIS.

A second part of the necessary environmental documentation is the disclosure of environmental impacts in service areas. This documentation, in addition to the PEIS, will fully disclose the impacts related to contract renewal. CCWD is prepared with regard to this important topic, as the CCWD Board of Directors has recently certified environmental documentation on a programmatic level for CCWD's Future Water Supply Implementation, including CVP contract renewal. This documentation will form the basis for the Record of Decision related to CCWD's contract renewal. In addition, CCWD is completing consultation with the U.S. Fish and Wildlife Service (USFWS) on the program level impacts of CCWD's Future Water Supply Implementation and on project specific elements of that program. However, the PEIS remains the linchpin for the whole CVP, and PEIS completion is necessary to disclose CVP-wide impacts related to the CVPIA.

2) Implementation of Section 3406(b)(2) of the CVPIA

Implementation of Section 3406(b)(2) [known as B2 or the 800,000 acre-feet] must be done in a way that does not disrupt CALFED and other restoration efforts. *The B2 issue is now embroiled in lawsuits. Key to the resolution of implementation of this section of the CVPIA is 1) the development of efficient and effective actions that will help fisheries and 2) the development of an accounting system to measure the water used.*

Unfortunately, the law is not entirely clear on the latter issue, referencing both a yield measurement based on the 1928-1934 hydrologic conditions, and management of the water in every year. The issue has become extremely contentious and threatens the consensus building of the CALFED process.

While settlement negotiations for the lawsuit may proceed, they may not result in a settlement that is satisfactory to all parties involved, particularly those who are not a party to the litigation. However, the Federal government has the means at its disposal to resolve this situation.

The Negotiated Rulemaking Act of 1990 provides the means to develop regulations through a formal negotiation process. This has been used successfully by EPA in a number of situations, including the establishment of drinking water standards. This "Reg

Neg" process can and should be used to resolve a number of issues, including the use and accounting of B2 water. The Negotiated Rulemaking Act provides a mechanism for negotiating consensus on Federal rules after a set of groundrules for the negotiation are established.

Intimately related to the B2 issue is State responsibility for meeting provisions of the Bay-Delta Accord and State participation in actions related to B2 water. Many of the actions to protect fisheries carried out under B2 require cooperation and participation of the State Water Project.

Up to now, participation by the State has been voluntary, although increasingly it is less willing. *A "Reg Neg" process for B2 water, which would necessarily include stakeholders from the State Water Project, could be used to resolve issues related to State participation and accounting for B2 water.* The essential goal that would be met with a "Reg Neg" process would be to assure that all interested parties have the opportunity to participate in these critical decision-making activities and have reason to commit themselves to an open negotiation process that will meet all needs.

3) Tiered pricing

Tiered pricing is not a "one-size-fits-all" affair for California water agencies. Tiered pricing was established as a means to encourage conservation and reduce water usage. However, given California's hydrology, tiered pricing often can be counter-productive.

In order to survive drought periods, it is necessary to store water in wet periods. Diverting more water in wet periods and less in dry can also benefit fisheries. Tiered pricing can work against such a strategy, however, for those agencies not using their full entitlements because it increases their costs when storing wet-year water to lessen the environmental impacts of dry year cutbacks.

For example, CCWD will be filling its Los Vaqueros Reservoir during wet periods when water quality is good, and using the stored water in dry periods when water quality is poor. This strategy is not only provides high quality water for CCWD's customers, it is good for the environment, as it reduces dry period stress on fisheries. The strategy also benefits the CVP as a whole, as it reduces CCWD's use of CVP water in dry periods.

Tiered pricing penalizes this strategy, however. Because CCWD is not using its full contractual entitlement, CCWD has not yet reached the higher brackets of the CVPIA tiered pricing system described in Section 3405(d). However, should CCWD increase its purchase of CVP water to fill its reservoir in wet periods and thereby reduce its diversions in dry periods, CCWD would be penalized financially under a tiered system.

This penalty would apply as well to a conjunctive use program or to any similar strategy to increase the reliability of water supplies including wet-year diversions to underground storage for dry-year use.

With the high fixed costs of the CVP, reducing use of CVP water merely results in higher water rates. In other words, when water usage drops, whether in response to tiered pricing or to conservation, CVP water rates simply rise to compensate for the lost revenue. The potential financial incentive that tiered pricing might have to CVP contractors to encourage conservation is therefore quickly lost.

Reclamation must implement tiered pricing carefully and in a way that does not discourage or penalize conjunctive use or other water storage programs.

4) CVPIA Restoration Fund management

The CVPIA Restoration Fund can and should be integrated with the CALFED process to ensure a coordinated program that provides the maximum benefit to the Delta environment and, as a consequence, to the Delta water users. At the same time, Congress should appropriate all of the funds collected. Currently, more money is being collected for the Restoration Fund than is being appropriated by the Congress. This fund was created because of the correct reasoning that substantial habitat restoration will be needed to improve fisheries. CVP contractors as a whole are very willing to pay a reasonable fee into the fund, by they also are concerned that they are paying into a fund at a higher rate than is being allocated for important projects.

At the same time, all stakeholders in the Bay-Delta system are rightly concerned that the funding be well coordinated and well spent. Clearly, the 1992 act recognized the need for contractors to fund many of the important restoration needs in the Central Valley and established a legitimate process to do so. But it did not envision the Restoration Fund as a general revenue source for the federal Treasury, which it has become in part by the reluctance to appropriate the full amount of annual collections for restoration programs.

5) Options under consideration to carry out the Trinity River provisions

While legislation has mandated the provision of water for the benefit of fisheries in the Trinity River, the proper solution must include habitat restoration. *The development of a solution for the Trinity River must not focus just on flows. We cannot overlook the important lessons already learned on other river systems, including the Mokelumne and Sacramento Rivers: habitat restoration is vital to fishery restoration and flow alone will not work.* It makes no sense to increase the number of spawning salmon returning to a river system if the fish have no suitable habitat when they return.

Furthermore, the efficacy of flows to improve fisheries can be limited if one is attempting to correct a myriad of problems with only that one tool. More flow will not negate the impacts of pollutants, habitat loss, introduced species or overfishing. If these other issues are also addressed, flows can be used efficiently to everyone's benefit. If not, increasing flows may simply have little or no measurable effect because of the losses of fish to other factors. The potential impacts of the Trinity River flows on the available water supplies in the Central Valley for CVP contractors and for the environmental flows needed in the

Sacramento River are significant. It is important that the water be used wisely and efficiently.

Finally, the CVPIA provided for increased flows in the Trinity River through 1996, at which time certain actions were to have taken place. These conditions have not been met. Resolution needs to be achieved with all interested parties as rapidly as possible.

Integration of the recommendations of the Trinity River study will be an important and potentially contentious issue for all stakeholders. *As with many difficult issues, this one comes with the opportunity to approach the problem and implement a solution in conjunction with CALFED. This may also be an opportunity to resolve issues with a "Reg Neg" process.* The bottom line is that the Trinity River cannot be dealt with as an entirely separate issue, without recognizing and addressing the impacts of any program on the Delta and the CVP.

6) CVPIA PEIS

While the PEIS is late, it should not be rushed to a conclusion in a way that jeopardizes CALFED. *The PEIS focuses on disclosing the impacts of implementing the CVPIA. As such, it is disclosing significant impacts to water users without providing a means to resolve those impacts or the problems of the Bay-Delta system. Without question, the CVPIA, along with the Endangered Species Act, was instrumental in triggering the development of the Bay-Delta Accord and in the formation of CALFED. It is the CALFED process that has the potential to lead to solutions to resolve many of the issues that will remain unresolved in the CVPIA PEIS.*

It is imperative that the focus now be placed on resolving these issues through the Record of Decision for CALFED. *The CALFED PEIS/EIR will not be sufficiently specific for the satisfaction of all parties. However, it should be broad enough to encompass the solutions that will be needed. CALFED should, between the release of the next Draft PEIS/EIR and the Record of Decision, provide the nexus for development of a long-term solution.* The Department of Interior should ensure that the CVPIA PEIS complements and coordinates with the CALFED process, and that it not disrupt it.

There are a number of issues that need resolution before the PEIS can be completed. Among these are impacts of implementation of CVPIA provisions on endangered species and the environmental baseline.

The PEIS is showing substantial potential impacts on winter run salmon, caused by extremely low carry-over storage in Shasta Reservoir. This may mean that the assumptions about many actions and the manner in which the CVPIA may be implemented could run afoul of the ESA protections the National Marine Fisheries Service (NMFS) has put in place for winter run salmon. This is an important issue that needs resolution.

The environmental baseline (No Action Alternative) makes certain assumptions that include implementation of what should be parts of the CVPIA. This means that impacts will be masked when a comparison is made with the basecase. This is an important issue for all stakeholders, since the masking of impacts will preclude the examination of mitigation for those impacts.

CVPIA: Time marches on. *There are a number of sections of the CVPIA which have sunset provisions. Among these are a number of sections related to water transfers (ref. Sections 3405(a)(1), subsections B, D, E, J and K) as well as other sections (ref. 3406(b)(23) the Trinity River flows) which are about to sunset or have already. At the time of the legislation, it was believed that many of these sections would be resolved by Reclamation and/or by State legislation on water transfers. It is unlikely that State legislation on water transfers will be in place by the end of September when the 3405 subsections sunset.* Some of these sections require findings to be made by the Secretary regarding impacts to third parties or to groundwater levels. However, those sunsetting provisions that require action by the Secretary of the Interior do not preclude the Secretary from making the same findings related to impacts.

7) CVPIA coordination with the CALFED Program.

The vision that the Congress had in passing the CVPIA contributed part of the driving force that lead to the historic Bay-Delta Accord in December, 1994, and the CALFED Bay-Delta Program. However, the torch has now been passed in large part to that joint Federal and State program to develop the means to restore not only anadromous fish and other endangered species but also all the fisheries in the Bay-Delta system. The CVP cannot alone restore the Delta. As CALFED moves forward, many of the provisions of CVPIA need to be integrated into the CALFED process and State Water Resources Control Board water rights process. CALFED should provide the nexus for resolving issues related to AFRP actions, the 800,000 acre-feet, impact related to endangered species and Federal and State sharing of costs.

Again, it is imperative that these issues be resolved before the Record of Decision is made for the CALFED PEIS/EIR. The Federal Negotiated Rulemaking Act should be seriously considered as a basis for negotiations to ensure a timely and fair decision that meets the interests of all parties.

Exhibit 1

CCWD OPERATIONS AND FACILITIES

The Contra Costa Water District ("CCWD") serves approximately 400,000 people throughout north-central and east Contra Costa County. Its clients also include 10 major industries, 36 smaller industries and businesses, and 50 agricultural users. CCWD operates raw water distribution facilities, water treatment plants, and treated water distribution facilities. CCWD supplies raw and treated water to Antioch, Concord, Diablo Water District (serving Oakley), Pittsburg, Southern California Water Company (serving Bay Point), Martinez, and parts of Pleasant Hill and Walnut Creek.

The treated water service area for CCWD encompasses all or part of the cities of Concord, Clayton, Clyde, Pleasant Hill, Walnut Creek, Martinez, and Port Costa. Treated water for this service area is provided from the District's Bollman Water Treatment Plant in Concord. The Bollman facility is a 75 MGD conventional plant and is currently being upgraded to include intermediate ozonation. CCWD also supplies treated water to the Diablo Water District ("DWD"), which serves customers in Oakley from a plant jointly owned by CCWD and DWD. The Randall-Bold Water Treatment Plant is a 40 MGD direct/deep-bed filtration plant and utilizes both pre- and post-ozonation to provide a high quality drinking water to the customers in its service area. CCWD is currently wheeling and treating water for the City of Brentwood under a short-term interim agreement.

CCWD is entirely dependent on the Delta for its water supply. The Contra Costa Canal and the recently completed Los Vaqueros Project make up CCWD's principal water supply and delivery system. CCWD diverts unregulated flows and regulated flows from storage releases from Shasta, Folsom, and Clair Engle reservoirs into the Sacramento River as a contractor of the United States Bureau of Reclamation's ("Reclamation") Central Valley Project ("CVP"). Under Water Service Contract I75r-3401 (amended) with the Reclamation, CCWD can divert and re-divert up to 195,000 acre-feet annually ("AFA") of water from Rock Slough and the new Old River intake. Recently, CCWD has used between 125,000 and 140,000 AFA. CCWD can also divert up to 26,780 AFA of water from Mallard Slough under its own water rights (Water Rights License No.3167 and Permit No.19856). In addition, CCWD has an agreement with the East Contra Costa Irrigation District for the purchase of up to 8,000 acre-feet of water annually. The City of Antioch and Gaylord Container, both customers of the District, also have water rights permits to divert water from the Delta.

CCWD has obtained its water supply from the Delta since 1940. Delta water is subject to large variations in salinity and mineral concentrations and this water supply has made CCWD and its customers vulnerable to any man-made or natural sources that could degrade Delta water quality. Water quality changes in Delta water are noticeable to those who drink the water or use the water for commercial and industrial processes. Degradation in water quality is objectionable to many CCWD customers, costly to all residential and industrial users, and a health risk for some individuals. The most recent

federal drinking water regulations promulgated in December 1998 impose stringent limits on disinfection by-products in treated water. To ensure that the bromate and the total trihalomethanes (the principal disinfection by-products) standards are met, municipal water agencies need to minimize the bromide level in source water. Bromide level is directly proportional to the chloride concentration in Delta water. Degradation of Delta water quality impairs the beneficial uses of water supplied by CCWD to its customers.

Contra Costa Water District is committed to supplying its customers with the highest quality water practicable and providing all reasonable protection of the supply from any known or potential source of hazardous contamination. CCWD Resolution No. 88-45 states in part that:

> "CCWD is committed to reducing the concentration of sodium and chloride in the District's water, thereby reducing household and landscape irrigation concerns and industrial and manufacturing costs caused by the fluctuating sodium and chloride level of CCWD's Delta source...."

In May 1987, CCWD's Board of Directors adopted water quality objectives for water distributed within its service area. The acceptable concentration levels for sodium and chloride were established at 50 milligrams per liter (mg/l) and 65 mg/l, respectively. In 1988, the voter-constituents of CCWD approved the issuance of bonds to finance a $450 million water quality and reliability project known as the Los Vaqueros Project. The primary purposes of the Los Vaqueros Project are to improve the quality of water supplied to CCWD customers and minimize seasonal quality changes, and to improve the reliability of the emergency water supply available to CCWD. The Los Vaqueros Project consists of a reservoir with 100,000 acre-feet of storage, a new point of diversion (at Old River south of the Highway 4 crossing) which operates in conjunction with the current Rock Slough diversion point, associated water conveyance and delivery facilities, pumping plants, and other facilities.

On June 2, 1994, the State Water Resources Control Board issued Decision 1629 which gives CCWD additional rights to divert and store water for beneficial uses. The State Board subsequently issued Water Rights Permits No. 20749 and 20750 for filling Los Vaqueros Reservoir from the new intake at Old River near Highway 4 and diversion and storage of the water of Kellogg Creek. These rights are in addition to the contractual rights to divert and store water furnished through the CVP. Construction of the reservoir began in September 1994 and was completed in January 1998. Diversion from the Old River intake for delivery to CCWD's service area began in the summer of 1997. On January 28, 1999, the first filling of Los Vaqueros Reservoir to 100,000 acre-feet was completed. Up to 95,850 AFA may be diverted for storage between November 1 of each year to June 30 of the succeeding year under Water Rights Permit No. 20749.

A key to successful performance of the Los Vaqueros Project is the District's ability to fill and continue to refill the reservoir from Old River with high quality water, and to use that water for blending when salinity at the District's Delta intakes exceed the 65 mg/L chloride goal. Any increase in Delta salinity caused by new Bay-Delta projects will

increase the demand on blending water from the reservoir while at the same time reducing the availability of high quality water for refilling. The District and its 400,000 customers will be impacted through higher pumping costs to replace the extra blending water that is released and through the additional treatment costs, increased corrosion and health effects of delivering higher salinity water.

Mr. DOOLITTLE. Our next witness is Mr. Barry Nelson.

STATEMENT OF BARRY NELSON, SENIOR FELLOW, SAVE THE SAN FRANCISCO BAY ASSOCIATION, SAN FRANCISCO, CALIFORNIA

Mr. BARRY NELSON. Thank you, Mr. Chairman, members of the Subcommittee. My name is Barry Nelson, and I am a Senior Fellow with Save the Bay. I've been active in the CVPIA since its inception and also am very active in the CALFED process.

I would like to summarize a few points in my written testimony and then pick up a few threads that we have heard earlier today that link CVPIA and CALFED. The CVPIA is a very ambitious piece of legislation, and it's certainly—and implementing such far-reaching pieces of legislation takes time. This Act, however, is taking more time certainly than we thought it would. But the CVPIA was passed because it would strengthen, we believe, the State's economy and environment. We think that's proving to be the case.

We also think that the CVPIA—that the untold story of the CVPIA is that, in some areas, it's generating substantial benefits for multiple interests and that many of those benefits in particular are for the agricultural community.

I would like to summarize briefly five points in my written testimony, then pick up another point.

The first is that the CVPIA we believe laid the groundwork both for the Bay-Delta Accord and for the CALFED Bay-Delta Program. Without the CVPIA, frankly, we don't see how those two efforts would have come together, and that together those three very important processes really are succeeding in changing the way California addresses water and environmental issues and manages both of those problems. It's an extremely encouraging development.

The second is that, despite a great deal of contention regarding particularly (b)(2) but some other members—some other provisions of the CALFED, the CVPIA program, a tremendous amount of progress is being made in the CALFED ecosystem, the CVPIA—I'm sorry, Ecosystem Restoration Program. And to give two examples of that, first, in implementing the CVPIA restoration fund we've seen some substantial contributions that some other members of earlier panels have discussed. But I would like to emphasize here that many of those expenditures have benefited far more than the environment. There have been substantial beneficiaries in the agricultural community and particularly in the power community. So there really have been multiple benefits from the CVPIA restoration funds.

Progress, unfortunately, has been much slower on implementing (b)(2), 3406(b)(2), the 800,000 acre foot provision. We have finally a week ago started seeing some of the (b)(2) water implemented in the Delta for Delta measures. We think this is just a start. We think, frankly, that Interior's plans to date don't meet the requirements of the law or the requirements of the recent Federal court decision in Fresno. But we have at least begun implementation now of 3406(b)(2).

Third, there are some sections of the CVPIA that were originally seen as controversial and were being described as theoretical. And some of those areas are still controversial, areas such as land re-

tirement and transfers, but what I think has changed in the last six and a half years is that many of those areas are now being adopted on the ground. There's still a policy debate going on, but if you look at what's happening on the ground we're seeing that the ideas in the CVPIA are being embraced on the ground today.

Two examples of that: Water transfers. There's been a lot of concern from the agricultural community regarding the potential impacts of water transfers on agriculture. The flip side of that is that the lessons of the six and a half years have shown benefits to agriculture from transfers. The Bureau, since the CVPIA was passed, has approved 1.57 million acres of transfers; and the vast majority of those have been ag water districts to ag water districts. And within districts there have been many, many additional examples of those kinds of transfers.

The other example is land retirement, where there's now an ambitious land retirement program within agriculture itself.

I see that my yellow light is flashing. I'll move on to my fourth point, and that is the connection between the Trinity River and CALFED. What we're seeing there is that it's easy to promise environmental benefits from new water facilities, and that was done 40 years ago on the Trinity. It's very difficult to make those benefits real. We need to look at the lesson of the Trinity and make sure we don't make that same mistake again with regard to CALFED.

My fifth point for my testimony is with regard to the role of Federal funding. The CVPIA provided water and funding, and a lot of that funding—not all of it—but a lot of that funding was user dollars, user fees for ecosystem restoration. Proposition 204 and Federal funding have brought substantial public resources into that debate, and they're critical to enable us to keep moving forward, not just for ecosystem restoration but water supply as well. And the next step in that is for CALFED to integrate those and bring in user fees for the non-CVP water users in the State who currently aren't contributing to the environmental solutions out there.

Just very briefly to pick up a thread, Mr. Chairman, that some other panelists and you have discussed, and that is the questions regarding measures of success, performance objectives, specific goals, fiscal accountability in the ecosystem program. There's been a lot of discussion of that. I think it's an appropriate discussion.

What I would like to suggest is that we need to have that same discussion with regard to CALFED's water supply reliability program and that the lessons of the ecosystem program are very applicable to water supply. And, frankly, when it comes to measurable objectives and so forth, the ecosystem program is ahead of water supply reliability. And we think what CALFED needs to move towards is not simply a gross measure of additional water developed—and I would agree with Peter Gleick's comments regarding that—but to measure cost effectiveness, real benefits to water users not just in acre foot terms but real benefits to water users and compatibility with an ecosystem restoration program. We think if we can get the same kind of scrutiny for the water supply reliability program that we have seen for the ecosystem program, we think CALFED can make a tremendous amount of progress.

And I would like to close with just one general observation, and that is that the premise of the CVPIA was that the CVP has been

in place for 50 years and that since California's water needs have changed dramatically during that time that the operating rules of the CVP needed to change.

I think what we've seen in the last six and a half years, not just with CVPIA but Bay-Delta Accord and CALFED as well, is that that premise is absolutely true and we are changing the way we do business in California.

Thank you, Mr. Chairman.

Mr. DOOLITTLE. Thank you.

[The prepared statement of Mr. Nelson follows:]

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Before the United States House of Representatives
Committee on Resources
Subcommittee on Water and Power

Testimony of Barry Nelson, Senior Fellow

REGARDING IMPLEMENTATION OF THE CENTRAL VALLEY PROJECT IMPROVEMENT ACT AND CENTRAL VALLEY WATER MANAGEMENT ISSUES

Washington, DC
May 20, 1999

SAVE THE BAY

Save San Francisco Bay Association

Introduction

Chairman Doolittle and members of the subcommittee, thank you for the opportunity to appear before you today. My name is Barry Nelson and I am a Senior Fellow with Save The Bay, a 15,000 member organization dedicated to the preservation and restoration of the West Coast's largest estuary. I also served as the chair of the campaign to pass and implement the Central Valley Project Improvement Act. I am pleased to appear before you today regarding the Act's implementation, and the role it plays in pointing the way towards improved water management and environmental health in the Central Valley and throughout California.

The CVPIA is an ambitious piece of legislation. Implementing such a far-reaching act takes time. Frankly, it is taking far longer than we expected. In some areas, we are still working hard to ensure that the promise of the CVPIA is fulfilled. However, it is now possible to provide an overview of the implementation of the CVPIA and to evaluate the effect that it is having on water management in the State.

When President Bush signed the CVPIA six and a half years ago, it was supported by a remarkably diverse coalition that included most of California. However, it was, as you know, strongly opposed by interests in the San Joaquin Valley. These interests were concerned that provisions of the CVPIA could harm the agricultural economy.

The CVPIA was passed because it would help strengthen the state's economy and environment. There are now signs that the CVPIA has also helped point the way towards a more sustainable agricultural economy as well.

In a large number of areas, concepts promoted by the CVPIA have become broadly accepted. Much has been made about the polarized positions regarding issues such as the implementation of Section 3406(b)(2). However, this and other sections of the CVPIA have also brought Californians together to address environmental and water management problems. Many of the concepts in the CVP have become part of the landscape in California.

In this testimony, I will address some, but by no means all, of the major elements of the CVPIA and discuss briefly their impact on water management and on the CALFED program.

In reviewing the implementation of the CVPIA to date, a number of general conclusions are clear:

1. The CVPIA has served as the foundation for both the Bay-Delta Accord and the CALFED Bay-Delta Program.

2. Despite sustained opposition to some provisions from some interests, implementation of the CVPIA environmental restoration program is moving forward and providing significant environmental benefits.

3. Interior's current approach to the implementation of Section 3406(b)(2) is not adequate to meet CVPIA and federal court requirements.

4. Some sections of the CVPIA which were originally seen as controversial, such as land retirement and transfers, are being broadly accepted on-the-ground and are providing benefits to agricultural water users and the environment.

5. The broad array of water management tools which have emerged during the extensive discussions regarding CVPIA implementation, and the CVPIA's promotion of credible economic analysis, have helped point the way for CALFED and water management throughout the state.

6. Controversy regarding the implementation of required Trinity River restoration actions has raised serious questions regarding claims for environmental benefits from the construction of new or expanded surface storage facilities in the Central Valley.

7. Despite progress to date, many of the CVPIA's provisions remain at best partially implemented.

The CVPIA is the Foundation for the Bay-Delta Accord and CALFED

Some water interests have claimed that the Bay-Delta Accord and CALFED present a preferable approach to resolving water issues, in comparison with the legislative approach of the CVPIA. However, without the CVPIA, it is questionable that both the Bay-Delta Accord and CALFED would have come to pass.

At its core, the Bay-Delta Accord did two things. It led to stronger standards to protect the Bay-Delta estuary from the impacts of diversions and it set the stage for the long-term CALFED process. This was not the first attempt to replace the inadequate 1976 Bay-Delta standards. Twice before the State Water Resources Control Board had attempted to set new Bay-Delta standards and both times San Joaquin Valley agricultural interests successfully lobbied the Governor (both Governors Deukmejian and Wilson) to withdraw the proposed standards. In the Bay-Delta Accord some of these same agricultural interests supported stronger standards. The CVP contractors in the San Luis-Delta Mendota Water Authority were leaders in this effort. Why did this third effort succeed? And why did CVP agricultural contractors support these standards? The reason, in large part, is the CVPIA.

The CVPIA dedicated water to the protection of the Delta and anadromous fish. Thus, CVP contractors knew that they would be providing added Bay-Delta protections. By supporting new standards, CVP contractors were working to ensure that all water users would contribute equitably to this protection and restoration effort. The CVPIA provided the missing factor to reach closure on new Bay-Delta standards.

The Accord also set the stage for the CALFED process, which began formally just a few months later. Again, without the CVPIA, it is not clear that this step forward would have been possible. Prior to the CVPIA, the Bureau of Reclamation resisted taking actions to protect fish and wildlife, going so far as to claim that the Central Valley Project was not authorized to comply with the Endangered Species Act. The CALFED program, however,

establishes ecosystem restoration and improving water supply reliability as the twin stars around which the entire program revolves. What is responsible for this evolution in the attitude of the Bureau? The largest single factor was the CVPIA's establishment of environmental protection as a project purpose of the CVP. This action both eliminated the Bureau's previous resistance and strengthened the Fish and Wildlife Service. The growing partnership between these two agencies is a significant part of the federal involvement in CALFED.

In short, the CVPIA was one of the most important factors leading to the Bay-Delta Accord and the establishment of the CALFED program. Likewise, any weakening in the CVPIA's programs would threaten the foundation upon which Californians have built the progress seen over the past several years.

Many of the CVPIA's Provisions are Becoming Common Practice

At the time of its passage, some provisions of the CVPIA were seen as controversial. Some of them still are. However, when examined closely it is clear that the direction established by the CVPIA is being adopted on the ground, even by many of the Act's critics.

Water Transfers. During the debate over the CVPIA, some in the agricultural community feared that the CVPIA's facilitation of a more active water market would threaten the long term health of the agricultural community. Signs along freeways urging people to stop the CVPIA and prevent the Central Valley from becoming another Owens Valley. We now have six and a half years of experience in implementing the CVPIA's water transfer program. And the results have been much to the reverse of the fears in the agricultural community.

Since the CVPIA was passed, the Department of Interior has approved 1.57 million acre-feet of water transfers, from a high of 361,000 acre-feet in 1993 to a low of 133,000 in the extremely wet 1998 water year. The vast majority of these transfers have been agricultural water district to agricultural water district transfers. Even more transfers have taken place within individual water districts. The Bureau of Reclamation also helped pay for the creation of an on-line water market that has facilitated hundreds of individual transfers. Water transfers have long been a part of the management of water in agriculture. However, such transfers are expanding dramatically. Also, this new on-line system has allowed smaller family farmers to compete in the water transfer market – an area formerly dominated by larger corporate farms.

The CVPIA transfer program is providing an additional economic incentive for farmers to increase the efficiency of their water use. It has also provided an alternative source of supply for water users seeking to supplement contract supplies. To date, most of the agriculture to agriculture transfers have been South of the Delta. It appears that there is much more to be gained as this trend expands valley-wide.

This year also saw a remarkable development. In discussions with the Bureau of Reclamation, the Metropolitan Water District of Southern California indicated that it had water that it would make available for sale for CVP agricultural water users. This transfer did not occur. However, it has shown that water transfers come in a variety of types and can offer more benefits than some had expected.

To date, there have not been many agricultural to urban water transfers. However, we understand that at least one such out-of-basin transfer is now nearing final approval. There are several reasons for the delay in these agricultural to urban transfers. The first is the fact that a significant amount of time is needed to overcome reluctance within agricultural communities to these transfers, to address legitimate concerns and to assure that these transfers truly benefit all involved. The second is that some early proposals for water transfers did not meet the requirements of the CVPIA. They should have been, and were, rejected. The third reason is that it has been raining. This extraordinary series of wet years has provided an opportunity to lay the groundwork for a more robust transfers market without the pressure of dry conditions.

Water transfers have also been used to provide environmental benefits. These include CVPIA-required Level 4 wildlife refuge water supplies, the Vernalis Adaptive Management Program and other in-stream flows. Although we have some serious concerns about the VAMP, it is clear that water purchases can provide real environmental benefits and that such purchases allow for early intervention to provide flows needed for restoration. In the absence of such an alternative, it is likely that such flows would eventually be required, and would not be compensated, by the Endangered Species Act.

The lessons of the past several years have not been lost on CALFED, which is planning to make increased water transfers a cornerstone of the CALFED preferred alternative. Unfortunately, the CALFED transfer program is not well developed. CALFED must, prepare a far more comprehensive transfers program, if this tool is to provide maximum benefits for all water interests.

Land Fallowing. Land fallowing has also been a controversial provision in the CVPIA. It has attracted opposition from some of the CVPIA's opponents as being counter to the interests of agriculture. That, however, has changed. The attached clippings from Central Valley newspapers reveal several interesting developments. The first is that the owners of 44,000 acres of selenium-tainted agricultural land have offered their land for sale to the Bureau of Reclamation. This editorial also suggests that the Westlands Water District has obstructed the Bureau of Reclamation's land retirement program, despite the fact that the Bureau's program is preferred by these land owners. The second article reveals that Westlands has itself created a $35 million land retirement fund. In this article, Al Dingle, the president of the Westlands Board states that "The environmental community has said for years that we should retire land and deal with water issues. We're basically saying that , to some degree, they're right."

Temporary land fallowing also provides an important management tool. For many reasons, temporary fallowing has long been a strategy of agricultural land managers. It is now clear that water supply driven fallowing is a growing tool. For example, growers in the Westlands Water District have been moving towards more high-value, permanent crops. These crops require a much higher degree of water supply reliability. As these crops have gone in, fallowing patterns have shown that land fallowing consistently focuses on lower value, annual crops. Whether this is made possible because of common land ownership or water transfers, these land fallowing arrangements are helping to support higher value agriculture on the West side of the Valley.

We remain frustrated that the Interior land retirement program is moving so slowly. However, these developments demonstrate that land fallowing has gone from the realm of the theoretical to on-the-ground acceptance within agriculture. We hope that CALFED will modify its approach to land fallowing to reflect these developments.

Section 3406(b)(2). This section of the CVPIA has been by far the most controversial since its passage and it remain so today. We believe that Congress was clear in adopting this provision. However, this clarity has not deterred its opponents' sustained attacks. In the past, the federal courts have rejected an attempt to prevent implementation of this section. A federal court in Fresno did so again just last Friday. CVP contractors had sought, and obtained, a Temporary Restraining Order blocking implementation of (b)(2). Two weeks ago, that TRO expired. Last Friday, the court issued an order which requires Interior to dedicate and manage no more *and no less* than 800,000 acre-feet of CVP yield to (b)(2) purposes this year.

Starting last Friday, Interior began implementation of the first of the Delta actions required by the November 20, 1997 (b)(2) decision. We believe that the CVPIA and the recent court ruling require additional environmental restoration actions under (b)(2). Interior has not selected an official accounting strategy for tracking (b)(2) management, however, one alternative suggests that the actions required to date could require as little as 150,000 acre feet of (b)(2) water this year. We do not believe that the CVPIA's ambitious restoration goals will be achieved with such an inadequate approach to (b)(2) implementation.

The recent federal court ruling offers some hope, however, that the range of disagreements regarding (b)(2) may be narrowing. The court required Interior to manage no more and no less than 800,000 acre feet of yield for (b)(2) purposes each year. It required Interior to select an accounting system and found that the selection of this system should be left to Interior's discretion. It also found that a five-year finding that the environment does not need additional (b)(2) actions is inappropriate. All of these findings could avoid repetitions of past disagreements.

The clearest consequence of the long delay in (b)(2) implementation, is that all of the remaining salmonids in the Central Valley are now proposed for listing under the state or federal Endangered Species Acts. Congress intended (b)(2) to help prevent the need for additional listings. Unfortunately, through their successful campaign for delays in (b)(2) implementation, some Central Valley agricultural interests have dramatically increased the likelihood of additional listings.

If there is a silver lining to the extraordinary delays in implementing (b)(2), it is in the fact that the agricultural community has had an ample amount of time to prepare for its implementation. The continuing remarkable health of agriculture, along with the many alternative water supply management tools which are discussed elsewhere in this testimony, suggest that the CVPIA's overall program, including (b)(2) will, when fully implemented, serve to strengthen the entire state's economy and environment.

The Environmental Water Account Concept. One aspect of Section 3406(b)(2) is drawing broad support in the CALFED context. This is the concept of creating an Environmental

Water Account (EWA). Although there have been several specific suggestions for an EWA, in essence it is intended to provide an alternative to the less flexible regulatory requirements of the Endangered Species Act and to provide a positive, flexible tool to manage water to help restore the Bay-Delta environment. There are four necessary components of an EWA: a block of water clearly dedicated to environmental restoration; a flexible, adaptive management approach which allows decisions to be made in real time; a clear baseline of required protection and restoration actions and; the ability to store water for use when it is needed.

The CVPIA contains all of these elements. The Act dedicates a block of water to the environment. It requires a flexible, adaptive ecosystem-restoration driven approach to the management of this water. The CVPIA clearly indicated that this tool is intended to supplement the existing regulatory baseline. Finally, the CVPIA authorizes the storage of (b)(2) water for use in the future. In a year such as the current one, where the currently proposed (b)(2) actions fall far short of the CVPIA's 800,000 acre-feet of water, 1999 could provide an ideal year to test whether the concept of an EWA is viable. We have recommended that Interior investigate this tool as an option to comply with the District Court's order and to reduce pressure for agriculture to the environment transfers in the coming water year, which is likely to be drier.

Trinity River. The CVPIA is the latest of several legislative attempts to repair the damage which the Trinity division of the CVP has caused to the ecosystem of the Trinity River, along with the fishing industry, recreation and local communities and economies. I understand that the Trinity River flow study is about to be released. I will not comment on the substance of the Trinity River process. It is, however, appropriate to comment on the connection between the Trinity River and new facilities proposed in the Central Valley.

Nearly 40 years ago, the Department of Interior made commitments regarding the operation of these facilities on the Trinity River. When the Secretary of Interior presented his report to Congress in 1952, he stated that the project would "improve the fishery" and "insure the full protection and development of these natural resources". Unlike the rest of the CVP, the Trinity division was specifically authorized, and in part justified, for the protection of natural resources, particularly anadromous fish. Despite these assurances, the Trinity River has suffered dramatically due to the operation of these CVP facilities.

Now, after forty years of broken promises, Interior may be contemplating actions that could restore some of this damage in the Trinity basin. The reason this lesson is so instructive in the CALFED context is that some water interests are now calling for new water facilities in the Central Valley and are, once again, promising that these facilities will benefit fish and wildlife. The history of the Trinity River demonstrates that such assurances are often violated.

We urge the public and Congress to listen closely to those who are critical of needed actions to restore the Trinity River. These voices are asking Interior to continue to violate promises made regarding protection and enhancement of the environment nearly half a century ago. In the CALFED context, some of these same voices are asking the public to pay for more facilities in the Central Valley, claiming that these facilities will benefit fish and wildlife. The subject of assurances is often seen as abstract in CALFED. The Trinity River demonstrates

how central adequate assurances are to achieving environmental protection and restoration, particularly from new water facilities.

Economic Analysis. The development of water projects in California has been characterized by a near-exclusive reliance on engineering and a near absence of sound economic analysis. One underlying thesis of the CVPIA is that prudent, sound economic analysis, applied to the challenges of today is more likely to lead to positive environmental results than the approaches used in the past. At the same time, the CVPIA recognizes the legitimate needs of urban and agricultural communities for a reliable water supply. Therefore, the CVPIA called for the preparation of a Least-Cost CVP Yield Increase Plan. This document, prepared in 1995, marked perhaps the first time that the Department of Interior has prepared an economically credible document that outlined the wide range of tools which are available to urban and agricultural water users to increase their water supply reliability. This document has been valuable in helping CALFED begin a similar, but far more ambitious, economic evaluation of water management alternatives. Such an analysis is legally required before some of the specific tools contemplated by CALFED could move forward.

Both of these analyses reveal that new or expanded surface storage facilities are among the most expensive water management options available. The CVPIA Least-Cost Yield Plan indicates that water from such new and expanded dams could cost from $300 to $3,000 an acre foot. CALFED's economic analysis is leading to similar conclusions, and suggests that the low end of this range is probably too optimistic. The less expensive yield options for new surface storage facilities assume project operations which could significantly harm natural resources and worsen threats to endangered species and potentially listed species. This analysis justifies the CVPIA's emphasis on less expensive and more environmentally benign water management choices, such as water conservation and transfers. It also calls into question proposals for new surface storage facilities.

The current water allocation and pricing policies of some water districts provide a clear message regarding the continuing need for realistic economic analyses of water management options. For example, this year, the cost of the four acre-feet per acre base allocation for the Modesto Irrigation District is $18.30 per acre -- just under $4.60 per acre-foot. In fact, MID does not use volumetric pricing. Users pay the same regardless of water use, as long as they remain under the generous base allocation. This year both the Turlock and Modesto Irrigation Districts are offering additional water to growers at $10 to $15 per acre-foot -- above their four foot per acre base allocations. Additional groundwater in MID costs $20.15 per acre-foot.

It is difficult to imagine that many water conservation programs would be cost-effective given these water costs. However, in areas where water supplies are very inexpensive, water conservation still offers potential environmental and water supply benefits. Achieving these savings, however, is not easy. One approach is to impose water conservation requirements which go far beyond those in the CVPIA. Another is to provide economic incentives, through mechanisms such as transfers, to facilitate conservation, as well as to help meet environmental or consumptive water needs elsewhere. Such water transfers provide the promise of real benefits for the environment and other water users.

In a state where water is still selling for under $5.00 per acre-foot, and where some agricultural interests object to costs of $30.00 per acre-foot, new dams that would develop water costing hundreds or thousands of dollars per acre-foot would appear to be an unwise economic and environmental investment.

The Water Management "Toolbox". During the (b)(2) negotiations, the Department of Interior, with the strong support of the environmental community, convened a series of discussions regarding water management tools that are usually referred to as the "Toolbox". These discussions are reflected in the November 20 document. Many of the tools that are addressed in this document are in active discussion in CALFED and other forums. The environmental community has also built on these discussions to prepare a "Blueprint for an Environmentally and Economically Sound CALFED Water Management Program". This document provides more detailed recommendations than those provided by any other stakeholder group regarding water management tools which can help meet legitimate water needs in an environmentally and economically responsible manner.

Restoration Fund. Given the tremendous expertise Nature Conservancy, I urge you to read Steve McCormick's testimony carefully regarding the CALFED and CVPIA ecosystem restoration programs. I will offer only a few comments regarding this important provision of the CVPIA.

First, the benefits of this program are dramatic. Through a broad range of activities, the CVPIA restoration fund is supporting a truly ecosystem-based approach to restoring the health of the Bay-Delta ecosystem and mitigating the damage caused by the CVP.

Second, the Restoration Fund has produced dramatic benefits for other stakeholders. At least fifty percent of the funding spent from 1994 to 1998 went to projects such as fish screens and temperature control devices that provided significant benefits to water and power users.

Third, the Restoration Fund has also helped leverage significant public funds, through appropriations to the Bureau, to CALFED and through Proposition 204 in California. A reauthorization of the federal Bay-Delta funding authorization is particularly needed.

Fourth, we share several concerns regarding funding with CVP contractors. We agree that funds collected should always be fully appropriated to the Fund. We also agree that many other water users are not providing funding for Bay-Delta ecosystem restoration. The latter concern should be resolved by CALFED's funding package for ecosystem restoration.

Fifth, we also share with CVP contractors several recommendations regarding opportunities to strengthen the management of the Restoration Fund and improve coordination with CALFED.

The Restoration Fund Roundtable, particularly in its early years, demonstrated how much common interest there is in a well-funded and well-managed ecosystem restoration program. We hope that we can return to this more collegial approach.

San Joaquin River Consensus Talks. For fifty years, a portion of the San Joaquin River below Friant Dam has been dry. That dam caused the extinction of one of the state's largest salmon runs -- one of the mainstays of the commercial fishing industry. For the past decade controversy regarding the future of the San Joaquin River has steadily increased.

The CVPIA called for the preparation of the San Joaquin River Comprehensive Plan. Unfortunately, this plan is one of many parts of the CVPIA that has not been implemented. Interior has missed the 1996 deadline for the plan and has suspended activity on it. Interior should have completed this plan and the CVPIA's obligation remains in place. However, the CVPIA has led to some progress on the San Joaquin River. During the extensive process that led to the November 20, 1997 (b)(2) decision, negotiations began on a San Joaquin River riparian restoration program. This program has made steady progress by building agreement among agricultural and environmental and fishing interests. This is noteworthy indeed. The San Joaquin provision of the CVPIA was highly controversial, for reasons that I do not understand, because the CVPIA did not authorize the release of any water for environmental purposes from Friant Dam. However, the CVPIA implementation process has created a productive forum that is helping to address one of the state's most polarized environmental issues.

Environmental Benefits

Central Valley Wildlife Refuges and Wetlands. The earliest returns from the CVPIA's environmental restoration program are from the provision of water supply for wetlands and wildlife refuges in the Sacramento and San Joaquin Valleys. These wetlands represent 60 percent of the wetlands remaining in the Central Valley. These Central Valley wetlands support 60 percent of the Pacific Flyway's wintering waterfowl and 20 percent of the population for the entire continent.

Prior to the CVPIA, many of these wetland refuges, built in part to mitigate for the wetlands losses caused by the CVP, had inadequate water supplies to support functioning habitat. These poor habitat conditions contributed to the outbreak of diseases and declining waterfowl populations, as well as populations of other species dependent on these wetlands. However, as a direct result of the CVPIA, habitat values and wildlife populations have increased. Surveys in the San Joaquin Valley have found increases in both wetland food production and mid-September waterfowl use by up to 300 percent.

On-the-Ground and In-Stream Results. Finally, what counts regarding the CVPIA environmental restoration requirements are tangible on-the-ground and in-stream results. Together, the programs I have described above are providing significant benefits. They do not yet fulfill the promise of the CVPIA and they have been too slow in arriving, for reasons addressed elsewhere. However, it is clear that the tools provided by the CVPIA to achieve its ambitious restoration goals are beginning to reverse some of the downward trends in environmental health that helped lead Congress to pass the act. The testimony of the Natural Conservancy provides additional detail regarding these benefits.

Conclusion

Six and a half years after its passage, it is clear that CVPIA implementation is proceeding far more slowly than it should. This slow pace is, in large part, the result of a sustained campaign by California water interests who unsuccessfully opposed the act in Congress. But it is also clear that, in most areas, the CVPIA's programs are moving forward and providing tangible economic and environmental benefits.

The CVPIA is also providing valuable lessons for the CALFED program and for the future of water management in California. It is particularly instructive, for example, to note that the CVPIA Least-Cost Yield Plan does not include new surface storage facilities and that controversy regarding these facilities recently derailed a promising bond act in California. We believe that California now has many economically and environmentally superior alternatives. We also hope that this conflict will not continue to similarly, and unnecessarily, damage CALFED.

The premise of the CVPIA is that the needs of California have changed in the fifty years since CVP construction began and that the operation of the CVP must change to reflect those needs. The experience of the past six and a half years has clearly shown that this premise is correct and that although the new course which the CVPIA charted has not been smooth, it is sound.

Attachments
March 20, 1999 Fresno Bee article
May 6, 1999 Sacramento Bee editorial

BEE EDITORIALS

Mendota's water mess: Salty water underground is killing farmland

(Published May 6, 1999)

Kenneth Seibert's farmland is dying from the salty water that accumulates just below the soil. Every passing day he goes deeper into debt, with $350 in new interest added to the $2 million he already owes to banks. Government agencies sadly don't share Seibert's sense of urgency about finding a fair economic solution to one of the San Joaquin Valley's most complex resource problems -- what to do with the farms above the salty water that is accumulating under low-lying portions of the valley's west side.

Seibert began farming shortly after getting married in 1973, when he bought land two miles west of the Fresno County community of Mendota, halfway between Fresno and Interstate 5. Everything grew in high yields -- cotton, corn, alfalfa, sugar beets. He thought little about it when the Bureau of Reclamation in 1979 placed drains 12 feet under his soil to send his runoff containing various natural salts, including selenium, to a wildlife refuge named Kesterson.

The drains under Seibert's land, and that of mers on more than 40,000 other acres, turned Kesterson into a toxic killing ground with dead and deformed wildlife. The bureau plugged the drains in 1986; since then, water applied to the farmlands has had nowhere to go but down. Seibert's land sits at the base of the valley, so it captures underground runoff from upland neighbors to the west. Farmers just a few miles to the west still have vibrant land. Yet Seibert's water table has risen to the point that it has reached the root zone of his orchards, killing his 40 acres of cherries and 70 acres of pecans. He grows mostly a low-value crop, sugar beets. Their shallow roots don't reach the plant-killing water lurking just below.

The bureau has responded painfully slowly, sitting on 61 applications from farmers on 44,000 acres of poisoned land seeking to sell. At the current pace, Seibert could be years away from a sale to the federal government. His only alternative is to sell to the local water district, Westlands. But Westlands hasn't offered enough to lift Seibert from bankruptcy.

Seibert could likely sell his land for enough money to start anew if he could transfer its most valuable asset, a water contract with the Central Valley Project. But Westlands is short of water for its farmers in many years and has the political power to prevent Seibert's water supply from leaving the district. That's understandable, yet Westlands also seeks to buy Seibert's land, and its water, for less than Seibert could get on the open market. Is that fair? Is it fair that Westlands is even in this prickly situation, given that it was the Bureau of Reclamation that opened up this salty land for agriculture without a viable drainage plan?

This is a helpless situation for Seibert, a problem that won't be solved easily. Yet it must be addressed with the sense of urgency that reflects the crisis that it has become.

Westlands seeks more land
Bond sale aims to boost its water supply.

By Jim Steinberg
The Fresno Bee
(Published March 20, 1999)

The sprawling Westlands Water District, confronting chronic supply shortages, is selling $35 million in bonds to buy land and the water rights that go with it to irrigate west Valley crops. The district board voted unanimously on the plan this week. Directors passed a resolution instructing Westlands General Manager David L. Orth to prepare documents for the bonds, technically certificates of participation secured by district revenue. The money raised will finance a four-part plan to:

- Reimburse about $2.1 million to the district's reserves for land it bought last year.

- Raise roughly $6.4 million to buy part of the Mercy Springs Water District's share of water from the Central Valley Project.

- Generate about $5.75 million to pay for Westlands' ongoing commitment to the U.S. Bureau of Reclamation's land retirement program.

- Raise about $15.4 million to buy from landowners who want to sell Westlands their land or water.

Orth called the resolution "the first piece of the puzzle in getting the funds to acquire a reliable and affordable water supply for our farmers."

Westlands' Land and Water Acquisition Program attempts to deal with "continual uncertainty" over the water it receives from the federal Central Valley Project, Orth said. The Central Valley Project Improvement Act of 1992 diverted 800,000 acre-feet from the CVP to protect fish, wildlife and habitat, further squeezing supplies open to Westlands.

Decades of argument over what is economically and environmentally fair have characterized statewide irrigation politics and Westlands' conduct in particular.

C.A. "Al" Dingle, Westlands board president, said Friday that the district faces long-term "irrigation deficits," water applied to crops exceeding the annual supply to the district. The deficit was a fact even before the improvement act diverted 800,000 acre-feet. One acre-foot is about 326,000 gallons, an 18-month supply for a family of four.

"Now the ongoing deficit is "exacerbated by the federal government," he said, alluding to the improvement act passed by Congress. "We are trying to do what we can to stay in business."

It is the first time that Westlands has sought to retire its land as a way to use its water on other land.

't is the best option under chronic deficit circumstances," Dingle said.

Orth said that environmentalists, frequent critics of Westlands irrigation policies and political power, should accept the new strategy:

"You are going to have a hard time finding someone opposed to it on the merits. The environmental community has said for years that we should retire land and deal with water issues. We're basically saying that, to some degree, they're right."

The district will buy between 15,000 and 30,000 acres, depending on land sale prices.

Even in years when Westlands receives its full entitlement, 1.15 million acre-feet, from the Central Valley Project, Orth said, it is short by about 200,000 acre-feet from meeting growers' irrigation needs. The district has bought more than 1.4 million acre-feet of short-term water since 1989.

The district faces payments of about $2.1 million per year for 30 years for the debt service obligation on the bonds. Farmers who receive the new water will repay that sum.

Westlands, one of the larger irrigation districts in the country, covers more than 600,000 acres in western Fresno and Kings counties. Farmers in the district produce more than 50 crops worth almost $750 million per year.

Lloyd Carter, president of the California Save Our Streams Council and a critic of Westlands irrigation practices, approved the idea behind the district's new program:

"You take the worst land out of production, and save farmland. You take water from idle land to shore up good land. That's OK. I support idling bad land. The question becomes what happens to that water. I think Westlands has somewhat of a meritorious argument."

Carter said he would be concerned if Westlands took water it received with the land to buy and sell that water to eager buyers in Southern California. He also urged that use of the water should not worsen the problem of brackish and contaminated water fouling land and underground water supplies.

Westlands should not become "a water marketing middleman selling taxpayer-subsidized water, Carter said. The district should spend money to modernize irrigation with underground drip and other techniques, he said.

Gary Bobker, program director for the Bay Trust in San Rafael, agreed that taking land out of agricultural production is key.

It also fits with his group's goal of restoring San Francisco Bay, reducing its salinity by increasing the inflow of fresh water.

Mr. DOOLITTLE. Our next witness will be the Honorable Merv George, Jr.

Mr. George.

STATEMENT OF HON. MERV GEORGE, JR., CHAIRMAN, HOOPA TRIBE, HOOPA, CALIFORNIA

Mr. GEORGE. Thank you, Mr. Chairman and members of the Subcommittee. On behalf of the entire Hoopa Valley Indian Reservation it's a pleasure to be here before you today.

As it was stated, my name is Merv George, Jr.; and I am the tribal chairman of the Hoopa Valley Tribe; and I am prepared to testify on the Trinity River.

The Hupa people have occupied the Hoopa Valley, the site of our reservation, since time immemorial. The Trinity River, which traverses the Hoopa Valley, is the lifeblood of our culture, religion and economy. Everything we are and do as a people is oriented to the Trinity River.

My testimony today is intended also to give voice to our friends and neighboring communities who more often than not have not—or who have been overlooked in the great debates over California's priceless water resources.

The Trinity River is the only source of imported water to the Central Valley. In 1955, Congress authorized construction of the Trinity River Division of the Central Valley Project. In order to protect the fish and wildlife of the Trinity River Basin, Congress specifically limited the Secretary's discretion to divert water to the Central Valley by requiring that in-basin flows needed for the Trinity River take precedence over uses to be served in the Central Valley.

Between 1964 and 1996, the Bureau of Reclamation diverted 31,780,400 acre feet of Trinity water to the Central Valley with devastating effects on Trinity River fish and wildlife. The river we had known for thousands of years transformed itself in less than a decade following completion of the Trinity River Division. Gone were its broad, braided channel with well-washed gravels for spawning. Gone were its pools, shallows, and shade for juvenile rearing. Gone were the velocity, volume and frequency of flows essential to fish migration and to maintain the dynamic equilibrium of a living river and its riparian ecology. And, more importantly, gone also are the days when my people could fish as they always have without the threat of their harvest being reduced because of an endangered species listing.

None of this was intended or foreseen by project planners. The politicians promised that not a bucket of water needed in the Trinity River basin would be exported to the Central Valley. Others testified of their expectation that construction of the Trinity River Division would actually improve the Trinity River fishery and that the hatchery built at the base of Lewiston Dam would fully mitigate the loss of upstream habitat.

Today, most Trinity River fish populations are either listed, proposed for listing, or under status review for listing under the Endangered Species Act. For example, the Trinity River coho salmon was listed as a threatened species in May of 1997. The Trinity River steelhead is a candidate for listing, and the Trinity River chi-

nook is under status for review. From my tribe's perspective, extinction of fish species or their mere recovery to some minimum population is not an option.

The Hoopa Valley tribe has worked closely with the Department of the Interior on the Trinity River flow evaluation report and associated recommendations by co-authoring them with the Fish and Wildlife Service. Please note our appreciation for the cooperation and consultation of the California Department of Fish and Game, the geological survey, the Bureau of Reclamation and the National Marine Fisheries Service in the preparation of the report and recommendations.

We are pleased that the report and recommendations have been completed as required by the CVPIA. We are informed that the report and recommendations will be published by the Department next week. The report and recommendations provide for an increase of releases to the Trinity River from the Trinity River Division. The increased releases would bring the diversions from the Trinity River to the Central Valley in line with the volumes of water originally contemplated for use in the Central Valley by the Bureau of Reclamation in its 1952 ultimate plan report and by the committees of Congress when the project was authorized in 1955.

It is important to note that the report and recommendations still provide for the lion's share of Trinity River to be diverted to the Central Valley. The law of the Trinity River is clear that the current condition of the Trinity River fishery was never intended to occur. The best available science we have incorporated into the report and recommendations demonstrates that the condition need not continue.

Finally, we urge you to support appropriation of sufficient funding to meet the restoration goals as well as the Federal trust responsibilities to the Indian reserve rights in the Trinity River fishery.

In conclusion, every Interior Secretary and every Congressman from the first district, irrespective of party affiliation, has recognized the need to fulfill the original promise of the Trinity River Division for the north coast. I ask that from this day forward the north coast no longer be considered the forgotten region of California but be remembered as the home of a just people who shared their river without sacrifice.

Thank you. And I will answer any questions when the time is appropriate.

Mr. DOOLITTLE. Thank you.

[The prepared statement of Mr. George follows:]

STATEMENT OF MERVIN GEORGE, JR., CHAIRMAN, HOOPA VALLEY TRIBE

Chairman Doolittle and members of the Subcommittee, on behalf of the Hoopa Valley Tribe, thank you for inviting me to participate in today's hearing. You have asked that my testimony address the implementation of the Central Valley Project Improvement Act (Public Law 102-575 Title XXXIV (October 30, 1992) (CVPIA), particularly with regard to the Trinity River provision in subsection 3406(b)(23).

The Trinity River rises in the Trinity Alps region of California's Coast Range and flows to its confluence with the Klamath River and then to the Pacific Ocean. For the last 60 miles of their course to the sea, the waters of the Trinity River traverse the Hoopa Valley and Yurok Indian reservations. The Hupa people have occupied the Hoopa Valley, the site of our reservation, since time immemorial; scientists have been able to date our presence back as far as 10,000 years. The Trinity River is the

life blood of our culture, religion and economy. Everything we are and do as a people is oriented to the Trinity River.

In the last 150 years, California's population and economy have grown and expanded into the North Coast region. Today, the Trinity River remains not only essentially important to the Hoopa Valley, Yurok, and Karuk Indian Tribes, but also to the commercial and sport fishing industry, recreation and tourism businesses, and the towns and cities throughout Humboldt, Trinity and Del Norte Counties. So while I am here today officially on behalf of the Hoopa Valley Tribe, my testimony is intended also to give voice to our friends and neighboring communities who more often than not have been overlooked in the great debates over California's priceless water resources.

The Trinity River is the only source of imported water to the Central Valley. In 1955 Congress authorized construction of the Trinity River Division of the Central Valley Project (CVP). In order to protect the fish and wildlife of the Trinity River basin, Congress specifically limited the Secretary's discretion to divert water to the Central Valley by requiring that in-basin flows needed for the Trinity River take precedence over uses to be served in the Central Valley. This special "area of origin" protection for the Trinity River in Federal law is in addition to state county of origin restrictions on export of Trinity River water to the Central Valley.

The Hoopa Valley and Yurok Tribes have reserved rights in the Trinity River fishery that have been affirmed by the Department of the Interior and the Department of Commerce, and upheld by the courts. In addition, the CVPIA Trinity River provision includes an express declaration of the Federal trust responsibilities to protect the fishery resources of the Hoopa Valley Tribe. It is a well-established principle of Federal Indian law that secretarial discretion is limited by trust responsibilities for Indian resources. The trust responsibility operates in this case to reinforce the Secretary's obligation to operate the Trinity River Division for the benefit of fish and wildlife in the Trinity River.

Between 1964 and 1996 the Bureau of Reclamation diverted 31,780,400 acre-feet of Trinity River water to the Central Valley with devastating effects on Trinity River fish and wildlife. The river we had known for thousands of years transformed itself in less than a decade following completion of the Trinity River Division. Gone were its broad, braided channel with well-washed gravels for spawning. Gone were its pools, shallows, and shade for juvenile rearing. Gone were the velocity, volume, and frequency of flows essential to fish migration and to maintain the dynamic equilibrium of a living river and its riparian ecology. Upstream of the project, the destruction was absolute: Fish passage to 109 river miles of prime fish habitat was barred forever.

None of this was intended or foreseen by project planners. The politicians promised that not a bucket of water needed in the Trinity River basin would be exported to the Central Valley. Others testified of their expectation that construction of the Trinity River Division would actually improve the Trinity River fishery and that the hatchery built at the base of Lewiston Dam would fully mitigate the loss of upstream habitat.

The construction and operation of the Trinity River Division have devastated the ecology of the Trinity River, as well as the customs, traditions, and culture of the Hoopa Valley, Yurok, and Karuk Tribes, and the economies of the North Coast communities. Most Trinity River fish populations are either listed, proposed for listing or under status review for listing under the Endangered Species Act. For example, the Trinity River coho salmon was listed as a threatened species in May, 1997; the Trinity River steelhead is a candidate for listing; and the Trinity River chinook is under status review. From my Tribe's perspective, extinction of fish species, or their mere recovery to some minimum population is not an option.

By the end of the 1970s the adverse effects on the fishery were clear and Congress and the Secretary of the Interior took the first steps toward fulfilling the promise—and the legal mandate—that no harm would come to the Trinity River fish and wildlife from construction of the Trinity River Division:

1979—The Interior Department Solicitor confirms the precedence of water for Trinity River fish and wildlife over diversions to the Central Valley under Federal law.

1980—The Trinity River Stream Rectification Act is enacted to address sediment accumulation in the absence of flushing flows. Public Law 96-335.

1981—Interior Department Secretary Andrus directs increased releases to the Trinity River from the Trinity River Division in the amount of 340,000 acre-feet annually in years of normal water supply. (This amount, although an increase, represents the third lowest volume on record for the Trinity River at Lewiston which dates from 1912; in effect, the water available under severe drought con-

ditions). The Secretary also orders a long term-study to assess the water requirements of the fishery.

1984—The Trinity River Restoration Act (Public Law 98-541) is enacted which establishes restoration goals to ensure preservation and propagation of fish and wildlife in order to restore them to, and maintain them at, "levels approximating those which existed immediately before the start of construction" of the Trinity River Division.

1991—Interior Secretary Lujan directs that not less than 340,000 acre-feet of water be released to the Trinity River for fishery purposes in all water year types pending the conclusion of the long-term study originally ordered by Secretary Andrus.

1992—The CVPIA is enacted, including the Trinity River provision (section 3406(b)(23)) which: confirms the administrative decision to release not less than 340,000 acre-feet annually pending completion of the study; mandates the completion of the study based on the best available scientific information; requires development of recommendations for permanent in stream fishery releases; if the Secretary and the Hoopa Valley Tribe concur in the recommendations, requires that they be implemented accordingly; and makes the costs of implementation reimbursable as operation and maintenance expenditures pursuant to existing law.

1996—The Trinity River Restoration Act is amended and extended (Public Law 104-143). The restoration goal is revised explicitly to achieve ""mitigation of fish habitat loss above Lewiston Dam while not impairing efforts to restore and maintain naturally reproducing anadromous fish stocks within the basin." The Act also adopts the goal of the "resumption of commercial, including ocean harvest, and recreational fishing activities." In addition, funding requests are authorized for the purpose of monitoring, evaluating and maintaining program investments in fish and wildlife populations.

The Hoopa Valley Tribe has worked closely with the Department of the Interior on the Trinity River Flow Evaluation Report and associated recommendations by coauthoring them with the Fish and Wildlife Service. Please note our grateful appreciation for the cooperation and consultation of the California Department of Fish and Game, the Geological Survey, the Bureau of Reclamation, and the National Marine Fisheries Service in the preparation of the Report and recommendations. We are pleased that the Report and recommendations have been completed as required by the CVPIA. We are informed that the Report and recommendations will be published by the Department next week. Thereafter the Report and recommendations will be forwarded to the Resources Committee and the Senate Indian Affairs and Energy and Natural Resources Committees as required by the CVPIA.

The Report and recommendations provide for an increase of releases to the Trinity River from the Trinity River Division. The increased releases would bring the diversions from the Trinity River to the Central Valley in line with the volumes of water originally contemplated for use in the Central Valley by the Bureau of Reclamation in its 1952 Ultimate Plan Report and by the Committees of Congress when the project was authorized in 1955. It is important to note that the Report and recommendations still provide for the lion's share of Trinity River water to be diverted to the Central Valley.

The law is clear that the current condition of the Trinity River fishery was never intended to occur. The best available science we have incorporated into the Report and recommendations demonstrates that that condition need not persist.

Finally, we are committed to ensuring that the Administration requests and the Congress appropriates sufficient funds to meet the mandates in existing law for restoration of the Trinity River, as well as for the future implementation of the recommendations in the Report. Sufficient funding is essential to meet the restoration goals, as well as the Federal trust responsibilities to the Indian reserved rights in the Trinity River fishery.

In conclusion, every Interior Secretary and every congressman from the first district, irrespective of party affiliation, has recognized the need to fulfill the original promise of the Trinity River Division for the North Coast. I ask that from this day forward the North Coast no longer be considered the Forgotten Region of California but be remembered as the home of a just people who shared their river without sacrificing it.

This concludes my testimony. I would be pleased to address any questions you Committee members may have for me.

Mr. DOOLITTLE. At this point, we're going to recess the Committee. We'll go vote and come back as quickly as possible. It's just

one vote, so it shouldn't be more than 15 minutes. Maybe it will be less.

Mr. Dooley is going to have to leave to catch a plane, so I'm going to let him ask his question now.

Mr. DOOLEY. And this goes Miss Beneke as well as Mr. Nelson. Mr. Gartrell might want to comment.

On the completion of the PEIS, which I think both of these individuals representing urban and agricultural districts have some concerns about and about its impact, and we have heard some of the modeling and some of the concerns about whether or not we have critically dry years or even just a little bit below normal dry years, what it does in terms of water deliveries, you know, are concerning—and also this issue of the tiered pricing, which I talked to the Secretary and you were there listening to that, in terms of this basis in negotiation, does the Department, in fact, you know, feel compelled to at least engage in a dialogue with some of the contractors prior to engaging in a negotiation process on some of these issues?

Mrs. BENEKE. Let me, first off, start by addressing the PEIS. We're on a track to have a supplemental draft document released, I believe, next month, or at least early this summer. There will be an opportunity for the public to review that document, and we are on a track to go final with the document this fall with the record of decision.

I would like to remind the Subcommittee and the stakeholders, if I could, that this is a NEPA document and, as such, it displays a full range of alternatives, bookends, if you will, and does not necessarily mean that we're going to end up at one extreme and or the other. But, of course, under NEPA we do look at a full range of alternatives. And I would encourage people to keep that in mind as they're looking at our modeling numbers and the like.

Mr. DOOLEY. Doesn't that in itself make it then more difficult to enter into the negotiations process if we haven't come to a consensus on that?

Mrs. BENEKE. Well, we are on the verge of completing the basis of negotiation for the long-term contracts. We have had a scoping process where there was public input as part of our NEPA process on this. And we also, as I understand it, have been engaged in informal discussions with members of the water user community and also stakeholders with respect to the basis of negotiation.

Mr. DOOLEY. I guess I'm still a little bit, you know, a little bit—I don't quite get it yet. How can you even complete a basis of negotiation when the PEIS isn't completed, when there's going to be a range of alternatives in there that have markedly different impacts and you haven't come to a conclusion on which one of these—you know, where we're building some consensus on. This looks to me like a very—you know, a moving target here. Am I missing something?

Mrs. BENEKE. Well, we feel that we have adequate analysis available to be able to craft the basis of negotiation. Now there won't be any final determinations on the contracts until after the final PEIS is completed and until the record of decision is signed.

Mr. DOOLEY. Mr. Nelson, you want to comment on that?

Mr. BARRY NELSON. Thank you. Yes, I would. A couple thoughts——

Mr. DOOLEY. Excuse me. I meant the other Nelson.

Mr. BARRY NELSON. Mr. Dooley, your choice.

Mr. DAN NELSON. Thank you, cousin Barry.

The water contractors have a dilemma here. On the one hand, we want to get on with the long-term contacting process along with the Interior because it's only under long-term contracts that we have the certainty that we need and are able to do long-term planning and financing. So, on the one hand, we are with the Department of Interior to get moving on the long-term contract renewals.

However, they are premised by doing a legitimate PEIS; and we are concerned with the PEIS and the drafts that are out right now. Just to refresh your memory on the process to date, a draft PEIS has been released after which it was acknowledged it was based on a fundamentally flawed model that those changes to the model have been done. So the question for us is, are those significant enough changes, which our sense is that they are, that we may want to recirculate that document for a round of comments prior to going out to final?

Again, the dilemma that we have is that delays the long-term contract renewal process that we would like to get started on as well. I guess, fundamentally, we're feeling somewhat jammed. We—and we need to make sure that the contract renewal process is done right. There's a lot at stake here for all of us, and they need to be done right, and they need to be done on a proper foundation. And we're not convinced that PEIS is the proper foundation yet.

Mr. DOOLEY. Mr. Nelson, if you could briefly respond.

Mr. BARRY NELSON. I will briefly respond on the issue of projected shortfalls and deliveries and on the issue of tiered pricing.

On the first issue, I would like to remind folks here that shortages began to be seen during the 1987 to 1992 drought before the CVPIA was passed. The CVP is an over-subscribed system, and coming to terms with that is a painful process. Yes, there has been some reallocation to the environment, but the overallocation problem is much bigger than that. That's why we think it makes sense to look beyond CVP contract deliveries solely as strategies to provide the water users with the water supply benefits that they need.

The environmental community is taking that very seriously. We have prepared a blueprint regarding water supply reliability for urban and agriculture that I have provided to the Subcommittee staff. And I would like to emphasize here that we think the only way CALFED will deliver an ambitious ecosystem restoration program is if it can deliver improved water supply reliability for users.

Finally, very briefly, with regard to tier pricing, we think that more realistic pricing sends the right signals to encourage conservation, encourage efficient water use. We're very supportive of conjunctive use programs that's endorsed in environmental community's blueprint. We don't see tiered pricing as a big obstacle to those programs, but we're very eager to sit down and spend more time rolling our sleeves up and making those programs work.

Mr. DOOLEY. Thank you.

Mr. DOOLITTLE. Okay. The Committee will recess and be back shortly.

[Recess.]

Mr. DOOLITTLE. The Subcommittee will reconvene. Mr. Nelson, last but certainly not least.

STATEMENT OF DAN NELSON, EXECUTIVE DIRECTOR, SAN LUIS AND DELTA MENDOTA WATER AUTHORITY, LOS BANOS, CALIFORNIA

Mr. DANIEL NELSON. Thank you, Mr. Chairman, and members of the Committee for inviting me to appear before you today. I would let the record show that I am the first volunteer for the Scandinavian fish ladder study. I look forward to working with the Chairman on that.

I am the executive director of the San Luis & Delta-Mendota Water Authority, a joint powers authority comprised of 32 member agencies with CVP contracts. Our service on the west side of the San Joaquin Valley covers about 1.1 million acres of the world's most productive and efficiently operated farmland, approximately 200,000 acres of prime wetland habitat, and serves over 600,000 urban users including the high-tech industries of the Silicon Valley.

As you know, we have many concerns with the CVPIA, not with its goals, but with some of the provisions and the way that they are being implemented. Interior's approach to carrying out the CVPIA is flawed in three ways. First, it seeks to solve the Central Valley's many environmental problems at the expense of one group of water users. Second, the Department is implementing the law in isolation from the larger CALFED program. And third, the Department ignores the flexibility built into CVPIA to allow the law's environmental goals to be met in a way that minimizes adverse impacts on water users.

The effects of this approach can be seen in our water supply this year. We currently have a 70 percent allocation to our Agricultural Service contractors and this is in the fifth wet year in a row. In fact, it's the fifth year of the 5 wettest years on record. The CVPIA focuses exclusively on a small group of CVP contractors mainly in our area who use only 10 percent of the water diverted from the Bay-Delta. Let me say that again to emphasize the point. The Agricultural Service contractors in our area have contracts for about 1.8 million acre-feet. Those are the folks that are taking on the lion's share of the water supply of CVPIA. The total diversions of the San Joaquin Sacramento River System Bay-Delta are over 17 million acre-feet. And so again, the lion's share of the impacts are born by 1.8 million acre-feet of those water users. These contractors have been reduced to an average supply of about 65 to 70 percent of our contractual entitlement. No other water user community has had to deal with a sustained cutback of this magnitude.

I would like to describe some of the changes in our area over the last decade which have been more widespread and substantial than I think the authors of the CVPIA ever dreamed possible. Dramatic increases in water prices, widespread improvements in irrigation efficiency, crop shifts to higher value crops and perennials, substantial reductions in drainage discharges and land retirement. All of these changes advocated by the environmental community are well underway in our area. Water rates in our area have increased tenfold in the last decade. These increases, coupled with the chron-

ic shortage of water in our area, produce significant shifts in irrigation practices and cropping patterns. Our farmers are making major capital investments in high-tech irrigation technology and perennial plantings.

In Westlands, for example, investments in drip-and-trickle systems has grown eightfold between '85 and '97, and permanent plantings of tree and vine acreage have more than doubled. We have also made dramatic progress in drainage management over the last few years.

In 1996 we formed the regional drainage entity to implement a drainage management plan called the Grassland Bypass Project. Through this project, drainage water has been removed from 93 miles of wildlife refuge conveyance channels, selenium load discharges have been reduced by 44 percent below water year 1996 levels, and average selenium concentrations and salt slough have been reduced from 16 parts per billion to water quality objective of 2 parts per billion in 28 out of the last 29 months.

All of these changes have helped our farmers cope with the restricted water supply and help meet the CVPIA's environmental goals. But the trend toward permanent crops, combined with the high capital and operating cost our farmers have incurred to use new irrigation technology actually increases their dependence on an adequate water supply.

I'm afraid the danger of this dependence has been masked by the string of wet years we have experienced over the last decade. Even in these years we have only received a full supply in one year. That's over the last 5 years since we signed the accord. We were able to stretch our supplies during this wet period with some water purchases, but only at a cost of 50 to 100 percent higher than our average costs, and these purchases are nonsustainable as demand increases.

In conclusion, our farmers have stepped up to the challenges imposed by the higher prices and reduced supplies resulting from the CVPIA. But they are on the edge now and are at the limit of what they can do in response to these pressures. They will go over the edge as soon as we once again begin into normal weather patterns. We do not believe the situation was the intent of the CVPIA but it's how the law is currently being administered.

There is, in fact, a great deal of discretion in how the CVPIA can be interpreted and administered. Rather than trying to maximize the environmental gains through the CVPIA alone, Interior should be working with CALFED to help accomplish the CVPIA's environmental goals in a manner that reduces the economic burdens it has placed on one relatively small group of water users. In the long run, this will provide a far stronger, more stable program of environmental protection.

CALFED can build on CVPIA in three key areas:

Number one, it can provide financial assistance for on-farm and district-level water management strategies to help mitigate and cope with the supply impacts of the CVPIA.

Number two, it can improve the flexibility of the system through an environmental water account which can provide increased protections and increased supplies through operational

change. This is as opposed to a regulatory process that just simply reallocates this water.

Number three, it can develop new water, increase the size of the pie through surface and groundwater storage, premised on the sharing of water between environmental and water needs.

In closing, I would also like to add my support for the Federal funding. Again, as the dust settles on the implementation of CALFED and the integration of some of the CVPIA measures into CALFED, the funding is going to be very critical and we are in support of the current efforts for that funding.

Thank you, Mr. Chairman and I'm available for questions.

Mr. DOOLITTLE. Thank you.

[The prepared statement of Mr. Daniel Nelson follows:]

United States House of Representatives
Committee on Resources
Subcommittee on Water and Power
The Honorable John T. Doolittle, Chairman

Written Testimony of Daniel G. Nelson, Executive Director
San Luis & Delta-Mendota Water Authority
May 20, 1999
Los Banos, California

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

I very much appreciate being given the opportunity to testify before the Subcommittee to provide an agricultural water user perspective on the current implementation of the Central Valley Improvement Act (CVPIA).

Introduction

I am Daniel G. Nelson, the Executive Director of the San Luis & Delta-Mendota Water Authority (SLDMWA). SLDMWA is a joint powers authority formed under state law comprised of 32 member agencies that all have contracts with the federal Central Valley Project (CVP) and all take their water through the CVP Tracy Pumping plant.

The SLDMWA service area is comprised of over 1.1 million acres of the world's most productive and efficiently operated farmland, approximately 200,000 acres of prime wetland habitat, serves over 600,000 urban users, and a variety of industries including those in the high-tech region of the silicon valley. The 1.1 million acres lie predominantly in the west side of the San Joaquin Valley in Fresno, Merced, and Stanislaus Counties and includes portions of San Benito and Santa Clara Counties. The area is world renown for its variety of crops, production capability, and efficient operations. The ideal soils and climate support a wide diversity of crops including vegetables such as broccoli, asparagus, peas, beans, tomatoes, cantaloupes and lettuce as well as an increased dedication to permanent crops such as nuts, tree fruit, citrus and grapes. The region still maintains its worldwide status for high quality cotton. As far as water use and efficiency - no where in the world do we grow so much with so little.

The main CVP facilities which serve the SLDMWA are the Tracy Pumping Plant, Delta-Mendota Canal, O'Neill Pumping Plant, San Luis Reservoir, and the San Luis Canal. The member agencies have CVP contracts for approximately 3.2 million acre feet (af) annually with average actual deliveries currently forecasted at approximately 2.5 million af. There are four types of CVP contracts within the area: Exchange Contracts, approximately 900,000 af; Municipal & Industrial (M & I) contracts, approximately 200,000 af; refuge supply contracts, approximately 250,000 af; and Ag Service (Rec Law) contracts, approximately 1,800,000 af.

Groundwater within the region is "spotty" in both availability and quality. A significant portion of the service area is entirely reliant upon CVP water as their sole source of supply.

In this testimony I have attempted to address the agricultural perspective on the current implementation of the CVPIA, problems with specific components of CVPIA and its coordination and relationship with the CALFED program. We have many concerns with the CVPIA - not with its goals, but with the extent to which it has attempted to solve the Central Valley's environmental problems largely at the expense of a single group of water users. The CALFED program offers an opportunity to solve those same problems with a more appropriate scope, both geographically and financially.

The CVPIA has presented fundamental challenges to water districts and farmers in our area. I am proud of the ways our community has responded to those challenges and resulting changes posed by the CVPIA. In many ways, those changes have been more widespread and substantial than I think the authors of the CVPIA ever dreamed possible. Dramatic increases in water prices, widespread improvements in irrigation efficiency, crop shifts to higher value crops and perennials, substantial reductions in drainage discharges, and even land retirement, all changes advocated by the environmental community, are well underway in our area.

We remain committed to work with federal and state agencies and other stakeholders towards the implementation of CVPIA in a comprehensive CALFED context that acknowledges the importance of improved environmental resources, a vibrant agricultural and statewide economy, and meeting the needs of a growing population in a balanced way.

Relationship / Coordination Between CALFED and CVPIA Implementation

On December 15, 1994, federal & state agencies along with a broad base of stakeholders signed the Principles of Agreement on Bay-Delta Standards Between the State of California and the Federal Government (Bay-delta Accord). The Accord was heralded as an end to California water wars and the initiation of a new way of doing business in the management of California's water resources. It was intended among other things to provide certainty to water users by establishing a comprehensive operating plan and coordinating its implementation with all appropriate state and federal agencies and stakeholders, to stabilize and improve fisheries and improve water quality through a commitment of water and funds for habitat restoration as we work on a long term plan, and to return the responsibility of management of California's water resources from the federal government to the state of California. The guiding principal in the development of the Accord was the recognition that for California to move forward in a balanced and constructive way in the management of its water resources it must do so in a comprehensive, collaborative manner.

The impetus for the Accord was the dysfunctional management of water supply, water quality and fishery recovery through the existing implementation processes of the Endangered Species

Act, Central Valley Project Improvement Act, and the Clean Water Act. Senator Feinstein recognized that the federal agencies responsible for the implementation of these statutes were operating unilaterally and needed coordination. It was recognized that in some instances their goals and objectives contradicted and even conflicted with each other and that a comprehensive approach was needed. It was also recognized that for this effort to be truly a collaborative effort it would need to include the federal, state and stakeholder participation. Senator Feinstein initiated meetings and through an historic collaborative process the Accord was developed.

This collaborative process was formalized and extended through the development of CALFED. CALFED provides us with the forum and a process to accomplish shared goals and visions, and to work out potential conflicts in a comprehensive context.

It appears to us that the federal agencies have strayed in their commitment to work in a comprehensive and collaborative manner. Recent actions under CVPIA and ESA authorities have returned us back to pre Accord conditions of uncertainty, unilateral decision making, inefficient ecological improvements, inequitable and disproportionate impacts, and resulting contentiousness. California water resource management decisions are once again being driven by federal regulatory processes outside of the comprehensive collaborative opportunities we have developed in CALFED. This unilateral approach continues to be inefficient in implementing ecological improvements and has been done with a lack of sensitivity to water supply needs.

Programmatic Environmental Impact Statement (PEIS)

Section 3409 requires the Secretary of Interior to "prepare a programmatic environmental impact statement pursuant to the National Environmental Policy Act analyzing the direct and indirect impacts and benefits of implementing this title". Interior released a Draft PEIS to which the SLDMWA has submitted extensive comments, (April 17, 1998). Since that time Interior has acknowledged and tried to remedy severe errors in the model (PROSIM) used for the study and recently has initiated "Interest Group Meetings" with stakeholders regarding the necessary amendments. Comments on the Supplemental Analysis Interest Group Meeting is submitted with this testimony.

Impact Analysis. We remain concerned that Interior continues to understate the impacts of the implementation of CVPIA. This results from the inflation of the baseline (No Action Alternative) against which the impacts of CVPIA are measured. A good example of this is the contradiction of the inclusion of the Bay-delta Accord environmental measures in the No Action Alternative while these same measures have been premised on implementation of the CVPIA.

It has also been indicated that the "revised" PROSIM analysis more accurately reflects "current"CVP operations and "decision making". These appear to be policy calls rather than engineering, hydrologic or of a more factual nature and seem more consistent with directives from CVPIA as opposed to pre CVPIA operations. We have been operating the CVP and the

SWP with ad hoc CVPIA implementation policies. If the analysis includes these ad hoc policies in the No Action Alternative, when compared to a Preferred Alternative the analysis will not reflect the impacts of the implementation of CVPIA.

CVPIA has initiated fundamental changes in the way that we manage water in California and has impacted water users significantly. Interior's analysis must be honest and straight-forward in quantifying these impacts so we can use it as a legitimate tool in balanced decision making.

Lack of Balance Between Environmental Measures and Other Primary Project Purposes. Since enactment, CVPIA has been implemented in an ad hoc fashion through "interim" "policies" and "guidelines". The current PEIS analysis of this implementation regime clearly demonstrates what some Interior officials have publicly stated: that the water supply purpose of the CVP is treated as secondary to environmental demands. This directly contradicts the CVPIA objective that all primary CVP purposes be treated co-equally, and results in a Project operation regime that is neither viable or reliable. Instead of merely noting the lack of balance between environmental measures and other primary Project purposes, Interior should use the PEIS as the vehicle for adjusting CVPIA implementation activities to ensure that the CVP is operated in a reasonable and balanced manner that serves all primary Project purposes equally.

Updated PROSIM Model Shows You Can't Realistically Implement Proposed Measures. Not only does the PEIS indicate that the proposed CVPIA implementation regime (and the current operating parameters) are unreasonable and unbalanced, the Analysis demonstrates that achievement of Endangered Species Act and CALFED Delta objectives is all but impossible in drier hydrologic scenarios. With all of the resources dedicated towards successful achievement of ESA and CALFED objectives, it is incomprehensible that the PEIS analysis does not immediately "raise a red flag" of obvious contradiction and potential disaster.

Establishment of Rules and Regulations. Finally, the question must be asked, "what exactly is the CVPIA implementation program and actions that the PEIS is analyzing?" The PEIS is often described as a "set of bookends" encompassing the potential reasonable CVPIA implementation scenarios. However, without an orderly and substantial process for development of Rules and Regulations (establishing Interior's legal interpretation of CVPIA statutory language and a reasonable means of implementing CVPIA provisions), the true impact of the various combinations of CVPIA implementation choices are far from discoverable with the current PEIS.

Contract Renewal

The Bureau of Reclamation has identified approximately 114 contracts that will be subject to negotiation of long term renewals under CVPIA Section 3404(c). Reclamation is currently providing service to most of the contractors under Interim Renewal Contracts authorized by Section 3404(c)(1). The balance are continuing to receive water service under long term contracts that are subject to the hammer clause provisions of Section 3404(c)(3), and for which the parties

have signed Binding Agreements. A summary of background information is being submitted herewith.

Needless to say, the task before both Reclamation and the contractors in trying to coordinate and execute this many contracts simultaneously is enormous. In 1995, Reclamation developed an ambitious draft Plan of Action for Renewal of the Long-Term Water Service Contracts - Environmental Compliance, CVP. The Plan projected that the PEIS would be completed in May, 1996 and that rules and regulations, contracting guidelines, and a CVP-wide environmental working document would be completed by the end of that year. The Plan then projected negotiation of long-term renewal contracts a year later by December 1997. The negotiations were to be structured at three levels, CVP wide, by CVP division, and then by specific contractor, with appropriate site specific environmental work, following the approach that worked well when 65 Interim Renewal Contracts were negotiated in 1995.

As the timetable for the PEIS has slipped, most recently until September, 1999, Reclamation has developed a contracting time-table that calls for new, long-term contracts by February 28, 2000. The process has been modified to integrate simultaneous development of the PEIS, long-term contract negotiation, and a plan for contractor-specific environmental documentation. This approach is fraught with difficulties. The only way it can be successful is if "everything fits perfectly". That is, the assumptions Reclamation has been relying on for the contract negotiations must prove to be well-founded and lead to contract terms that are consistent with long-term policies. In this regard, Reclamation's publicly stated policy for contract renewal, as a result of the "Garamendi Process", has been that existing contracts would be renewed for the existing contract quantities, so long as those quantities have been put to beneficial use.

Now the most recent PEIS data suggests that even before full implementation of CVPIA, the CVP is so inflexible that water available to contractors will be decreased to zero in all water years that are less than normal years. The wide discrepancy between this data and earlier information contained in the draft PEIS threatens to derail the current work plan and schedule. That is, the new PEIS data appears to indicate that the assumptions that have guided the PEIS give the fish and wildlife obligations of the CVP significant priority over contractual obligations, contrary to the CVPIA's purpose of achieving balance between project purposes. First, such assumptions cannot form the basis of good-faith contract negotiations and must be re-examined. Second, the contracting assumptions Reclamation has envisioned in reliance on the Draft PEIS and the announced policy either cannot fit with the current PEIS data, or else the changes in contracts that will result are so radical that a long and contentious contracting process is a certainty.

CVP water service contractors are eager to negotiate long-term renewal contracts. Interim 1- or 2- year contracts make capital financing impossible, including larger maintenance projects and projects needed to meet obligations under their CVPIA Water Management Plans. Uncertainty about the need to make retroactive payment of hammer clause charges of 1-1/2 times the Restoration Charge has forced some long-term contractors to collect the hammer clause charge in

trust accounts, placing a huge economic burden on their water users, despite execution of the Binding Agreement. Contractor work groups are busily working on compiling data and developing positions on issues that will be essential to constructive negotiations.

However, the contracts must result from good-faith negotiations that recognize the CVP's obligations to all of its project beneficiaries, and of its customers over the next 25 years and beyond. Both Interior and the contractors must have adequate information about what assumptions have been folded into the critical environmental documentation, and what additional policy implications will result. The SLDMWA has been down the road before of attempting to negotiate the very first interim renewal contracts while Interior was shifting policies on the fly. The experience was traumatic for both Interior and contractors. We all must make certain that neither side is put in that position as we take up the huge task of long-term contract renewal.

Simply stated, the contractors - who have waited years to develop long-term renewals - are anxious to proceed. However, contracts that will govern the relationship between the United States and those contractors for a quarter century are far too important to be developed in a haphazard manner. We urge an expedited but methodical approach, which we believe will ultimately serve all interests. There is too much at stake to follow any other course of action.

Trinity River

Section 3406(b)(23) directs the Secretary of Interior to complete the Trinity River Flow Evaluation Study which was being conducted by F&WS under the mandate of the Secretarial Decision of January 14, 1981. The Secretary was given the authority to adjust the flow release (up or down) based on the Flow Evaluation and without Congressional concurrence. The Flow Evaluation is integrated into the comprehensive Basin Restoration Program which was initiated through the Trinity River Basin Fish and Wildlife Restoration Act in 1984.

Interior's work on restoration of the Trinity River is troubling for at least two reasons.

1. Interior has focused on only one cause of the Trinity River's decline; and,
2. Interior has failed to integrate restoration of the Trinity river into the broader Bay/Delta - CALFED process.

The Trinity River Basin Fish and Wildlife Management Act of 1995 directed the preparation of the Trinity River Mainstem Restoration Environmental Impact Report. The purpose of this program was to restore and maintain the natural production of anadramous fish populations in the Trinity River mainstem downstream of Lewiston Dam. The 1995 Act expired on September 30, 1998, but work on the EIS has continued under the Federal Advisory Commission Act. The fact that the EIS was not completed prior to the expiration of the Act is one example of Interior's failure to meet the deadlines imposed by Congress. A second example is the Trinity River Flow Evaluation Study, which Congress directed Interior to prepare when it enacted CVPIA section 3406(b)(23). The Study was to have been completed by September 30, 1996, but it is now more

than two and one-half years late.

Interior's work to restore the mainstem of the Trinity River is more troubling for another reason. Interior frames the issue as follows:

> There are likely numerous factors that have contributed to the decline of natural anadramous fish populations in the Trinity River. However, the consensus among fish biologists is that the presence and operations of the Trinity and Lewiston Dams are major factors in the decline. The reduced flows from the dams (a result of water diversion to the Central Valley) caused harmful changes to fish habitat in the river. The degradation of the habitat resulted in decreased salmon production.

Despite Interior's acknowledgment that there are "likely numerous factors that have contributed to the decline of natural anadramous fish populations in the Trinity River," with the exception of the Mechanical Restoration and the No Action Alternatives, each of the alternatives analyzed by the EIS will rely on increasing releases from Lewiston Dam as the principal means of restoring the River. From what we have been able to learn, none of the alternatives look at a comprehensive watershed management approach to restoration or considers the impact of out-of-basin activities to the Trinity River anadramous fishery.

Under the Maximum Flow Alternative being considered by Interior as much as 2,146,000 af would be released from Lewiston Dam. Under the Flow Evaluation Alternative, the basis of which is the Trinity River Flow Evaluation Study being conducted pursuant to CVPIA section 3406(b)(23), as much as 815,000 af would be released from Lewiston Dam. These figures are compared to the 340,000 af that are released annually under existing management criteria. If either of these alternatives were selected, the impact on the water supply for the CVP, Sacramento River watershed and the Bay-delta ecosystem would be enormous, and the chances of the CALFED Program succeeding would be significantly compromised. But for inexplicable reasons, Interior has refused to coordinate its efforts to restore the Trinity River with the CALFED Program thus far. Thorough consideration needs to be given on both comprehensive strategies for the Trinity River Basin as well as a comprehensive CALFED program which folds in Trinity River operations and habitat improvement within their scope. The two are inseparable.

Section 3406 (b)(2) - Dedication of 800,000 af

Background. Section 3406(b)(2) of the CVPIA was one of the centerpieces of the Act. While section 3402 stated the purposes of the statute as including "to protect, restore, and enhance fish, wildlife and associated habitats in the Central Valley and Trinity River basins" and "to address impacts of the CVP on fish, wildlife and associated habitats," Section 3406(b) provided one of the sources of water supply to assist in meeting those purposes. It directs the Secretary "upon implementation of this title, to dedicate and manage annually 800,000 af of CVP yield for the primary purpose of implementing fish, wildlife, and habitat restoration purposes and measures

authorized in this title; to assist the State of California in its efforts to protect the waters of the San Francisco Bay/Sacramento-San Joaquin Delta Estuary; and to help to meet such obligations as may be legally imposed upon the CVP under state and federal law following the date of enactment of this title, included but not limited to additional obligations under the federal Endangered Species Act." Since October 30, 1992, this provision has provided a source of water managed by the U.S. Fish and Wildlife Service (F&WS) and applied to the increased water quality standards in the Bay-Delta, to increased requirements or new requirements under Biological Opinions, and for increased flow and pumping restrictions pursuant to the draft Anadramous Fisheries Restoration Plan (AFRP).

(b)(2)Implementation. The Department of the Interior (Interior) began to implement Section (b)(2) immediately upon enactment. Because there was no uncommitted yield of the CVP remaining when the CVPIA was enacted, this water was reallocated from other project purposes, primarily from water supplies for water service contractors and power. In 1993, water users contended that NEPA compliance was a pre-condition to reallocation of their supplies, but the 9th Circuit Court of Appeal quickly ruled that the "immediately upon enactment" phrase in (b)(2) was inconsistent with the procedural requirements of NEPA and therefore not subject to it. Interior therefore has proceeded to dedicate and manage 800,000 af of CVP yield for (b)(2) purposes in every year since enactment, under a series of guidelines and working papers. In December, 1994, the Secretary of Interior signed the Bay-Delta Accord, an agreement between state and federal agencies and stakeholders in the Bay-Delta, which provided for increased water quality standards in the Bay-Delta and habitat protection sufficient for currently listed threatened and endangered species and to create conditions in the Estuary to avoid the need for additional listings for aquatic species. All CVP water provided pursuant to the Accord is credited toward the CVP obligation to provide project yield under (b)(2). On November 20, 1997 Interior issued its Final Administrative Proposal on the Management of (b)(2) water.

Key Issues. Environmental groups have taken the position that the 800,000 af of yield is not dedicated and managed as required by (b)(2) unless water deliveries are impacted by that amount in each year. The Solicitor's Opinion written in support of the Final Administrative Proposal concluded that such an interpretation was not consistent with the statutory language or legislative history of the CVPIA, and a federal judge has both opined that it is also inconsistent with the beneficial use requirements of the California Constitution and Federal Reclamation Law, and ruled that Interior has the discretion to reuse water that is dedicated and managed for (b)(2) purposes, so long as the environmental requirements of (b)(2) are achieved.

Dedication of Yield. Section 3406(b)(2) states: "For the purpose of this section, the term "Central Valley Project yield" means the delivery capability of the CVP during the 1928-1934 drought period after fishery, water quality, and other flow and operational requirements imposed by terms and conditions existing in licenses, permits and other agreements pertaining to the CVP under applicable State of Federal law existing at the time of enactment of this title have been met." Contractors have long argued that "yield" in the statute means yield as historically calculated for Project planning purposes. However, the 1997 Final Administrative Proposal and supporting Solicitor's Opinion turned away from any calculation of "yield" as the measurement

of (b)(2) implementation, and focused instead on performance of a series of fishery measures in every year. While acknowledging that impacts to water deliveries to contractors are neither the goal nor the stated measure of the 800,000 af dedication, the Final Administrative Proposal relied on modeling studies that showed an approximation of the impacts on contract deliveries from implementing the measures over the 70-year hydrological record. The proposed measures resulted in an average impact on contract deliveries of 800,000 af.

On April 9, 1999, Judge Oliver Wanger ordered Interior to calculate, in accordance with the statute, CVP yield in order to implement the statute and ruled: "Absent findings made pursuant to 3406(b)(2)(C), Interior has no discretion to annually dedicate and manage less or more than 800,000 af of CVP yield per 3406(b)(2) purposes." Notice of appeal has not yet been filed.

Implications. Interior's failure to promptly address the issue of a yield calculation has led to 6-1/2 years of uncertainty about the implementation of Section 3406(b)(2) and has prompted lawsuits by both environmental groups and water users. By court order, Interior is presently "enjoined and restrained from implementing (b)(2) of CVPIA in the 1999 water year (March 1, 1999-February 28, 2000) in a manner that results in the dedication and management of more than or less than 800,000 af of CVP yield for (b)(2) purposes." Because it has failed to quantify the yield impacts of various (b)(2), Interior cannot plan for or prioritize fishery measures that Congress intended to have implemented under the Anadramous Fisheries Doubling Plan. Not only do the demands of CVPIA severely constrain flexibility of project operations, failure to have quantified and determined the application of the 800,000 af of yield for a water year results in the constant shell game of whether or not there is "still some more" of the 800,000 af of yield available for still more actions. This implementation strategy forces Reclamation to tinker endlessly with its forecasts and contract allocations causing unnecessary uncertainty in time sensitive crop management decisions.

Conclusion. The dedication of CVP yield pursuant to 3406(b)(2) is a critical tool to be utilized by Interior to carry out the purposes of the CVPIA, that will necessarily have impacts on its water service contractors until and unless the yield of the project is augmented. However, Interior must not ignore that an additional purpose of the statute is "to achieve a reasonable balance among competing demands for use of Central Valley Project water, including the requirements of fish and wildlife, agricultural, municipal and industrial and power contractors." It is incumbent on Interior to without delay develop an accounting methodology that is consistent with the statute and the court's opinion.

Tiered Pricing

With the anticipated negotiation and implementation of long-term contracts for water in the Central Valley Project comes the required implementation of Section 3405(d) entitled "WATER PRICING REFORM," commonly referred to as the "tiered water pricing" requirements.

Tiered Pricing In Areas With Inadequate Supplies. CVPIA Section 3405(d) requires a system of tiered water pricing in CVP water service contracts for a term longer than three years. This section of the law provides that the last twenty percent of a contractor's project supply will be charged to the contractor with a "tiered pricing" surcharge of between 30 and 100 percent of the contractors's cost-of-service rate (depending upon the class of water and the total water supply made available). Raising the price on all project water subject to contract in excess of 80% of a district's contract total poses a catastrophic economic threat to those CVP contractors whose contract supplies are inadequate, and who therefrom must purchase significant project water in excess of their contract quantity. While Congress appears to have intended that 20% of a district's CVP water supply be supplied at the tiered rates, it never intended that, as will be true in some cases, as much as 60% of a district's supply would be at those higher rates. Full cost rates for some of the CVP contractors for whom tiered pricing will be most damaging are as much as 700% higher than their normal costs. This will result in a doubling of the total annual CVP water cost for some districts.

For most CVP contractors whose CVP contract supply only provides a supplemental source of supply and not enough water to meet the raw consumptive demands of the crops grown, this provision is just purely punitive. The contractors have little choice but to take the water and pay the price. The supposed conservation objective of this section of the law is already being met and raising the price of the water in this manner does not further that objective.

Tiered Pricing/Conjunctive Use. For contractors that operate a system conjunctively using the groundwater beneath the area, tiered pricing has an additional problematic effect. In big water years when contractors are trying to "put" water into their groundwater reserves, the increment of water to be stored for future use is typically the last increment of that year's supply, the increment now proposed to be doubled in price in some circumstances. It must be understood that operating conjunctive use projects is very expensive. By the time the water is paid for to be stored, then paid for to be extracted and delivered to the end user, it is typically the most expensive water provided by a contractor. Adding to these costs only works to diminish the value of effectively using the groundwater reservoir. In recent times, a tremendous amount of effort has been put into furthering the development of groundwater conjunctive use programs in lieu of new surface water storage. Here we have a clear disincentive being applied to this apparently preferred way of building new water storage. When combined with all of the other adverse water supply and financial impacts of the CVPIA on CVP customers, tiered pricing is another dose of salt in the wounds.

One Size Doesn't Fit All. Tiered water pricing applied in this one-size-fits-all fashion virtually destroys the value of a long-term water service contract. On the other hand, pursuant to the CVPIA and Reclamation Reform Act water conservation provisions, all CVP districts have implemented district-to-landowner inverted block rate pricing structures, or similar programs, as a mandatory element of their water management plans. We suggest that this customized approach to tiered pricing is the most sensible way of balancing good water management and conservation with meeting the water needs of CVP contractors.

Restoration Fund

As of December 1, 1998 (the latest financial data), $321 million had been spent implementing the CVPIA. Of this, $177 million has come directly from CVP customers in the form of Restoration Fund payments. Our member agencies and customers are deeply concerned about how this money is being spent and what it has accomplished.

Simply put, we have one goal: we want to make sure that there is financial and biological accountability in how CVPIA financial resources are expended. We recognized that fishery and ecosystem improvements are linked directly to the operation of our water management infrastructure and the quantity and reliability of water supplies available for CVP customers. We have a legitimate expectation that with good investment decisions by Interior, the viability of the CVP as a water project can be revived.

Below we will list a number of current concerns, but above these, the most important is that Interior has yet to articulate a comprehensive plan for ecosystem investment to guide decisions and help in explaining WHY they are spending money as they do. After seven years, they can explain what they are doing but have yet to explain why, or for what expected benefits.

The May 7, 1999 letter which Chairman Doolittle sent to CALFED asked a number of tough but important questions. These exact questions need to be asked of Interior relative to CVPIA implementation. In addition, the need for financial, programmatic, and biological integration of CALFED and CVPIA is essential and very slow in coming.

Turning to the overall priorities of the CVPIA Restoration Fund, we must clearly state that Interior has failed to focus CVP resources first on ecosystem problems related directly to the construction and operations of the CVP. Instead, Interior has redirected CVPIA water and financial resources towards non-CVP, non-CVPIA activities. This must stop.

In the early years, it made sense to invest in the problems wholly unrelated to the CVP - because there was great potential for a high biological return on the dollar (Butte Creek fish passage projects are a good example). However, with the advent of additional sources of ecosystem restoration money related to CALFED, it is time for Interior to refocus on fully funding CVP related projects prior to funding work that is wholly (or even partially) related to the construction and operation of the CVP.

Today, CVP contractors and customers have a $30 million problem with the CVPIA that is receiving almost <u>no attention</u>. The reason we have not been more aggressive about this issue is that we can't find a solution that doesn't also work against CALFED funding.

Problem #1: In the current year (FY'99), $16 million of the money collected from CVP customers for CVPIA implementation cannot be spent. This problem results from the

Restoration Fund being cut by $16 million in the Appropriations process. At the same time, Congress directed that the money be collected (even though it was unspendable). The genesis of this problem can be found in how the CVPIA is written, which makes the Restoration Fund "score" and thus creating the incentive for the appropriators to cut the Fund.

It is easy to understand what upsets us about this:

a. Millions of dollars are extracted from the CVP community in the name of environmental improvement, but end up in a reserve account in the U. S. Treasury - possibly lost forever.

b. No other sector of the water community is paying for ecosystem improvement like the CVP is. That is an inequity. Then our money doesn't even go for environmental improvement. That is injustice.

c. The last time Interior went through a formal process (Garamendi) to "administratively" solve the problems with the CVPIA, this issue was prominently identified but then promptly ignored.

Interior now proposes that the scoring problem be fixed by the appropriations committees. We are concerned with such a band-aid approach, and we understand members of both the authorizing and appropriating committees share the same concerns.

Problem #2: The President's FY '00 Budget proposal cuts Energy and Water spending for CVPIA implementation by 50% - to $15 million from the FY '99 level of $30 million. This is a significant reduction in money, but more importantly, it reflects a diminishment of support by the Administration for continued ecosystem improvement under the CVPIA.

When taken together, the $16 million cut from the Restoration Fund by Congress and the $15 million that the Administration has proposed to cut from CVPIA implementation, will leave the Central Valley restoration effort $31 million short. We could work to restore these funds, but as is well known, our success would likely come at the expense of the CALFED funding.

The solution, we believe, lies with the Interior Department, which has the responsibility to be an aggressive advocate for full funding of CVPIA programs and has an obligation to achieve CVPIA statutory objectives efficiently, reasonably, and accountably. We are uncertain why the Department has failed to carry out this responsibility.

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10 May 1999

Mr. Alan Candlish
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Re: CVPIA-PEIS Supplemental Analysis and Preferred Alternative Impact Analysis

Dear Al:

The following comments come as the result of information received at the 29 April 1999 CVPIA-PEIS (PEIS) "interest group meeting" (IGM meeting). By commenting now (prior to disclosure of the Supplemental Analysis later this month) it is our intention that your team's Supplemental Analysis might be amended to account for fundamental flaws which jeopardize the viability and "reasonableness" of the final PEIS analysis due in the Fall of this year. Certainly, additional comments will be forthcoming upon the release of the Supplemental Analysis.

Baseline for Analysis -- Masking Impacts

As we have cautioned since the earliest PEIS "interest group meetings", by inflating the baseline (No Action Alternative) against which the Central Valley Project Improvement Act (CVPIA) implementation alternatives are measured, the impacts of proposed CVPIA implementation are heavily masked. For instance the No Action Alternative includes the Bay/Delta Accord environmental activities, themselves premised on implementation of CVPIA. Also, as disclosed in the IGM meeting, the "revised" PROSIM analysis perhaps more accurately reflects "current" CVP and SWP operations and "decisionmaking" or "logic". It is my understanding that more than 200 changes to PROSIM input were made, and it appears that the majority of these changes were of a "policy" rather than engineering, hydrologic or factual nature.

Current CVP and SWP operations and decisionmaking are themselves driven by ad hoc implementation of CVPIA and CalFed "policies". Therefore, the analysis will not properly reflect the impacts of potential CVPIA implementation against a true No Action condition, but instead reflects a Preferred Alternative implementation of CVPIA as measured against the ad hoc implementation already occurring -- both implementation scenarios being derived from the same set of policy objectives and decisions. The displayed impacts of implementing the Preferred Alternative are thus heavily masked and largely understated.

Mandate for Balance and Co-Equal Project Purpose Priorities

CVPIA is not simply a statute mandating environmental improvement actions at any cost To the contrary, CVPIA directs the Secretary of the Interior to operate the CVP in a manner that balances co-equal Project purposes -- environmental improvement does not take precedence over water supply obligations. The fundamental PEIS assumptions and analytical decisionmaking parameters fail to recognize this critical statutory element.

While the Secretary has discretion in how he chooses to execute particular CVPIA authorities or mandates, these choices and actions are circumscribed by the CVPIA mandates that such decisions and Project operations give equal priority to all Project purposes and obligations. On this point, knowing that the environmental actions authorized and directed by CVPIA would have adverse impacts on the water supply Project purpose, Congress specifically charged the Secretary to take "reasonable" actions relative to development and implementation of environmental improvement actions, and further directs the Secretary to develop a program to increase the yield of the CVP "by the amount dedicated to fish and wildlife purposes" under CVPIA, "...in order to minimize adverse effects...upon...CVP water contractors resulting from the water dedicated to fish and wildlife under .." CVPIA.

As you are aware, current ad hoc CVPIA implementation programs, policies, guidelines and objectives do not balance operations to meet Project purposes in equal priority. Without doubt, CVP operations and CVPIA decisionmaking give clear priority to environmental demands; treating water supply and power generation objectives as secondary rather than co-equal. The revised PROSIM modeling analysis vividly demonstrates this fact and in doing so illuminates this fundamental error not only in current CVPIA implementation, but in the PEIS analysis. For example, the analysis assumes that water customer deliveries will be continually reduced in order to meet environmental demands. In the water year types of less than "normal" hydrology, the PEIS modeling assumes that shortages of up to 100% will be imposed on agricultural service contractors -- 50% for M&I, and apparently 50%+ for water rights holders There is no statutory basis for such assumptions, and certainly they are contrary to the intent of the CVPIA relative to equal priority given to all primary Project purposes.

Conclusions Reached But Not Illuminated

Despite the unbalanced assumptions and analysis, the "new" PROSIM runs demonstrate that CVPIA execution makes even the No Action environmental and water supply objectives impossible to meet in Below Normal, Dry and Critically Dry year types without further "policy" directives or statutory authority relative to CVP operations. For example, the revised PROSIM modeling analysis concludes that in years of less than "below normal" hydrology, Shasta Reservoir carryover is reduced to near dead storage While such a condition is mathematically "modelable", it belies the fact that such an operation would run afoul of Endangered Species Act requirements for protected winter-run salmon and CalFed Delta objectives. Likewise, temperature modeling for winter-run, based on end-of-month storage or average monthly temperature conditions, masks the fact that the No Action and Preferred Alternative actions will likely in practice, on a day-to-day basis, significantly and adversely impact winter-run salmon.

It is not enough to insert a few comments into the analysis to describe these astounding facts and allude to a need for development of "mitigation" measures Instead, such a modeling result should be a cue that the assumed CVPIA implementation regime is not only unreasonable, but impossible, and that an alternative implementation scenario need be devised. If this sounds like "going back to the drawing board", such a move may be required. As we have repeatedly commented, assuming unrealistic and unreasonable conditions as the basis for the analysis results in a mistaken or misleading outcome. With proper CVPIA implementation and the future of the analysis of the proposed CalFed program in the balance, anything that can be done to enhance the validity and applicability of the PEIS, should be initiated without delay.

Al, as I noted above, these comments are preliminary and based only on the outline of information disclosed during the latest IGM meeting. Upon review of the Supplemental Analysis, we will provide additional input. It is my intention that through this type of dialogue, we can help to ensure that the final PEIS is as accurate and useful as possible. If you have any questions or if it would be helpful for us to further confer, please let me know.

Sincerely,

Greg Wang

Central Valley Project Long-Term Contract Renewal

Background

The Central Valley Project Improvement Act (CVPIA) section 3404 prohibits long-term (25 year term) renewal of contracts until completion of "appropriate environmental review" including the CVPIA Programmatic Environmental Impact Statement (PEIS). Interim renewal contracts of three and two years in length have provided the necessary bridge between expiring long-term contracts and future long-term renewals under CVPIA. More detailed environmental evaluation is expected to be undertaken on a regional basis following completion of the PEIS.

Since enactment of CVPIA in October 1992, the Department of the Interior (Interior) has relied upon interim guidelines and unofficial administrative policies (not conforming to Administrative Procedure Act requirements) to direct interpretation and execution of CVPIA provisions. All interim renewal contracts executed since 1992 have included significant provisions implementing CVPIA, as well as various other Reclamation laws and policies adopted since the original long-term contracts were signed.

Process for Long-Term Contract Renewal

Interior has drafted an aggressive timeline for completion of long-term contract renewal by Thanksgiving 1999. To achieve this objective, Interior has indicated that it intends simultaneously to finish necessary environmental evaluation while negotiating CVPIA interpretation and implementation policy as a part of the long-term contract renewal negotiations.

CVP Contractor Concerns - Process & Substance

While CVP contractors need and want the stability resulting from long-term contractual relationships, the contractors are concerned that the Interior approach does not provide proper factual or procedural foundation for the contemplated long-term contracts. Critical environmental, project operations and CVPIA policy implementation data may not be available to either the United States or the CVP contractors until after the time for contract negotiation has expired under Interior's current timeline.

This lack of critical information will hinder good faith and fair dealing during the negotiations, and could subject the resulting contracts to possible challenge. Given the ten years of litigation over 14 Friant contracts because of alleged defects in environmental documentation, the posture of the case on the CVPIA section 3406(b)(2) water (800KAF), and the recent threat of litigation over the pending 112 long-term renewals under CVPIA, it is essential that properly articulated Interior policies and program implementation rules are adopted.

Interior is currently finalizing its Basis of Negotiation, an internal document establishing negotiating strategy and parameters. In advance of the fundamental information derived from completed environmental documentation or legal and policy interpretation of the CVPIA, Interior's ability to established a justifiable and good faith negotiating posture is questionable at best. Likewise, without knowledge of necessary facts, CVP contractors cannot evaluate the "playing field" or their own legal or negotiation options.

Mr. DOOLITTLE. Mr. Gartrell, I don't think in the years I have been sitting here as chairman I have ever heard—I don't think that I have ever heard much criticism at all, especially from the urban water users, of the future for water in terms of the cutbacks. You have graphically portrayed that today. You do know, Mr. Dan Nelson, I assume, right?

Mr. GARTRELL. Yes.

Mr. DOOLITTLE. You two ought to get together. You both have sort of the two sides of the coin, it sounds like.

Mr. GARTRELL. We worked quite a bit together. We worked very hard on the Bay-Delta Accord, all three of us, the Nelson brothers and myself.

Mr. DOOLITTLE. Well, if even urban supplies are being faced with 50 percent cutbacks, then what is your position on storage?

Mr. GARTRELL. Our district believes that that is probably going to be an essential component coming out of the CALFED process. I don't think anybody is going to take a position now exactly which element is going to come out on top. But certainly there is, I think, going to be a necessity for storage, whether there is conjunctive use or new offstream storage. While we are doing a lot of conservation and will be continuing to be doing more conservation and more reclamation, that does not get you through a dry period. You need to do something with the water that you save. And for both the environment and for water supply reliability, I think storage is going to be important.

Mr. DOOLITTLE. Mr. Nelson, you indicated you had—well, Mr. Barry Nelson, that you had a plan for how to increase water reliability. Could you just summarize for me what your thoughts are in that regard?

Mr. BARRY NELSON. Briefly, I would be happy to. As I mentioned, we provided your staff with a copy of that blueprint, I think the most detailed water supply reliability comments CALFED has received from any of the stakeholder groups. We recommend a number of different tools. We don't give a simple prescription for any one of these tools because we think they all could be implemented in different ways. There is a laundry list of tools increasingly, we are realizing, that we need to select from to provide reliability. It's not just storage, although I will get to that at the end. It's also conservation programs, agriculture and urban water reclamation programs, water transfer programs.

There has been a lot of conversation about and controversy about land fallowing, but permanent land retirement has a place that makes a lot of sense. We are also seeing land fallowing arrangements within agriculture that are happening voluntarily with no outside planning that we think represent sound planning that is happening right now from agriculture. There is a broad range of strategies.

I would like to close, however, by emphasizing one of those; that is, the rule of improved groundwater management. We built the CVP in substantial part because we said it was going to solve our groundwater problems. It didn't. We then built a State water project to solve our groundwater problems. It didn't. We are still now in some parts of the State seeing significant groundwater concerns. We as a State have never wrestled with the question of

groundwater regulation as most western States, almost all of the western States have. We are very skeptical of claims that we can either solve our groundwater problems through additional surface storage or that we can solve environmental problems with additional surface storage.

We think that when we look at improved groundwater management, both conjunctive use and other kinds of improved groundwater management, that there is tremendous potential there. Yes, that is storage. We think it offers the potential both to be more compatible with an ecosystem restoration program and also to be dramatically more cost effective, which is going to be very important more when it is time to finance the final CALFED package.

Mr. DOOLITTLE. Mr. George, are there ways to meet the needs that you have for the Trinity River that would tend to temper the amount of water that must be redirected down the Trinity River?

Mr. GEORGE. There absolutely is, Mr. Chairman, and I would like to sit down with you at some point and go over some of the contents within the flow study. There is some mechanical restoration efforts that are also included, aside from just the flow decisions that are in the flow study. I think that it would be helpful and insightful if we could go over those when they are published.

Mr. DOOLITTLE. Okay. I appreciate that. We will look for that opportunity. Well, there is a lot of hope being placed in CALFED and it certainly has a good potential. There has been real evidence of progress in some areas that have been drawn out today, improvements have been made, and things in the testimony that have been mentioned so far.

Mr. Dan Nelson, you heard my exchange with the Secretary over your testimony. He is not here, but we can send him the record. Do you have any further elaboration on that that you want to offer?

Mr. DANIEL NELSON. Yes, I do. In referring to page 5 in the third line, I would like to insert the word "below" in front of "normal years." In editing this, the sentence reads "years that are less than below normal years." My sense is what occurred is the "less than below" was looked at as a double negative and so the word "below" was taken out. But below normal years is a year type, and so, the word "below."

However, that does not change the fundamental point, and that is that the PEIS and the new modeling that we have indicates that we have a broken project, that the Central Valley Project in many years cannot even meet its regular contractors as well it can't meet its historical water right contractors in many years as well. And so I think that the fundamental point is still valid. That is, that we need to give serious attention about the viability of the Central Valley Project as it exists. And we are going to have to figure out how it is that we can accomplish some of these environmental objectives in a way that is more reasonable to the Central Valley Project and in a way that is consistent with the CALFED approach.

Mr. DOOLITTLE. Okay. Mr. Radanovich is recognized for his questions.

Mr. RADANOVICH. Thank you, Mr. Chairman. In the earlier conversation, I was pleased to hear the Secretary talk about some discussion, at some point in time, this CALFED process, of the consideration of CVPIA and even perhaps the ESA in some of the regu-

latory issues in those bills being merged into and discussed through the CALFED process. That's one thing that I am looking forward to, especially from the agriculture side of the implementation of those laws and how we can streamline those. One of those issues is tiered pricing.

Mr. Nelson, I think that I would like you to comment on that. One, if you could elaborate on why CVPIA and tiered pricing just doesn't seem to be working.

Mr. DANIEL NELSON. On the first point of the relationship with CVPIA and the CALFED process, I was very encouraged by the Secretary's comments of trying to implement CVPIA in a comprehensive way and taking into consideration the impacts to water users.

Meeting environmental objectives while minimizing impacts. That's very encouraging to hear from the Secretary of the Interior. Frankly, what we are seeing is a disconnect between that policy call from how the laws are actually being implemented out in the field. What we are experiencing out in the field isn't a collaborative, comprehensive-type approach that I think we all envisioned when we signed the accord. As you recall, we referred to the accord as a new way of doing business in California, a new way of addressing water resources in California. Comprehensive, collaborative. We are no longer experiencing what it is we envisioned. We are once again back to where we were in pre-accord, pre-accord days, and that is where individual agencies are implementing individual components of very specific statutes in a very narrow way, not taking into consideration how it fits into a comprehensive plan. My sense is that's the key fundamental problem with the implementation of CVPIA, is that each individual component has been implemented unilaterally from the other components; and then, in addition to that, to take it the next level, CVPIA has been implemented unilaterally from the more comprehensive discussions that we have had from CALFED. From our perspective, that's the key problem of what it is that has occurred and how it is that we have implemented CVPIA post-accord. And we can be more efficient in obtaining our environmental objectives, I think, if we were to take a broader and more comprehensive perspective in implementing this.

The tiered pricing thing specifically. Tiered pricing, there is a lot of merit to the concept. In fact, most of our member agencies and most CVP agencies have a form of tiered pricing that they have implemented on a districtwide basis.

There is three points for tiered pricing. Number one, if you are a contractor that your Federal contract doesn't meet your demands, and so you are continually using all of your CVP contract plus you are out looking for additional water, the tiered pricing really doesn't serve as an incentive for you to use less water. You are going to need to use all of your allocation anyway. So it only becomes punitive at that point.

The second point, conjunctive use. We all recognize the importance of doing conjunctive use and expanding and optimizing conjunctive use in California. Essentially, tiered pricing could penalize those who want to use conjunctive use. I think that we need to take a very serious look at that.

Then the third point which kind of umbrellas the other two, tiered pricing is not a one-size-fits-all concept. You have to—as I said earlier, there are some appropriate and legitimate uses for tiered pricing. Most districts have a form of tiered pricing, but it's almost impossible to come up with a one-size-fits-all that is equitable.

Mr. RADANOVICH. Thank you. These are the issues that I hope that are brought up during the CALFED process. I want to applaud all of the stakeholders for keeping this together. I personally am relieved that we are now beginning to study issues that increase water storage as part of the CALFED process. I think as this issue moves forward, we need to have a policy and in some areas where CVPIA may be deficient in that, policies where agriculture has the opportunity by incentive to enhance the environment in their own area through the policy of CVPIA as it might be modified through this CALFED process, because right now the incentive is almost the opposite and it doesn't work for agriculture to be sensitive to the environmental needs in that area.

If there is one complaint that I have about CVPIA it is that it doesn't allow for that, it's not really incentive based. I would like to see that happen as this thing develops and as we talk more as stake holders in the CALFED process to see some modifications in those laws. Thank you.

[The prepared statement of Mr. Radanovich follows:]

STATEMENT OF HON. GEORGE RADANOVICH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. Chairman—Thank you for holding this hearing to provide the opportunity to discuss water issues in the Central Valley of California. I appreciate the ability to address the CALFED Bay-Delta program and the Central Valley Project Improvement Act (CVPIA).

I represent a Central Valley district comprising the two largest agricultural producing counties in the nation. Water is the lifeblood of the economy in this agricultural region that grows over 250 of California's crops. With its fertile soil, temperate climate and water supply capabilities, the Central Valley produces eight percent of the agricultural output in the U.S. on less than one percent of the nation's total farmland. Valley farmers alone grow nearly half of the fresh fruits and vegetables grown in the entire nation.

As a farmer, I am a conscientious steward of the land and a strong environmentalist. Agriculture and the environment truly go hand in hand. The very livelihoods of farmers are directly connected to the land and its future. The agricultural community recognizes water as a precious resource to be used wisely, and they know proper water management is essential and benefits all users.

In order to meet the ecosystem, water supply and water quality needs in California, I worked, along with many individuals present here today, toward the enactment of the California Bay-Delta Ecosystem Enhancement Act in 1996. Since that time, Congress has continued its commitment to CALFED by funding this program to build consensus on decisions that effect the future of water in the state of California.

I am encouraged by the recent agreement among stakeholders to support $95 million in FY 2000 for CALFED with $60 million for ecosystem and $35 million set aside for non-ecosystem purposes, such as water storage studies and water transfers. I support the $95 million in funding to bring balance to the CALFED process for agricultural, ecological and urban water users.

My greatest concern, and that of my district's, is the impact CALFED has on agriculture. Water reliability is vital. The Central Valley economy is dependent upon water assurances. Therefore, scientifically sound and locally supported water conveyance and storage facilities are needed to address the supply void in California.

As the CALFED process moves forward, the protection of private property is also a high priority of mine. Private property rights must be secured throughout the process. Additionally, CALFED representatives or other Federal and state officials

must obtain written permission from landowners when conducting surveys or other biological work on private property. Any actions that violate landowners' rights are unacceptable.

With respect to CVPIA, I believe the Central Valley region has invested a great deal of resources to make this law work. Conservation, land retirement and crop changes have all been implemented by the agricultural community in order to achieve the objectives of CVPIA. The economic security of the area is contingent upon water supply reliability. It is time solid assurances are made to provide for the region's water needs.

To the detriment of both the environment and agriculture in the Central Valley, the CVPIA has significantly raised water prices in the area I represent. Tiered pricing under CVPIA, for example, has made it extremely expensive to operate conjunctive use systems. Growers pay enormous prices for the water to be stored, extracted and delivered. This creates a clear disincentive for groundwater storage. A more flexible approach to tiered pricing would encourage contractors to conserve and reduce costs. Such flexibility is necessary for CVPIA to be successful.

The growing population of our state will continue to place an ever-increasing demand on the water supply. Also, over one million acre feet of water is provided for environmental purposes under CVPIA each year. The state has been blessed with five wet years, however, we have no guarantee these conditions will continue. The enormous pressure on California water allocations are predicted to result in a net agricultural water loss of 2.3 million acre-feet each year by 2020. This would severely disrupt agricultural production. Since water is directly tied to the economy, any disturbance in its supply will cause job losses and decreased agricultural production. For these reasons, an adequate water supply must be planned for and secured.

In closing, I believe CALFED and CVPIA, along with other Federal agencies, must coordinate their water efforts to guarantee consistency in the implementation of projects and goals. Efforts to sustain productive farmland in the Central Valley region under the CVPIA and CALFED have made the farmers in my area some of the most innovative water conservationists in the world. Central Valley agriculture can continue to thrive as long a reliable, affordable source of water is available. I look forward to working with you, Mr. Chairman, and those present today to achieve this goal.

Mr. DOOLITTLE. Mr. Dan Nelson, wasn't it your testimony that you only received a full contract-wide delivery in 1 year out the last 5?

Mr. DANIEL NELSON. That is correct. I believe that was in 1995-1996.

Mr. DOOLITTLE. With the exception of that year, the highest percentage that you received was what?

Mr. DANIEL NELSON. Well, to put things in perspective, the 40 years that our member agencies have been taking water from the Central Valley Project, prior to—I believe it was in 1989 they had 1 year in which they weren't allocated a 100 percent supply. I believe that was in 1977, the drought of '77. So in the 40 years we had 1 year of cutbacks. As a result of the '89 through '94 drought and a couple of listings that went around salmon, Delta smelt, Bay-Delta Accord, CVPIA, et cetera, our supply is now at an average of around 65 to 70 percent. That doesn't include—that hasn't modeled in yet the impacts of Trinity River.

Mr. DOOLITTLE. Okay. So 70 percent would be the most that you feel you could hope for now; is that right?

Mr. DANIEL NELSON. No, 65 percent; that's the average supply.

Mr. DOOLITTLE. In a normal year?

Mr. DANIEL NELSON. Yes.

Mr. DOOLITTLE. And so when we enter the next dry period, which it seems likely that's on the verge of happening, then what do you anticipate receiving?

Mr. DANIEL NELSON. Well, the PEIS shows that there are years in which we will not receive any water. Then my recollection is

that in about 35 to 40 percent of the years we will be allocated 50 percent or less. My recollection is also that in 15 to 20 percent of the years we can expect close to the 100 percent supply. So that is the range from zero all of the way to 100, but severe cutbacks is normal and especially when you get into dry years.

Mr. DOOLITTLE. Let's see, 35 to 40 percent of the years you would get less than 50 percent?

Mr. DANIEL NELSON. That's correct.

Mr. DOOLITTLE. And 15 to 20 percent of the years you would get 100 percent?

Mr. DANIEL NELSON. Yes. Then it's sort of tiered in between.

Mr. DOOLITTLE. Mr. Gartrell, your figures on when you would get cut down to 50 percent, what percent of the years would that 50 percent be?

Mr. GARTRELL. It's between 1 year in 10 and 1 year in 15. Around 10 percent between 7 and 15 percent of the years. It is a 25 percent cutback from 100 percent [75 percent allocation] in about 25 percent of the years.

Mr. DOOLITTLE. This is based on what you understand to be in that PEIS?

Mr. GARTRELL. Right.

Mr. DOOLITTLE. Do you think your customers are aware of this impending threat?

Mr. GARTRELL. No. We do have a substantial conservation program that we try to keep them informed. But even keeping them informed on that is difficult. When you have 5 rainy years in a row, people don't tend to think about what is coming around the corner in a dry period.

Mr. DOOLITTLE. But I assume the urban water districts, if they chose to, could include in their bills information about this, right, to their customers?

Mr. GARTRELL. Yes. And we do have our own plans for increasing reliability of our supplies through water transfers, increased conservation, and reclamation. Those take time to implement, but I am pretty confident that most people aren't thinking too hard about this right now.

Mr. DOOLITTLE. Mrs. Beneke, would you like to say anything?

Mrs. BENEKE. Mr. Chairman, I would very much appreciate an opportunity to comment on these issues. With respect to urban supply reliability, I am afraid there is perhaps a bit of a misunderstanding here. I am aware that our PEIS document does have a modeling scenario under which there are some possibilities of a cutback to 50 percent. But we believe that we provide very strong assurances of urban supply reliability under our program.

In fact, the administrative paper that was an outcome of the Garamendi process a year or two ago assures urban water users of a 75 percent supply, at least unless there is a very extreme period of prolonged drought, in which case they could be cut back to public health and safety levels.

Now, again as I explained previously, the PEIS itself is a NEPA document. And, as such, it displays a full range of alternatives, and in many instances it "bookends," we like to say, extreme alternatives which would be extraordinarily unlikely to happen in the real world or to be selected. So I really would not want people here

thinking that there is a good likelihood that urban water users will be cut back to a 50 percent delivery. We think that is extraordinarily unlikely. Certainly before that happened, we would be working very closely with all of the urban water users, using every tool that we have to prevent that result. I would like to clarify that for the record from our position.

Mr. DOOLITTLE. Thank you. What will happen to all of these permanent crops if they get cut back to zero or something, say 50 percent, even?

Mrs. BENEKE. Let me tell you; again, the zero figure would occur, as I understand it—well, it almost is not worth talking about because it is an extremely unlikely scenario. But let me say that it is precisely for this reason that we are so committed to the CALFED process. One of the fundamental elements of that program, of course, is to provide supply reliability to all of our customers. It is one of the reasons that I'm very motivated about participating in the process and trying to steer it to a good result. It is important to us that our customers have a reliable supply of water. Again, I think this zero percent number, I'm not personally familiar with it. I understand that south of Delta got a 95 percent supply in 1996, and a 90 percent supply in 1997. I'm not entirely clear where all of the other numbers are coming from here.

Mr. DOOLITTLE. It's been my understanding that the Department would like to know what the alternative source of supply might be for their urban and ag users, but that information they have been reluctant to disclose to the Department. Is that a correct understanding?

Mrs. BENEKE. Are you directing that to me?

Mr. DOOLITTLE. I don't know who I am directing it to. Do you want to volunteer?

Mr. DANIEL NELSON. Could you repeat the question?

Mr. DOOLITTLE. I understood that the Department has been trying to inquire about what your alternative sources of supply might be in the case of a water-short year, and apparently you—I don't know if it's you, but somebody is not willing to cooperate amongst the urban and agricultural interest just in general, I think, it was represented. Is that true; and if so, tell us why, what your concerns are?

Mr. DANIEL NELSON. We would cooperate in any way we could for any water augmentation plan that we would see coming from the Bureau. I would like to comment briefly on that. There are a couple of places in CVPIA where they talk about water augmentation. One is an expansion of yield study. The second one is a fairly clear directive and authorization to the Secretary to find other sources than just reallocating existing supplies to meet refuge supply needs.

One of the things that I was somewhat discouraged, or I thought was a little bit contradictory in earlier testimony was on the one hand we are going to look at this water supply augmentation to come through CALFED, and so we are going to look at those elements that increase our water supply to meet those components of CVPIA; and the water users, you are going to have to wait until CALFED helps you out with those issues even though they are very clear in CVPIA.

However, CVPIA was a premise to CALFED, and so we need to go forward immediately with the environmental components of CVPIA. And, as you have heard from testimony, we have done that. We have implemented the environmental components of CVPIA, but my sense is there hasn't been the same ambitious efforts on the water augmentation plans, and we are now being told that we have to wait for CALFED on those augmentations.

Mr. DOOLITTLE. Anybody else want to comment?

Mr. GARTRELL. Yes. I'm not sure where exactly that—or who might have been unwilling to disclose. We have been trying to work very closely with the Department of Reclamation on that. I think one issue related to that is the concern of urban and ag users that if we acquired other supplies, that would be taken into account in our allocation from the CVP and we would face further cutbacks. That was under discussion during the Garamendi process, and I think we all came out pleased with the results of that, with the assurances that those would be taken into account, but in a way that did not hurt us further; if we go out and acquire supplies to meet the cutbacks that we don't end up in a zero sum game where we just get chopped more.

Mr. DOOLITTLE. So are you satisfied that should not be a concern, then?

Mr. GARTRELL. Right.

Mr. DOOLITTLE. Okay. Well, I thank you, ladies and gentlemen. It's been a long afternoon. Useful testimony. I appreciate it. There will be probably some further questions. We will hold the record open for your timely response. Have a good weekend. With that, the hearing is concluded.

[Whereupon, at 4:42 p.m., the Subcommittee was adjourned.]