

# **CALIFORNIA WATER: A REGIONAL PERSPECTIVE**

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## **OVERSIGHT HEARING**

BEFORE THE  
SUBCOMMITTEE ON WATER AND POWER  
OF THE  
COMMITTEE ON RESOURCES  
U.S. HOUSE OF REPRESENTATIVES  
ONE HUNDRED SEVENTH CONGRESS

FIRST SESSION

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## **CALIFORNIA WATER: A REGIONAL PERSPECTIVE**

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**Tuesday, April 3, 2001  
U.S. House of Representatives  
Subcommittee on Water and Power  
Committee on Resources  
Washington, DC**

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The Subcommittee met, pursuant to notice, at 2:05 p.m., in Room 1324, Longworth House Office Building, Hon. Ken Calvert [Chairman of the Subcommittee] presiding.

### **STATEMENT OF THE HONORABLE KEN CALVERT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA**

Mr. CALVERT. The oversight hearing of the Subcommittee on Water and Power will come to order. The Subcommittee is meeting today to hear testimony on California Water—A Regional Perspective.

Under Committee Rule 4(g), the Chairman and the Ranking Minority Member can make opening statements. If any Members have statements, they can be included in the hearing record under unanimous consent.

California has come to another crossroads in water resource management. For years, water policy was made in isolation in many different agencies and on many different levels. Often, our direction changed in a knee-jerk reaction to events, leaving us with conflicting priorities and contradictory goals. Lack of coordination in the past has produced an unwieldy system that makes water resource management difficult, at best.

However, after years of fighting and fractured policy, competing water interests recognize the importance of a collaborative approach to water resource issues while taking into account the importance of State water rights. Cities, agriculture, industry, and the environment are all connected in their need for water. There are no “silver bullets” to California’s water problems.

California is the sixth largest economy in the world and the Nation’s leading producer in both industry and agriculture. Resource shortages in an economy this large will have a ripple effect throughout the West, throughout this country.

Our Subcommittee has the opportunity to facilitate a dialogue on the role water management plays in California and its effects on

the Western United States as a whole. As we saw in last week's hearing, water users not only in California but throughout the West need operational flexibility, options for additional water storage, conservation, and reuse.

I would like to thank our witnesses for coming out here today and look forward to hearing from them.

[The prepared statement of Mr. Calvert follows:]

**Statement of The Honorable Ken Calvert, Chairman,  
Subcommittee on Water and Power**

California has come to another crossroads in water resource management. For years, water policy was made in isolation in many different agencies and on many different levels. Often, our direction changed in a knee-jerk reaction to events, leaving us with conflicting priorities and contradictory goals. Lack of coordination in the past has produced an unwieldy system that makes water resource management difficult at best.

However, after years of fighting and fractured policy, competing water interests recognize the importance of a collaborative approach to water resource issues while taking into account the importance of State water rights. Cities, agriculture, industry, and the environment are all connected in their need for water. There are no "silver bullets" to California's water problems.

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Mr. CALVERT. With that, I am going to recognize the Ranking Member with us today, Mr. Cal Dooley from California.

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

Mr. DOOLEY. Thank you, Mr. Calvert, and I thank all the witnesses for attending. I know we will get a lot of information. I want to thank the Chairman, too, for his commitment to move forward in trying to find a way that we can put forward a comprehensive CALFED reauthorization that will certainly help to meet the needs of all the water users in California. That includes environmentalists and municipal and agricultural users. Thank you.

Mr. CALVERT. I thank the gentleman.

Mr. Ose is joining us here on the dais, and if there is no objection, we will have him join us through this hearing. So hearing none, so done.

Any additional statements? Mr. Ose, do you have any brief remarks?

Mr. OSE. Mr. Chairman, I did, if I may.

Mr. CALVERT. Certainly. Go ahead.

**STATEMENT OF THE HONORABLE DOUG OSE, A REPRESENTATIVE  
IN CONGRESS FROM THE STATE OF CALIFORNIA**

Mr. OSE. First of all, I want to thank the Chairman and the members of the Subcommittee for allowing me to join you. I am

appreciative of the witnesses taking the time to come to Washington and testify today.

The Sacramento River in Northern California runs through the heart of my district. This great river provides water throughout Northern California. It is the primary source for both the Federal CVP, Central Valley Project, and the California State Water Project, which provide water for three of the four of us up here and millions of other Californians.

Certain water suppliers in my district this year, after five consecutive wet years, are scheduled to only receive 60 percent of their contract amount. These water supplies have been curtailed by the Federal Government despite the express promises made to my constituents that they would be able to fully utilize local water resources in the Sacramento Valley before water would leave the region. We continue to use our water more efficiently, but still find the supply too limited.

In many ways, the solution is quite simple. We must create a larger supply to meet increasing demands. With California's population increasing by nearly 600,000 people per year and an agricultural economy that leads the world, with all due respect to Nebraska, if we continue at the State and Federal level with the current approach to our water challenges, we will be in the same disaster we are currently experiencing with energy.

It is time to take necessary steps to improve our water supplies throughout California. Congress must make a major commitment to authorize the new infrastructure that will be necessary to meet California's water supplies for the next 30 years, including new water storage facilities and fish screens to assure reliable agricultural and municipal supplies and to protect our fish and flora and fauna. There must also be a major commitment that requires Federal and State agencies to partner with local interests to develop and manage their water supplies at the local level.

In light of the above, I am pleased to be here to listen to the testimony today as it relates to perhaps a potential House bill. I am willing to meet Senator Feinstein halfway on the proposed CALFED legislation that she has put forward. It is imperative that specific, binding language be included in these bills authorizing the construction of above-ground water storage facilities, one at Sites, which is north of the delta, and at least another one south of the delta.

We are on the verge of a major opportunity to advance these water supply goals in a way that will deliver real benefits to California and our constituents. I look forward to working with Chairman Calvert and my other colleagues in pursuit of this important goal. Thank you, Mr. Chairman.

Mr. CALVERT. I thank the gentleman.

[The prepared statement of Mr. Ose follows:]

**Statement of the Honorable Doug Ose, a Representative in Congress from the State of California**

Chairman Calvert and Members of the Subcommittee. Thank you for convening this hearing today and allowing me an opportunity to provide this statement for the record.

The Sacramento River in Northern California runs through the heart of my district. This great river provides water throughout Northern California. It's the pri-

mary source for both the Federal Central Valley Project and the California State Water Project, which provide water for millions of Californians.

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In many ways the solution is simple. We must create a larger supply to meet increasing demands. With California's population increasing by nearly 600,000 people a year and an agricultural economy that leads the world, if we continue at the state and Federal level with the current approach to our water challenges we will be in the same disaster we are currently experiencing with energy. It is time to take necessary steps to improve our water supplies throughout California. Congress must make a major commitment to authorize the new infrastructure that will be necessary to meet California's water supplies for the next thirty years, including new water storage facilities and fish screens to assure reliable agricultural and municipal supplies and to protect fish. There must also be a major commitment that requires the Federal and state agencies to partner with local interests to develop and manage their water supplies at the local level.

In light of the above, I am willing to meet Senator Feinstein halfway on the proposed CALFED legislation. It is imperative that specific, binding language be included in the bill authorizing the construction of above ground water storage facilities, one at Sites (north of the delta) and another one south of the delta.

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Mr. CALVERT. Now, I would like to recognize the panel of witnesses that we have first with us today, Mr. Steven Hall, the Executive Director for the Association of California Water Agencies, and Mr. Wayne Cook, the Executive Director for the Upper Colorado River Commission.

I would like to recognize Mr. Hall to testify for five minutes. The timing lights, you gentlemen have both been here before, I believe, and you will know how that works, so we would like to limit the testimony to five minutes to give plenty of time for questions afterwards. Any additional statements you may have, we will be happy to submit for the record.

With that, I will recognize Mr. Cook first to testify for five minutes.

**STATEMENT OF WAYNE COOK, EXECUTIVE DIRECTOR,  
UPPER COLORADO RIVER COMMISSION**

Mr. COOK. My name is Wayne Cook and I am the Executive Director of the Upper Colorado River Commission. The Commission is an interstate compact administrative agency created by the Upper Colorado River Basin Compact of 1948.

The Colorado River Compact of 1922 provided 7.5 million acre feet of exclusive beneficial consumptive use of Colorado River water for each portion of the Colorado River Basin above and below Lee Ferry. However, the Upper Basin guaranteed that deliveries below Lee Ferry would not be less than an aggregate of 75 million acre feet for any period of ten consecutive years. Because of this Upper Basin guarantee, during extended dry cycles, the Upper Basin cannot depend on its full 7.5 million acre feet because of insufficient carry-over storage. Conservative estimates suggest that only 6 million acre feet of depletion may be available to the Upper Basin.



The Upper Basin is currently using about 4.7 million acre feet per year. These Upper Basin depletions are accomplished not by releases from Lake Powell, but by diversions far upstream at private State and Federal projects. Water originating in the Upper Basin but not used for Upper Basin development is stored in Lake Powell to meet our commitments under the 1992 compact. Lake Powell stores and releases water based on the annual relationship of Upper Basin water supply, use, and Lake Powell releases to meet downstream compact commitments. These criteria effectively determine how water, which cannot be reasonably applied to beneficial uses in the Upper Basin, are released from Lake Powell for use in the Lower Basin. These criteria, the operating criteria, are called equalization and attempt to keep Lake Mead and Lake Powell at similar storage levels.

Colorado River mainstream water use in the Lower Basin is controlled by the 1964 decree in *Arizona v. California*, which mainstream water is subject to the Secretary of Interior making an annual determination of shortage, normal, or surplus water conditions in the basin. In the context of these determinations, California is able to divert less than 4.4 million acre feet in shortage, 4.4 million acre feet under normal conditions, and more than 4.4 million acre feet during surplus declarations. These become the limit of California's use unless water apportioned to other Lower Basin States is temporarily available due to non-use.

California water has exceeded its apportionment of 4.4 million acre feet in the past two decades. Users of the other Lower Basin States are now at or near full utilization of their apportionments, as well. Therefore, California must now live within its basic apportionment. This transition can be gradual and can be accomplished within the law of the river.

On January 18 of this year, the Secretary of Interior issued a record of decision for the approval of Colorado River Interim Guidelines to be used by Interior through 2015 in making surplus deliveries to California. These guidelines would make surplus water available to meet Arizona, Nevada, and Southern California's urban water needs through 2015. Without these guidelines, Southern California's urban water needs will not be met.

There is a probability that these needs will be reduced to about 35 percent of surpluses during 2005 and less than 20 percent in 2040, primarily due to Upper Basin development. It is important to note that surplus water necessary to keep Metropolitan Water District's aqueduct full in 2001 would not have been available absent the agreement of these seven Basin States to these criteria.

These guidelines are the direct result of an intense five-year effort by the seven Basin States to reach consensus on the matter of surplus determinations. First set forth within a six Basin State agreement in late 1998, later achieving seven Basin State consensus in mid-2000, these guidelines provided incentives to California to reduce its Colorado River uses to 4.4 million acre feet in normal years. They also provide an assured urban water supply to each of the Lower Basin States during the period of transition and assured that further Upper Basin development will not be jeopardized. Arizona's Central Arizona Project is also provided storage pro-

tection up to a million acre feet as agreed to reparation arrangements.

With California's implementation of the provisions of its Colorado River Water Use Plan, the Metropolitan Water District's aqueduct remains 400,000 acre feet per year short of being at full capacity. Until 2016, this shortfall will be filled by surplus deliveries from the Colorado River. After 2015, Metropolitan will only get surplus water, perhaps less than 30 percent of the time. In order to ensure a full aqueduct of Colorado River water after 2015, Metropolitan Water District will need to facilitate additional agricultural to urban conservation transfers.

An enhanced level of trust amongst the seven Basin States has emerged as a result of these guideline discussions. California must maintain that level of trust and complete its Water Use Plan within the time frame promised to the other Basin States.

I will quit now, and I have some summary comments that I can make later, if appropriate.

Mr. CALVERT. I thank the gentleman.

[The prepared statement of Mr. Cook follows:]

**Statement of Wayne Cook, Executive Director, Upper Colorado River Commission**

My name is Wayne Cook, and I am the Executive Director of the Upper Colorado River Commission. The Upper Colorado River Commission is the interstate compact administrative agency created by the Upper Colorado River Basin Compact of 1948. The member States of the Upper Colorado River Commission are: Colorado, New Mexico, Utah and Wyoming. Since its inception, the Commission has actively participated in the development, utilization and conservation of the water resources of the Colorado River Basin.

The member States of the Upper Colorado River Commission have always given strong support to water resources development in the Upper Colorado River Basin and in particular to the Colorado River Storage Project and participating projects. Through the development made possible by these and other projects, the waters of the Colorado River allocated to the Upper Basin States are presently being utilized and can be utilized for future beneficial consumptive use.

The Colorado River Compact of 1922 provided 7.5 million acre-feet (maf) of exclusive beneficial consumptive use of Colorado River water for each portion of the Colorado River Basin above and below Lee Ferry. (Additional system rights were provided for the Lower Basin States and Mexico.) However, the Upper Basin guaranteed that deliveries below Lee Ferry would not be less than "an aggregate of 75,000,000 acre feet for any period of 10 consecutive years. . .". Because of this Upper Basin guarantee, during extended dry cycles, the Upper Basin cannot depend on its full 7.5 maf allocation per year because of insufficient carryover storage. Conservative estimates made for planning purposes by the Department of the Interior suggest that only 6 maf of depletion may be available as a dependable supply for the Upper Basin in spite of the fact that an average of 15 maf originate in the Upper Basin.

In negotiating the 1922 Compact the Upper Basin States sought to insure its ability to develop its share of the Colorado River in perpetuity, as needs and economic conditions allowed. The Upper Basin is currently using about 4.7 maf per year. These Upper Basin depletions are accomplished not by releases from Lake Powell but by diversions far upstream at private, State and Federal projects.

Water originating in the Upper Basin but not used for Upper Basin development is stored in Lake Powell to meet our commitments under the 1922 Compact. Lake Powell stores and releases water based on the annual relationship of Upper Basin water supply (runoff), uses and Lake Powell releases to meet downstream Compact commitments pursuant to the "Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs" mandated by the Colorado River Basin Project Act (Public Law 90-537). These criteria effectively determine how Waters which cannot reasonably be applied to domestic and agricultural uses in the Upper Basin are released from Lake Powell for use in the Lower Basin in addition to our guarantee of 75 maf in every 10 years. This reservoir operation is called "equalization" and

attempts to keep Lake Powell and Lake Mead at similar storage levels to the extent possible.

Colorado River mainstem water use in the Lower Basin is controlled by the March 9, 1964 decree in *Arizona v. California*. Mainstem water availability is subject to the Secretary of the Interior making an annual determination of shortage, normal and surplus water conditions in the Colorado River Basin. In the context of these determinations, California is able to divert less than 4.4 maf (shortage), 4.4 maf (normal) or more than 4.4 maf (surplus) for use in Southern California. These become the limits of California's use unless water apportioned to other Lower Basin States is temporally available due to non-use.

California's water use has exceeded its apportionment of 4.4 maf for the past two decades. Users in the other Lower Basin States are now at or near full utilization of their apportionments as well, therefore California must now live within its basic apportionment. This transition can be gradual and can be accomplished within the Law of the River.

On January 18, 2001, the Secretary of the Interior issued a Record of Decision for the approval of "Colorado River Interim Surplus Guidelines" to be used by Interior through 2015 in determining "surplus" deliveries to California. These Guidelines under average water supply assumptions would make surplus water available to fully meet Arizona, Nevada, and Southern California's urban water needs through 2015. Without these Guidelines, the probability of these needs being fully met reduces to approximately 35 percent by 2005 and less than 20 percent by 2040. It is important to note that surplus water necessary to keep MWD's aqueduct full in 2001 would not have been available absent the agreement of the seven Basin States to these Guidelines. The increased risk in the future of not having a surplus determination is a direct result of the Upper Basin States exercising their rights to increase their depletions pursuant to the Colorado River Compact of 1922.

These Guidelines are the direct result of an intense five-year effort by the seven Basin States to reach consensus on the matter of surplus determinations. First set forth within a six Basin State agreement in late 1998, and achieving seven Basin State consensus in mid 2000, these Guidelines provide incentives to California to reduce its Colorado River uses to 4.4 maf in normal years. They also provide an assured urban water supply to each of the Lower Basin States during the period of transition, and assurance that further Upper Basin development will not be jeopardized. Arizona's Central Arizona Project is also provided shortage protection of up to 1.0 maf as a result of agreed to reparation arrangements where California contractors would limit their use of Colorado River water to mitigate the impacts of any declared shortage conditions on other Lower Basin States.

With California's implementation of the provisions of its "Colorado River Water Use Plan," MWD's aqueduct remains 400,000 acre-feet per year short of being at full capacity. Until 2016, this shortfall will be filled by surplus deliveries from the Colorado River. After 2015, MWD will only get surplus water perhaps less than 30 percent of the time. In order to insure a full aqueduct of Colorado River water after 2015, MWD will need to facilitate additional agricultural to urban conservation transfers.

An enhanced level of trust amongst the seven Basin States has emerged as a result of these Guideline discussions. California must maintain that level of trust and complete its Water Use Plan within the time frame promised to the other six Basin States.

In summary, Upper Basin development can and will continue under the terms of the Colorado River Compact of 1922 until Upper Basin depletions approach the dry cycle firm yield available to the Basin. This continued development will cause lower average reservoir conditions in Lake Powell and Lake Mead, respectively. Lower lake levels at Lake Mead result in fewer opportunities for surplus water availability on the Colorado River after 2015. This decreased probability of surplus water will require MWD to find other solutions internal to California to be able to rely on a full Colorado River Aqueduct. The interests of the other six Basin States, from 1922 to present, have been to achieve as much certainty and security as possible in the use and allocation of the Colorado River System. The Compact assured the Upper Basin the right to develop its share of the Colorado River in perpetuity. The Upper Basin has and will continue to rely upon the legal framework that now requires California to reduce its use of Colorado River Water to 4.4 maf in years of a normal determination

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Mr. CALVERT. Mr. Hall, you may begin your testimony.

**STATEMENT OF STEVEN HALL, EXECUTIVE DIRECTOR,  
ASSOCIATION OF CALIFORNIA WATER AGENCIES**

Mr. HALL. Thank you, Mr. Chairman, members of the Subcommittee. My name is Steve Hall. I am the Executive Director of the Association of California Water Agencies. We represent local water agencies throughout the State of California. Our largest members serve as many as 17 million people in California and our smallest ones serve as few as five.

What I would like to do to make maximum use of my time is refer to some charts that I believe the Committee staff have provided to the members of the Subcommittee. They describe what has been going on in California, and I think the reason it makes sense to present them here is it not only represents what is going on in California, it represents something similar to what is going on throughout the West. So if I can refer the Subcommittee to these bar charts, I will walk you through them quickly.

The first simply represents the trend lines in annual winter run salmon escapement to the upper Sacramento River. The winter run is endangered species and you can see why. Through the 1970's and 1980's, populations were fairly healthy. Beginning in the early 1980's, they dropped dramatically, and in the late 1980's/early 1990's, they dropped to such critically low levels that they were listed as endangered.

Now, there was a reaction to that and the reaction is shown on the next chart. This shows that beginning in 1991, the Endangered Species Act kicked in to protect these species and began reducing water deliveries to water users in many areas of California. Then in 1992, the Central Valley Project Improvement Act was passed, which put fishery and other environmental needs on an equal basis to water supply and there was another drop in water supplies. Then in 1994 and 1995, an accord was signed which reallocated a substantial portion of the remaining supplies to the environment. And then beginning in 1996, there have been a number of other actions under this Central Valley Project Improvement Act, all of which have led from water deliveries out of the Bay Delta Estuary, or the hub of our water supply system in California, from over five million acre feet annually to less than 2.5 million acre feet annually, a drop of over 50 percent.

Now, of course, the next chart shows that just because our water deliveries have dropped does not mean our population has stopped growing. From 1987 to 2001, it grew from 28 million to 34 million people. It is projected by 2020 to grow to 47.5 million people.

We clearly have to tackle this problem, this tension between water for the environment and water for our economy and our quality of life. So if you will look at the next chart, it shows the funding dedicated to environmental restoration. We have supported this funding, those of us in the water community, because we recognize that until populations of species are stabilized, water supplies will not be stabilized. So beginning in 1995, we passed first Proposition 204, which was a \$1 billion bond issue at the State level, and in the last year, in March of 2000, we passed a \$2 billion bond issue, which was for both environmental restoration and water supply and water quality improvement.

So you can see from 1995 through 2000 the funding for environmental restoration has ramped up substantially, and the next chart shows there has been a corresponding biological benefit. This shows fall run escapement on the Sacramento and major tributaries. You can see that in the early 1990's, the numbers were low. Since we began investing in these ecosystem improvements, you can see the numbers have gone up substantially. We believe they will continue to rise as we continue to make these investments.

And now, if I may get to the punch line, we can and we need to make similar investments in our water infrastructure system. The next chart shows potential increases in water deliveries if we implement the projects that are listed on the right-hand axis of that bar chart.

I am not going to walk through each one of these projects, but every one of them is something that provides additional system flexibility. It could be conservation, water reclamation, a bypass system in one instance around a reservoir that drops to such a low level that the water quality is impaired. All of these help meet our water needs in California while improving environmental conditions.

And then, lastly, the investment cannot stop there. We also have to invest in new storage, both surface and groundwater storage. The last bar chart shows, first of all, our baseline, what storage reservoirs that have been built in the last few years, and then as the bar charts rise, each one of those different colors shows various projects that are contemplated in California, part of a State-Federal partnership that developed a blueprint for California called CALFED. If we make these investments, California will be able to meet its water needs both to fuel its economy, improve its quality of life, and keep a sound and healthy environment.

Congressman Calvert, the Chairman of this Subcommittee, has indicated his intention to introduce legislation to authorize this. I want to pledge to the Chairman and to the members of the Subcommittee that ACWA will be a full and willing partner in the crafting of that legislation, and I thank you for the opportunity.

Mr. CALVERT. I thank the gentleman.

[The prepared statement of Mr. Hall follows:]

**Statement of Stephen K. Hall, Executive Director, Association of California Water Agencies**

*I. Introduction*

Chairman Calvert, members of the Subcommittee, thank you for the opportunity to speak before you today. My name is Steve Hall, and I am executive director of the Association of California Water Agencies (ACWA) the largest and oldest collection of public water agencies in the country. ACWA's members are responsible for 90 percent of the water delivered in California—our smallest member serves fewer than 50 people, and our largest serves 17 million urban southern Californians. This testimony, and the attached graphs are intended to illustrate the looming water crisis that faces California, and the need to make investments now to avert that crisis, in California and throughout the West.

*II. California's Water Needs*

Today, California's myriad water systems support 35 million people and the world's seventh largest economy. The state's water infrastructure is a network of projects large and small, assembled over decades and with scores of different funding sources. ACWA and its member agencies have played a major role in every one of California's large scale water development efforts, from the installation of public hydropower facilities, to construction of the Central Valley and State Water

Projects, to the environmental restoration efforts currently moving forward all across the state.

But while the development of California's water system was undertaken with the best engineering available at the time, no technology can completely overcome the simple reality that 75 percent of our state's water falls in its northern half, while 75 percent of its people live hundreds of miles to the south. In between are scores of unique ecosystems, each with its own water needs amid growing human water requirements.

The vagaries of weather patterns and rapidly changing population trends have a way of confounding water supplies, and this is one of the guiding truths of California. To overcome this obstacle, planners have employed a variety of means over time to develop and move water to the people who need it. In the 1930s the Federal Government constructed the Central Valley Project. A network of dams, levees and canals, the Federal CVP is the state's largest water project and today delivers roughly 3 million acre-feet of water to farms and cities, and underpins the state's agricultural economy while providing essential flood control.

In the 1960s California embarked to build its own water supply network through the State Water Project. The SWP today moves from 2 to 4 million acre-feet of water throughout the state, keeping food prices stable and affordable and providing drinking water for millions of people in the valley and south state.

But while these systems are impressive, in the years since construction of the CVP and SWP, no equally grand water project has been allowed to move forward. The very few reservoirs built since the SWP were built only after years of public review and inevitable political controversy. Nevertheless, during this same time, California's population has continued to grow, and has nearly tripled since concrete for the SWP was poured. In the last 11 years, only two regional reservoirs have been built in California, even though eight million people have come to the state during that time. Meanwhile, new awareness of environmental water needs and commitments to protect salmon have further taken developed supplies away from water users and re-allocated it to the environment. Over the last decade, several million acre-feet of water have been shifted each year to meet new environmental mandates. This rededication of resources, coupled with rapid population growth, has vastly destabilized California's water picture.

As a result, California's water system—constrained by its finite supplies—exists in a continual state of conflict between multiple uses and competing priorities. Beneath the larger disputes over finite water supplies and how to use them, lie even more conflicts over the quality of delivered water, its source, even its temperature in the streambeds. Under this fractured scenario, California has for years abandoned water issues to the political realm, missing out on key opportunities to work together to stabilize its water supply picture and plan for the future.

To compensate for these conflicts, water managers have gone to great lengths to stretch existing water supplies. California leads the nation in water recycling and reclamation efforts. Groundwater recharge and desalination projects are in place in a number of communities across the state. Drip irrigation and farm conservation systems are growing 50 percent more food and fiber than was grown 20 years ago on the same amount of water. And local water managers have implemented water conservation efforts that are so successful that southern California's large urban centers today import the same amount of water they did in 1975. A decade ago California water agencies voluntarily began a massive water conservation program. Today more than 150 California water agencies are spending millions of dollars each year on conservation. The result is that today California saves about a half million acre-feet of water a year through conservation.

Only through such aggressive, pioneering measures have California's existing water needs been met. But most of California's water system was built decades ago, before modern construction techniques were available. Conservation and reclamation efforts can do a lot, but they cannot singlehandedly meet California's modern water needs. As a result, not much more can be squeezed from a system that is outdated and grossly inadequate. The outdated, undersized system in place today can barely meet the needs of California's agricultural, urban, environmental and business sectors during wet years as recent events have shown, and would be unable to meet even basic needs in a sustained drought.

In spite of the many systems in place to equitably distribute water supplies, new mandates proliferate, requiring environmental diversions of water, and resulting in multiplied conflicts. While well intentioned, the implementation of the Endangered Species Act, Clean Water Act and Central Valley Improvement Act are now demanding 21st century performance from a system that essentially pre-dates the Cold War. In 1999, after a fifth straight wet year, this fact became clear when regulatory agencies unilaterally shut down water pumping plants to protect migrating

schools of Delta smelt. This action nearly brought Silicon valley industries to a halt, and threatened to cut off key supplies to valley farms at the peak of the irrigating season. While it is true that society as a whole has come to put a greater premium on protecting natural resources, the pressures of increasing population have made it more difficult to do so.

Many of the environmental statutes today governing water management ignore this basic tension, simply trying to force a change back to a world without man's footprint. The limitations of this approach are increasingly being seen in the strains on California's water system. If we are going to satisfy both our desire to protect fish and waterfowl, while retaining a viable "habitat" for 35 million human beings, we are going to have to invest in new management structures based on state-of-the-art science and technology. These include new irrigation equipment, more efficient residential use, and more recycling of water. But even if we do all these things, we also need more storage of water—so that there will be enough in the drier years for both people and fish.

Droughts and flood meanwhile play havoc with the state's water reliability, placing the state's population and economy in an increasingly fragile position beneath a looming water crisis. California needs ways to balance competing needs while accounting for its varied weather, and this is only possible through investment in its antiquated water infrastructure.

### *III. Interdependence with Other States*

Like much of the American west, California's water system operates in a state of close interdependence with that of other states, even Mexico. The Klamath river flows across the Oregon border. Lake Tahoe sits astride our eastern neighbor, Nevada. Watersheds and rivers do not comply with local or interstate boundaries, and as such, necessitate watershed planning across agency lines and state borders.

Perhaps the best example of California's interdependence with her neighbors is played out on the Colorado River. In 1922, representatives of seven states, including California, negotiated the Colorado River Compact - a road map for dividing the Colorado's waters for flood control and economic uses in each of the states. The compact was meant to remove causes of present and future controversies surrounding apportionment of the river's waters. But those who signed the compact 79 years ago could not have predicted the enormous urban growth in the desert Southwest, the emphasis Americans would place on protecting the environment in later decades, or the technological advances that have since come about.

For years, California has taken up to 1.3 million acre-feet more than its contractual share of 4.4 million acre-feet from the Colorado, enabling billions of dollars in annual productivity from southern California industry and agriculture. But now, neighboring states need that water and a new agreement has had to be reached. Accordingly, California is reducing its use of the Colorado so that its neighbors can also grow. This interdependence, and the successful adoption of a compromise, will foster balanced growth in the American west. More importantly, the solution will be graduated in over time, preventing disruption to the relevant communities and protecting the ecosystems that have grown up around an altered, though living river.

On Lake Tahoe, joint partnerships between Nevada and California have enabled the preservation of a national environmental and recreational treasure. Interstate legislative successes like the one forged last year between the Congressional delegations of California and Nevada provides the blueprint of collaboration necessary to promote regional water stewardship. This spirit should infuse efforts to resolve the water challenges that lie ahead.

In each of these examples, neighboring states have forged compromises that enable California to produce. In return, the United States has in California an engine of economic growth that propels its varied economies, develops new technology and feeds millions of people beyond its own borders. Just as electricity is transmitted across state lines to cities in California, so has the water it shares with its neighbors brought benefits to many on both sides of the state line.

But by the same token, unless we lead the way to increased California water capacity, the rolling blackouts currently buffeting western power supplies could very likely blackout local water supplies, with far more severe results.

### *IV. Benefits of an Improved California Water Picture*

Environmental mandates adopted during the past generation aim to stabilize declines in fish runs and wetlands, and redress environmental damage that has been caused by an infrastructure system constructed before the age of environmental protection. At the same time, these efforts have exchanged environmental progress for

economic uncertainty, to the point where today, real businesses are facing skyrocketing costs, and making real decisions to leave the state.

If California's water supply picture can be stabilized, considerable additional progress can be made on behalf of the environment. A secure, modern water infrastructure that captures more of the excess water during floods for use during dry periods could drastically reduce pressure on existing river systems. As things stand today, vast quantities of fresh water run out to the Pacific Ocean during floods because, even if the authority to do so were granted, we physically don't have enough room to store the water. Floods in themselves are harmful, but if their excess flows could be stored, significant amounts of water could be left in rivers during later years to benefit fish and wildlife.

The wetlands that are home to millions of migratory birds offer another graphic example of how improvements in California carry over into neighboring states. The health of the flyways and ecosystems in Oregon, Washington and Alaska that support migrating waterfowl are acutely impacted by the condition of wetlands in our state. With balanced management and a stabilized water system in California, many wetlands that might otherwise serve as a needed water source can be preserved and improved.

A stabilized California water picture will also mitigate for the state's chief crisis today—a shortage of power. Water pumping—pushing it over mountain ranges, and pulling it from out of the ground—is the greatest single use of electricity in the state. Refining and diluting finite water supplies to meet current Safe Drinking Water Act standards further consumes the state's chronically short supplies. If more water were available, distributed across the state in surface and underground reservoirs to meet these needs, more power would be generated, and far less power would be needed to quench the thirst of California's water users.

But perhaps the best example of the benefits of an improved California water picture is the benefit promised to the regional economies. Central valley agriculture allows school lunch programs and fresh produce to remain affordable. Silicon valley industry develops semiconductors and powers space exploration. Statewide manufacturing, filmmaking, tourism, recreation, construction, housing, fishing, transportation and education pump billions of dollars into the region that spills over and multiplies across the western states. If this is to continue and future generations are to enjoy, at a minimum, the prosperity experienced by our own, we must safeguard and improve California's water picture.

#### *V. The Key to Improving California's Water Picture*

California is mired in a power crisis today for several independent reasons, but chief among these is its failure to recognize mounting demand for a finite power supply. This simple discrepancy cannot be allowed to repeat itself in water, for the stakes are far greater and the remedies far more complex.

Today, the average amount of time necessary to complete a water storage reservoir is 15 years, from planning to design to construction. Unfortunately, the demand for water does not wait that long. California has been able to get by with its existing demands only through the innovative water measures mentioned above. But the effectiveness of those measures has reached their limit. As has happened in the energy market, unless we invest in expanding the capacity of our water infrastructure, California will fall victim to another totally foreseeable crisis, for no other reason than its refusal to prepare.

In our view, the best way to avoid this crisis is to begin preparing through targeted investments in California's water infrastructure. These investments will have demonstrated environmental and economic benefits, not only in California, but throughout the West. California can provide enough water for a healthier economy and a healthier environment; for safe drinking water while continuing to irrigate; for healthy ecosystems and water to run our high tech businesses; for a healthy interstate flyway and for commercial fishing; for a high quality of life for Californians and a high quality habitat for our wildlife.

But California can only provide these things through a partnership among Federal, state and local governments. That partnership must involve the intellectual capital and the funding necessary to meet all of these needs. The interest, indeed the need within California to make these investments is clear. That is why Californians overwhelmingly passed a \$1 billion water bond in 1996, and another \$2 billion water bond in March, 2000.

But it is also clear that there is a strong Federal interest in making these investments. First, there is a strong Federal interest because the Federal Government owns and operates the Central Valley Project, the single largest water project in the state of California. The continued viability of that project depends on making these investments. Second, there is a strong Federal interest in protecting and enhancing



environmental treasures, such as the San Francisco Bay-Delta Estuary. Congress has demonstrated a commitment to such environmental protection through investments in Chesapeake Bay, the Great Lakes and, most recently, the Florida Everglades. The need for a similar investment in this estuary is no less compelling. Third, the important Federal policy of improving the safety of drinking water for all Americans is causing California water systems to make substantial investments in water quality. At the same time, they are also being asked to support environmental improvements.

Finally, many of the laws that have reallocated much of California's water resources are Federal laws like the Federal Endangered Species Act and the Central Valley Project Improvement Act. These laws, while providing broad societal benefits through environmental protection, have had the effect of destabilizing our water supply system and exacerbating the conflict among competing needs for water within the state. It is an unfortunate fact that the broad societal benefits from the preservation of species is accomplished at a cost borne by a relatively small number of citizens. We do not believe this mistake should continue.

There are those who call for any investments in water infrastructure to be paid for exclusively by water users, on the basis that only those who directly use the water developed see benefit from it; and with the further argument that any environmental water that has been reallocated has been simply given back to the environment from which it was taken. We categorically reject the notion that there is no broad societal benefit to water infrastructure investments that enhance our environment as well as our ability to deliver safe, reliable, affordable water. There is clearly an interest in producing these economic, public safety and environmental benefits, both at the state and Federal levels.

We therefore believe any plan to finance the investments that are needed should be shared among water users, the state government and the Federal Government. The share borne by water users should be commensurate with the benefits that they receive, and structured in a way that accounts for the fact that any future water development will come at a substantially higher cost than water developed earlier, a portion of which has been reallocated. This point is important because when those earlier water projects were developed, it was on the basis of contracts that were entered into in good faith by local interests. To the extent conditions have changed by virtue of a changing of societal values, the cost of those changes should be borne broadly, not exclusively by those who are under current contracts.

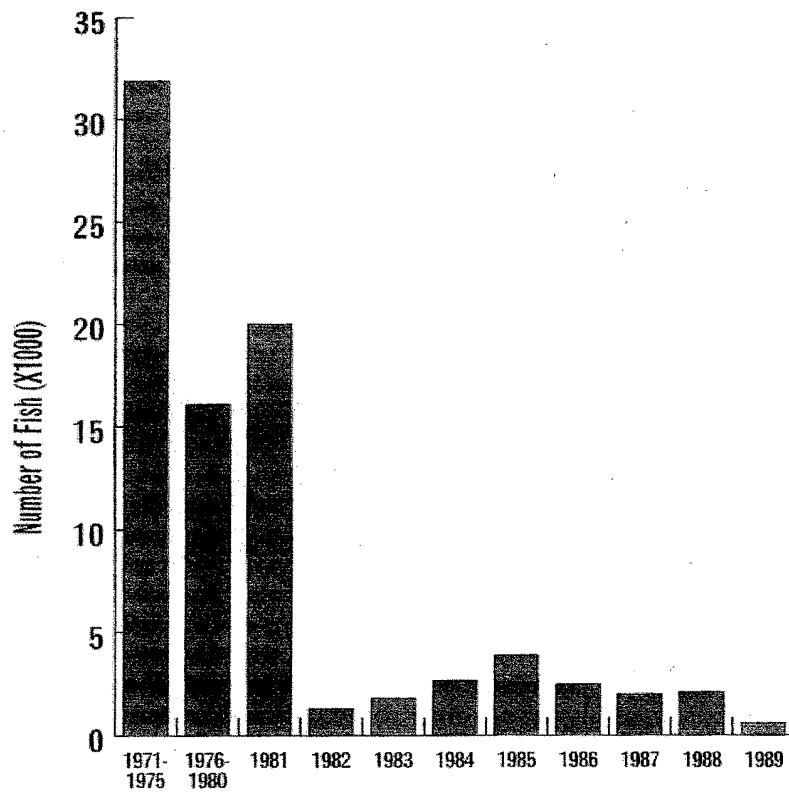
We will support a financing plan that takes all of these factors into account and which fairly apportions the costs accordingly.

The Chairman of this Subcommittee, Congressman Calvert, has announced his intention to develop legislation to authorize implementation of a comprehensive plan to develop additional water supplies and restore environmental values within California. This comprehensive plan has come to be known as CALFED, based on the partnership between the state of California and the Federal Government, which led the effort to develop this plan. ACWA and its members have been actively involved in the development of this plan, and we support its implementation, provided it can be implemented in a way that balances competing needs. We wholeheartedly pledge our support for Congressman Calvert and a commitment to work cooperatively with him as well as other members of Congress and stakeholders within California to develop this legislation.

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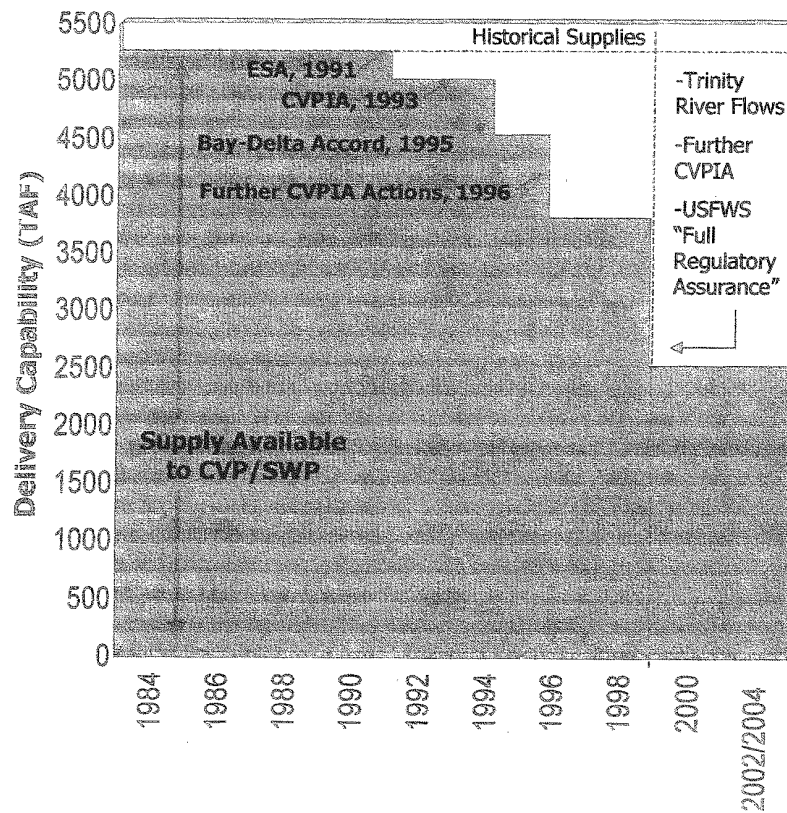
[The charts referred to in Mr. Hall's statement follow:]

## Annual Winter-Run Salmon Escapement to the Upper Sacramento River



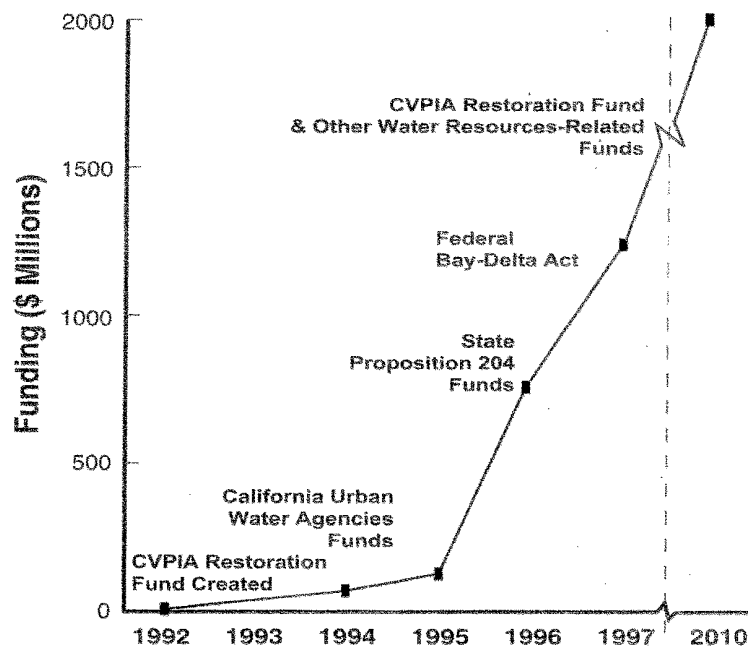
\*Source: *California's Looming Water Crisis*, 11/99

## Trend in Combined CVP/SWP Drought Period Delivery Capability



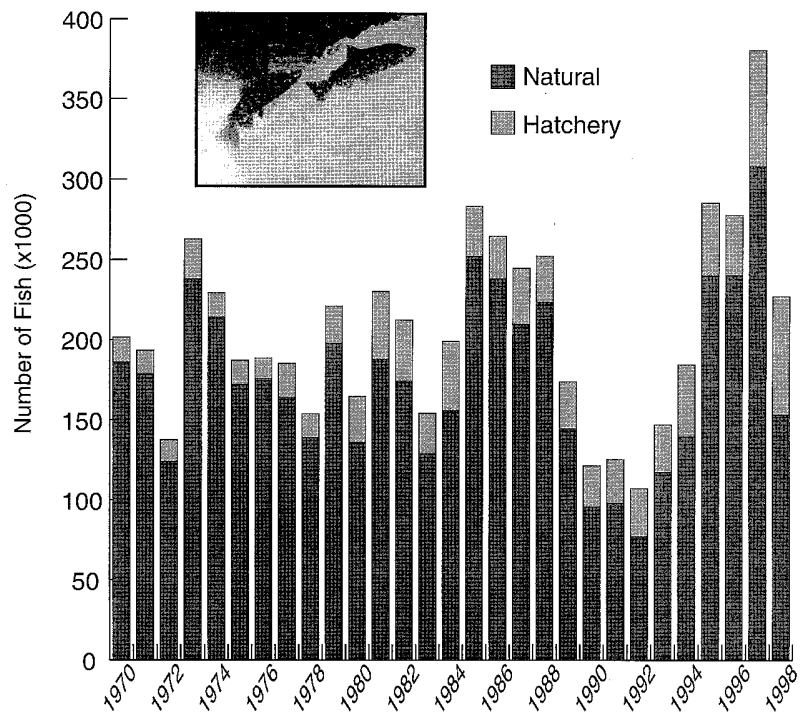
\*Source: *California's Looming Water Crisis*, 11/99

## Funding Dedicated to Environmental Restoration

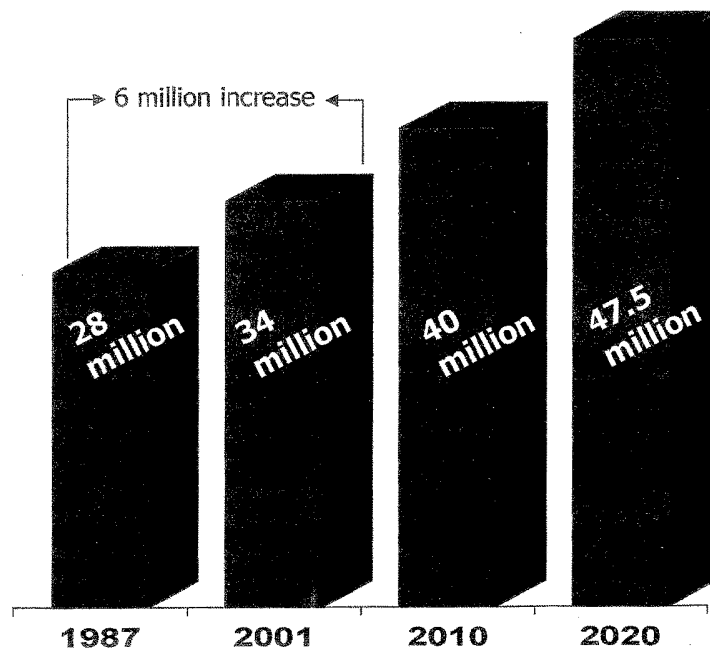


\*Source: *California's Looming Water Crisis*, 11/99

### Annual Fall Run Escapement to Sacramento River and Major Tributaries



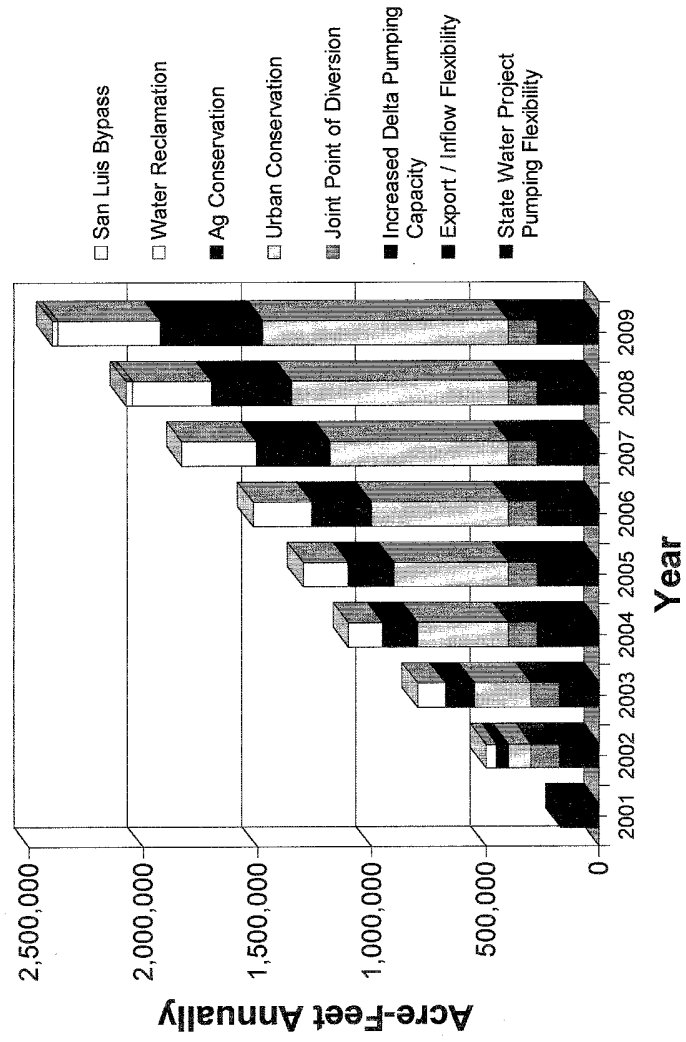
## Current & Future Population Trends



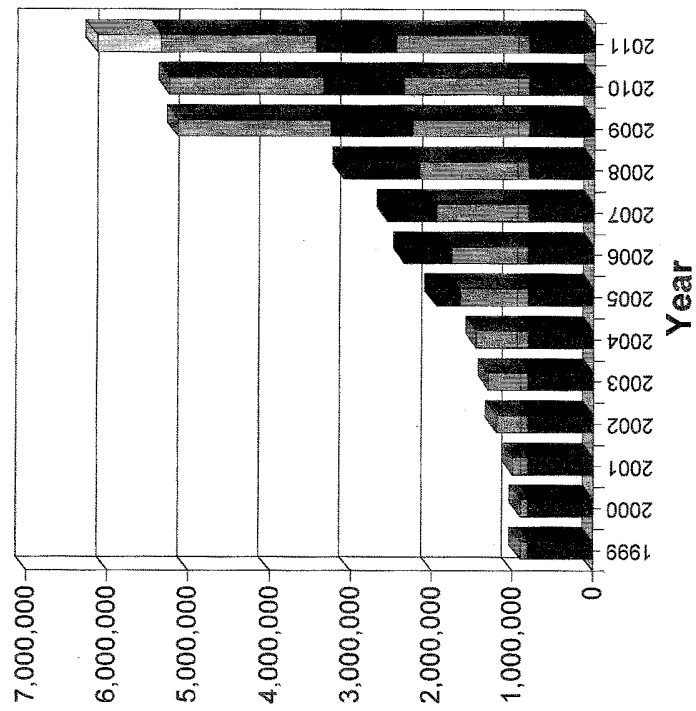
**\*1 in every 8 U.S. residents live in California**

*\*Source: Preparing for California's Next Drought, DWR, 7/00*

## Potential Increases in Water Deliveries (Non-Storage)



**Acre-Feet**





Mr. CALVERT. I will begin the round of questions, and I will impose a five-minute rule upon myself and on the rest of the members and I am sure we will have an opportunity for a second round if there are some additional questions.

Mr. Hall, how much water has been reallocated from the water users to the environment?

Mr. HALL. Well, if you look at this one chart, this second chart, it is pretty clear that about half of the water currently that was exported from the Bay Delta Estuary to areas in central and Southern California has been reallocated, and it is a little over two million acre feet.

Mr. CALVERT. About two million acre feet entirely to the environment?

Mr. HALL. Right.

Mr. CALVERT. Should projects receiving State and Federal funds be required to provide a benefit-cost ratio?

Mr. HALL. I think any project that is contemplated today has to pass the muster of the benefits exceeding the costs.

Mr. CALVERT. And in regards to that, should we build the most cost-effective projects as far as CALFED is concerned first, or should they all receive equal priority?

Mr. HALL. I think what we have to look at is the overall benefit-cost ratio, and those with the highest benefit-cost ratio should probably go first. That makes sense.

Mr. CALVERT. We saw the charts, but with the increasing demand for water and low supplies, how will the various fish recovery programs be affected around the State as increasing demand is proliferating all throughout the State of California?

Mr. HALL. There are some who, I am sure, would like to see us go back to a natural system, tear down the dams and wipe out the levees, and that might work if you did not have 35 million people and projected to go to 50 million. But the fact of the matter is, the only way for us to reduce the tension between environmental needs and human needs is to invest in a system that will provide more water when it is most critically needed.

California is and always has been a State with highly variable water supplies. It does not rain from May through October and there are some extremely wet periods, flood periods even. Nineteen-ninety-seven was the flood of record, followed by extreme droughts. We have to be able to conserve water, store it and conserve it, so that we can make water available for fish as well as for people.

Mr. CALVERT. And that comes to your last chart, water storage. Based upon the different methods of storage throughout California, both south and north, you show an additional storage of about 2.5 million acre feet of water, is that correct?

Mr. HALL. Well, right now, the two projects that have been built in recent—

Mr. CALVERT. Excuse me, six million acre feet of water. I was looking at the wrong chart.

Mr. HALL. We can take that from a little under one million acre feet to over six million acre feet.

Mr. CALVERT. Right. Now, when we have the six million acre feet of water storage constructed, how long will that take us into the future if, in fact, all of that storage is, in fact, created?

Mr. HALL. If you can tell me how many babies are going to be born in California, I can tell you that number. I can tell you this. For the foreseeable future, for the planning horizon that is prudent for California, this will meet the needs for the State. You might say 2020, 2030 would be an appropriate planning horizon.

Mr. CALVERT. But certainly, at the very least, this must be completed in order to meet any of the requirements that people have outlined, both for the urban users, the rural users, and certainly for the environment.

Mr. HALL. Well, we have spent the last six years, Mr. Chairman, discussing, debating, and flat arguing over what is the appropriate mix. If we do the right mix of these things on the last two bar charts, conservation, reclamation, water transfers, some of the other infrastructure items besides storage, and we build this surface and groundwater storage, we, I believe, can meet our needs. If we do not do that, it is not just my opinion, it is the collective opinion of the people who have been involved in CALFED that we will not meet those needs unless we take these actions.

Mr. CALVERT. Mr. Cook, you mentioned that the Metropolitan Water District will need to make other arrangements in its water contracts after 2015 as California is weaned down to its 4.4 million acre foot allocation. Are you speculating, obviously, that the water is going to come from this additional storage and from better groundwater and recycling use in California? Is that your assumption?

Mr. COOK. It could come from those sources, no doubt. It perhaps may also come from additional agricultural transfers, either as a result of infrastructure investment on the agricultural side to free up additional water. It could perhaps come from some fallowing of marginal lands. And ultimately, the Metropolitan Water District may have to go to the sea.

Mr. CALVERT. Including desalinization. I see my five minutes are up. Mr. Dooley?

Mr. DOOLEY. Thank you, Mr. Chairman.

Mr. Hall, on your proposed increases in water deliveries on the non-storage, you show a significant level of increase through urban conservation, almost to the tune of a million acre feet. Now, is that a million acre feet from today's uses?

Mr. HALL. Yes.

Mr. DOOLEY. Then you also show another almost, it looks like 500,000 acre feet of conservation through ag uses. What are the primary components that are going to lead to that level of return?

Mr. HALL. In the urban setting, there are any number of things that can and are being done. Obviously, lower consumption inside the house, low-flow shower heads, low-flush toilets, clothes washers and dishwashers that use less water. Outside the house, there is even more potential for conservation. Obviously, within the industrial sector, there is a good deal of potential in water conservation within the urban setting.

In agriculture, I hesitate to lecture you, Mr. Dooley, because you are a farmer, but there is potential to go to lower water-using forms of irrigation. I want to emphasize that most of this will not occur in the Central Valley, because even though an individual farmer in the Central Valley may implement water conservation,

it does not necessarily lead to increased Basin-wide efficiency and lower water use because the water use in the Central Valley of California, according to the experts, is already 96 percent efficient Basin-wide, so there is not a lot of potential there. But in other areas in the State, there are some potential conservation savings.

Mr. DOOLEY. What are the, I guess, the public policy issues and incentives that need to be put in place in order to secure this million acre feet of conservation in urban uses?

Mr. HALL. I think, certainly, a partnership, a financial partnership among the Federal Government, the State government, and local interests needs to be there. I think incentives, in other words, need to be provided through grants and loans, through tax incentives, to those who are in the private sector so that they can make the investments necessary. And in the agricultural sector, obviously, to the extent you conserve, you ought to be able to keep the water that you have conserved. That is a pretty strong incentive.

Mr. DOOLEY. On your proposed new storage capacity, and this relates, I think, to Mr. Ose's opening statement where he said he was willing to meet Senator Feinstein halfway, and I think he was implying that he thinks that in her CALFED reauthorization proposal, and you can correct me if I am wrong, Mr. Ose, is that there needs to be specific authorizations for some of these components. What is ACWA's position on that? Do you suggest, in the number of proposals that you have here, is ACWA on record as supporting the actual authorization as being in the CALFED bill?

Mr. HALL. ACWA is on record supporting the record of decision that was issued in August of last year, and what the record of decision calls for is for an enlargement of Shasta Reservoir, an enlargement of Los Vaqueros Reservoir, and in-delta storage, either the delta wetlands or its functional equivalent. It calls for further study of projects like Sites Reservoir with the clear understanding that the record of decision recognizes that there is a need for up-stream of delta off-stream storages, like Sites Reservoir would provide.

So while Sites is not quite ready to go, it clearly is the leading candidate for the kind of project that CALFED has said needs to be built. So we support going ahead with the studies necessary to determine whether, in fact, Sites can meet the benefit cost and environmental and economic feasibility tests, and if it does, it should be built.

Mr. DOOLEY. In the last draft proposal that I saw from Senator Feinstein, I understood that it included the record of decision and basically included what I thought was the position that you just articulated. Is there a difference between what Senator Feinstein has offered and what you have just stated?

Mr. HALL. My reading of the bill indicates that those first three projects that I identified, Shasta, Los Vaqueros, and in-delta storage, that once the studies are done necessary to get a permit, they would go to the Secretary of Interior for approval, and that is sort of an internal due diligence kind of process. Projects like Sites would go to the authorizing Committees, beginning with this Subcommittee and then to the full Committee, and I think that is probably an appropriate demarcation or distinction between those two projects and probably a good way to go.

Mr. CALVERT. Mr. Osborne?

Mr. OSBORNE. I am going to take a little different tack here. I am very interested in fishing, and I know that is probably a major difficulty for some of you folks, but I have looked at some of the charts there and in increasing your storage capacity, what will that do to the salmon runs? You are talking about the Sacramento River and some of the other places. Do you have any information there?

Mr. HALL. Well, I do, and from all of the available information, it will improve the salmon runs, and let me explain how. We are not talking about putting dams on live streams. These are all off-stream storage reservoirs. The water would be pumped or diverted from the river during extremely high-flow periods, stored, and then re-released during drier times. The way our plumbing system works, all of this watershed feeds toward what we call the San Francisco Bay Delta Estuary. It is our largest and most important estuary, but it is also the hub of our water resource system. So the water users and the fish have to share it.

What these reservoirs will do is allow us to provide more in-stream flow during these dry periods to protect fish that are migrating upstream and fish that are migrating downstream while at the same time being diverted when it is safe for the fish to divert and used for consumptive purposes, as well.

It is a pretty well-designed system. It speaks to what we call the time value of water. In California, there are periods of time when we have got more than we can handle, and that is called a flood. There are a lot of periods—every year, it does not rain from May through October, so we have got to have water stored to meet needs during that period of time, both fish and human needs. And, of course, we do have droughts, and this year is a very dry year. Our snowpack is 63 percent of normal. So we are going to need the storage this year, not only to get us through the dry times but to get us through what we would normally think of as the wet times.

As I said earlier in my testimony, right now, we have a huge conflict because there is not in those dry times enough water for both fish and people. We have got to store it when it is wet so that there is enough for fish and people. I believe if we make those investments, combined with investments in the habitat that we have already begun to make, you will see fish populations recover.

Mr. OSBORNE. Thank you. I have no further questions, Mr. Chairman.

Mr. CALVERT. If the gentleman would yield some of your time over to me just for a second, I would like to carry on just what you said, because it is very important that as we are involved in an unfortunate energy shortage in the West, there was a comment made, I think at the previous hearing, we are making decisions now that sometimes we may not have made a year or two ago because of the crisis.

If we do not have this additional storage, then additions may be made somewhere down the road where we would make decisions, whether it be for fish or for people, and I suspect that the latter will win out. So the additional storage, I think, if it is used properly, will not only assist in the fish populations but make sure that we have the storage necessary to make sure we meet both of those priorities.

With that, Mrs. Solis, you are recognized for five minutes.

Mrs. SOLIS. Thank you, Mr. Chairman.

My question is for Mr. Hall. I wanted to ask if at all it is possible to compare the energy requirements of pumping water out of the delta down to Southern California with the energy requirements of water recycling.

Mr. HALL. There is—I would like to speak to that, because we get water from a variety of sources. The surface water that we deliver from the delta is a relatively low energy user in comparison to other ways that we get water. For instance, if you deliver water out of the delta into Central Valley agriculture, it uses about four times less energy than pumping it from underground. Likewise, although I do not have a similar ratio on reclamation, reclamation is a relatively large energy user. It requires a lot of process, a lot of energy demand in order to take raw wastewater and turn it into usable reclaimed water.

Mrs. SOLIS. To your knowledge, has anyone done a study on that?

Mr. HALL. I do not know of a detailed study, but I do know people in the business who are very familiar with designing reclamation plants and I would be happy to provide that for you, Congresswoman Solis.

Mrs. SOLIS. Just another quick question. You know, in the San Gabriel Valley, we have a very large aquifer there. Talking about storage, what are your thoughts on potential storage usage there for Southern California?

Mr. HALL. Let me speak generally first on groundwater storage. I think much of the new water development that we do in California will be storing water underground. There is tremendous storage capability in California underground. It is relatively inexpensive. It is somewhere between environmentally benign and environmentally beneficial, depending on how it is designed and operated. So I think there is a lot of potential there.

In Southern California, I commend you because you have taken the lead, not only in the San Gabriel Valley but in the West L.A. Basin, in Orange County, and elsewhere in the inland empire. There are groundwater projects either operating today or being planned and implemented, and I think the San Gabriel Valley is, frankly, one of the Los Angeles Basin's most valuable resources. It makes sense to not only protect it from contamination, but to make maximum use of it.

Mr. CALVERT. I thank the gentlelady.

Mr. Ose?

Mr. OSE. Thank you, Mr. Chairman.

Mr. Hall, if I understand your graph here, the one with the big blue thing—

Mr. HALL. Yes, sir?

Mr. OSE. From 1992 to 1999, we had a reduction in delivery capability for whatever reason from about 5.2 million acre feet of water down to about 2.5 million acre feet, is that correct?

Mr. HALL. That is correct.

Mr. OSE. From your understanding of the situation in California, for the upcoming year, are we in a surplus or a deficit as it relates to deliverability of water?

Mr. HALL. Most areas, certainly in the Central Valley Project Service area, which is the Federal project, and the State Water Project service area, they are substantially below. They are looking at about 40 percent deliveries right now.

Mr. OSE. So we are in a deficit?

Mr. HALL. Yes, a 60 percent deficit.

Mr. OSE. Based on historical norms, how long can we expect the shortage to continue before we go back to wet years?

Mr. HALL. Well, I think I understand your point, and if it is that we tend to have dry years back to back instead of one at a time. Of course, it is impossible to predict that, but in 1928 through 1934, in 1976 and 1977, 1977 being the worst drought, one-year drought of record, and in 1986 through 1992, those were all back-to-back-to-back dry years. It could be a boomer of a wet year next year. It could be dry for the next ten. It is literally impossible to determine, but we often do get dry years back to back.

Mr. OSE. What is the economic consequence of a 60 percent reduction in deliverable water supply?

Mr. HALL. Well, I cannot recite the loss off the top of my head, but it has been well documented that in California, when urban and agricultural areas are short, there are substantial economic dislocations in the hundreds of millions and billions of dollars. During the last drought, some of the water users received one year no water at all from the project. They paid for 100 percent of it. They got none of it. I do not know of any small business that can be sustained on that basis.

I will tell you this. Because of the reallocations of water back to the environment, if we were to have a repeat of the 1986 through 1992 drought, those same water users who did not get water in one year, they would not get water for 3 years. Other urban water users, while they would get some water, they would be in the 30 to 50 percent supply range, requiring extraordinary rationing for industry and for homes.

Mr. OSE. If I understand your testimony, the only way to assuredly meet the demands given the fluctuation in meteorological conditions is to create storage where we could hold water for dry years.

Mr. HALL. Well, I really do think, if I can refer you to the last two charts, I think it is a mix. We clearly need storage. If we also implement the measures that are on the next-to-last bar chart, including conservation, reclamation, and the other projects that are listed there, it will all go toward correcting the imbalance that currently exists between demand and supply in California.

Mr. OSE. So you need both parts?

Mr. HALL. We need both parts.

Mr. OSE. Okay. Now I want to go to Mr. Cook. Mr. Hall's testimony reflects current situation analysis. However, if we start losing water off the Colorado in California, does it help us or hurt us and to what degree is it positive or negative?

Mr. COOK. Metropolitan Water District has a fairly substantial contract, I think, with water out of Northern California and I suspect as the water supply reliability from the Colorado River changes with time as the Upper Basin continues to develop and Lake Powell and Lake Mead are drawn down and surplus capa-

bility is stretched out further and further after 2015, the demand on the Metropolitan Water District will then increase from the northern part of California, not decrease.

Mr. OSE. Thank you, Mr. Chairman.

Mr. CALVERT. I thank the gentleman.

Mrs. Napolitano?

Mrs. NAPOLITANO. Thank you, Mr. Chairman. I have a couple of questions, both for Mr. Hall and to Mr. Cook.

To Mr. Hall, given that we know we will be facing drought conditions as a matter of cyclical issues, given that we have by the year 2015 to live within certain water allocations, given that we have found a way to be able to reuse some water by treating it with tertiary treatment and that two-thirds of it is pumped into the ocean and that EPA now is mandating sanitation districts to give it a fourth treatment before it is pumped into the ocean, is it possible—has anybody begun to look at recuperating that water?

If you are giving it a fourth treatment, basically, it is cleaner than the water we are now drinking, according to analysts. How do we begin to look at either nature's natural filtering to pump it back into the aquifers, back into reservoirs, or into lakes and rivers that need the infusion of water, which will make it extremely usable? I mean, there will be no contaminants in it. Have we looked at that? Is anybody aware of what is happening, to put it all together and say, we need to work on water marketing that includes not only the cleaning, the storage, the recycling, all of these different things? How do we package this and is it important for us to know that you are looking at it and how we can address it?

And to Mr. Cook, the Upper Basin, again, with Title 16, can we get some support for California's, given that we are doing all these different things to try to cut the use of water, for the funding for these projects? Gentlemen?

Mr. HALL. Would you like me to respond first, Mr. Cook?

Mrs. NAPOLITANO. Yes.

Mr. HALL. I think you have hit on it Congresswoman. We do need to package this combined water treatment, water marketing, and water supply and water quality in one package, and I have to say, although it has got its problems, CALFED has done a pretty good job of doing that. The Santa Anna Watershed Project Authority has done something for its own area of the State that is entirely consistent with, compatible with what CALFED has produced.

So I think those are two examples of thinking along those very lines. I want to give you one more that is very recent. Orange County Water District and Orange County Sanitation District just signed a major agreement to reclaim hundreds of thousands of acre feet of water, put them in the groundwater basin for storage, hitting on the concept that Congresswoman Solis mentioned, to make that water available. It is not going to the ocean, it is going into the ground. We will reuse it. It does take advantage of nature's natural filtering mechanism to accomplish that.

That is the kind of measure that I think we can take to reduce our demands on the bay delta system and to reduce our demands on the Colorado, and I want to agree with Mr. Cook. If the operating criteria and guidelines had not been established, California

would be worse off, not better off. So we support that. And like you, I hope, in return, Mr. Cook will support funding for Title 16.

Mr. COOK. Well, obviously, I cannot speak for the Congressional delegations of the Upper Basin States, but I suspect to the extent that those projects make economic sense that they surely would not object to them and perhaps would support them.

Mrs. NAPOLITANO. I would appreciate any advice that you can so that we can become successful, because I think it is going to be on all of us to work together to make it happen.

Mr. COOK. Obviously, and we agree. That is where we have been for quite some time now in terms of the other Basin States.

Mrs. NAPOLITANO. Thank you, Mr. Chairman.

Mr. CALVERT. I thank the gentlelady.

Mr. Radanovich?

Mr. RADANOVICH. Thank you, Mr. Chairman.

Mr. Hall, in your delivery capacity charts, you have shown that since the implementation of CVPIA in 1992 that there has been water taken from a finite source that went to the environment. Where was it taken away from during that period?

Mr. HALL. Most of it was taken away from contractors south of the delta, downstream of the delta. In the Central Valley Project Service Area, some of it was taken from the State Water Project Service Area. And there were a few others who lost water, but most of it was taken from those two contractor groups.

Mr. RADANOVICH. Is it safe to say that those groups have been in a shortage situation since that time?

Mr. HALL. In particular, the San Luis Unit of the Central Valley Project has been critically short of water since then.

Mr. RADANOVICH. I notice in your other chart where you showed the funding dedicated to environmental restoration, showed the skyrocketing amounts going toward environmental restoration, you forgot to show the chart that showed the skyrocketing sums of money going to increased water storage. Did you intentionally leave that out or what is the deal?

Mr. HALL. Well, that has not happened yet, and really, that is what we are here for, is to urge Congress to consider as a part of this authorization ramping up the investment in our water infrastructure, not just storage, but the other measures on that next-to-last chart. If we make those investments, we can bring into balance our supply and demand. If we do not, we cannot.

Mr. RADANOVICH. And I feel comfortable that we are beginning to address those long-term needs. I guess the point that I want to make is that since 1995, certain segments of California have been facing water shortages and it is going to be a while before long-term water increases are made available to the public, and I am glad that we are finally making investments to do that, but what about regulatory relief on the short term for those that are already suffering, have been suffering, and will, God forbid that we get into another series of droughts?

Mr. HALL. Well, there are some measures that do clearly need to be taken. The record of decision called for certain actions to be taken to improve the flexibility in the way the regulatory requirements work, particularly with respect to the Endangered Species



Act. But there are some ambiguities in the record of decision which we believe Congress could help clarify.

For instance, a wonderful concept was developed in the record of decision, and that is that you would have the regulatory agencies essentially acquire from willing sellers a certain block of water. In this case, it is 180,000 acre feet annually. That water would be dedicated to meet the needs of endangered species instead of taking it from project users on a non-voluntary, uncompensated basis. It is a great concept. The concept was to provide assurances to those water users that their water would not be taken instead.

However, what is left unclear is what the priority would be for that water in that what we call environmental water account. Is it primarily to make sure that you avoid jeopardy for listed species? We believe that is the intended purpose. But the Fish and Wildlife Service is now saying, "well, we are not so sure. We may want to use it for something else." And frankly, that completely undoes the assurances that we believe were part and parcel of the record of decision.

So I believe that is the sort of issue that does need to be addressed so that we not only make the investment, we know that the investments will lead to balanced outcomes. We do not want to try to rewrite the Endangered Species Act or the Central Valley Project Improvement Act. We do think that the record of decision in some areas, it does need to be clarified so that, again, we all know what the rules of the road are.

Mr. RADANOVICH. So in your opinion—you mentioned the Endangered Species Act and CVPIA, which is the main regulatory authority on the distribution of water. Do you think that there is enough leeway in both those laws to get us through a water shortage if they are done correctly administratively or do you think that there is going to need to be a change in those laws in order to accommodate people in the short term before we get long-term water storage?

Mr. HALL. I think we need two things. We need the investments that I have called for and we need the discretion that the regulatory agencies have under existing law to be exercised in a way that minimizes the amount of water taken from water users in order to accomplish the necessary environmental purposes. Right now, that is not being done.

Mr. RADANOVICH. All right. Thank you.

Mr. CALVERT. Mr. Dooley, any additional questions?

Mr. DOOLEY. No.

Mr. CALVERT. I have one question. We mentioned clearing some things up and Mr. Radanovich did an excellent job of bringing this out, also, but do you think it is inconsistent with the ROD to also have more specific language in regards to storage, because there apparently is a perception that more attention is brought toward the environmental side of this than there is on the storage side of this. This is a balance, as you know, around here in trying to balance the needs of the environment to the needs of additional water and certainly storage is a part of that. Do you think there are any inconsistencies in having language in any potential legislation pointing that out?

Mr. HALL. That storage is going to be part of the plan?

Mr. CALVERT. Well, more specific language in stating that the storage is going to be built.

Mr. HALL. I would not rely solely on my opinion. I am relying on the people who actually wrote the record of decision and they tell me it was their clear intent that additional surface and ground-water storage would be part of this plan.

Mr. CALVERT. So it is not inconsistent for us to—

Mr. HALL. I do not believe so.

Mr. CALVERT. Great. That was what I wanted to hear. Any other additional questions?

[No response.]

Mr. CALVERT. One more question for Mr. Cook, another issue but certainly something to do with the Colorado River. How are the lower lake levels at Glen Canyon Dam and Hoover Dam going to affect power generation this summer?

Mr. COOK. They will not be down a great deal this year. Water supplies from the Upper Basin, again, like in California, are not very good. We are looking at forecasts in the 80 percent. It will drop Lake Powell some. Lake Mead's demands will drop it some this year, too.

I suspect that, at least out of Lake Powell, the power capability at Lake Powell is constrained as much by the Grand Canyon Protection Act and the work that has been done there for environmental purposes. About a third of its capacity is currently not available except under emergency measures. Lake Powell is only down about 25 feet now, and so it is still fairly capable of developing—

Mr. CALVERT. Well, we may have some emergency measures this summer.

Mr. COOK. You have been doing that, and I think we have responded when we can.

Mr. CALVERT. I appreciate that. Are there any additional questions for this panel? Mr. Ose?

Mr. OSE. Thank you, Mr. Chairman.

With the price of power in California, recognizing that the Bureau in many cases generates its own, does Congress need to prepare itself for additional funding being provided to the Bureau for pumping purposes? Do either of you have any input on that, within the CVP?

Mr. HALL. First of all, I would invite you to talk to the Bureau. I do not know what they have done to amend their budgets. They do buy power and generate power. They buy a lot of their power from WAPA, which is not an investor-owned utility, and they generate some of their own.

I guess what I would like to see Congress take a look at is whether we are maximizing the use of the hydroelectric facilities that the Bureau owns and operates and are we doing as much as we can, again, to balance the needs of fisheries with human needs, not just for water but for power. Again, I am not trying to short-change the fish. I just want to make sure we are making maximum use of these assets for both environmental and human purposes. I am not sure today that we are.

Mr. OSE. But you do not have any information about the relative lack or surplus funding that the Bureau may have right now due to power?

Mr. HALL. We can certainly get it and provide it to you, but I do not have it today.

Mr. OSE. Thank you. Thank you, Mr. Chairman.

And for our last question, Mrs. Napolitano.

Mrs. NAPOLITANO. Right along the same line that my colleague was talking about is who do you think, or how can we pay for this new water infrastructure? What would be the ideal way that we should start looking at, because it is going to cost money. It is not going to be free. That is one question. The other one is, talking about the question you just answered, it seems to me I just read that even though some of the lakes where the salmon fisheries are, that even though the water is down, there is a record number of hatchlings or fingerlings or whatever you call them? They have increased for some reason?

Mr. HALL. There are very healthy counts of both in-migrating and out-migrating salmon in the Sacramento main stem and its main tributaries today.

Mrs. NAPOLITANO. Is that not unusual? I mean, normally, you would think that you would be losing some of that reproductive process.

Mr. HALL. Well, we have had six wet years. We have invested a lot in the ecosystem. We have curtailed pumping substantially. All of those things are supposed to help fish and it appears they are.

Mrs. NAPOLITANO. What would you think would be the ideal way to make sure that these new projects in this new water infrastructure can be addressed financially?

Mr. HALL. Well, I think what works best is a partnership at the Federal, State, and local level. I am not prepared to say what the cost sharing should be among the various parties because a lot of that depends on how the project is used. Some of the projects will be almost entirely environmental benefits. Some of them will be almost entirely water user benefits. Those cost shares should be different.

I will say this. I think every project ought to mitigate its own impacts, but only its own impacts, and too often, there are various stresses on the system that are not accounted for and so all of the impact mitigation is placed on the project, the water project.

Well, in the Bay Delta Estuary, we have a lot of stress on fish. Some of that comes from invasive species. There are a lot of species that are not native to those waters that have moved in through a variety of means. They are predators to the fish that are endangered or they compete for food or they just compete for habitat. They have had a tremendous impact. In fact, some ecologists think they have had more impact than any other single factor. That is not accounted for. Pollution is not accounted for. Over-fishing is not accounted for. Every time there is a mitigation requirement, it is on water projects.

Frankly, that is not appropriate, because what happens is on those water users, it has placed the entire burden for mitigating for all of those impacts and for meeting the requirements of the Endangered Species Act. The Endangered Species Act provides

broad societal benefits through the preservation of species. The costs for that preservation should be broadly shared.

So whatever test, whatever cost-sharing formula is created, in our view, it has to meet the test of, is it fair to place all of the burden on a few water users or should broad societal benefits be shared broadly in terms of their cost. We obviously believe they should be shared broadly.

And what is going to happen is that you are going to take a lot of water that has been developed in previous years which is relatively inexpensive and you are going to replace that with high-cost water and then you are going to say, well, you water users are just going to have to pay the bill, when, in fact, that water has been reallocated to meet a broad societal benefit. I can tell you, we are going to argue very vigorously that we ought to mitigate the impacts that we create, but we ought not be responsible for anything beyond that.

Mr. CALVERT. Mr. Radanovich?

Mr. RADANOVICH. One last quick question. Mr. Chairman, you had mentioned balance between three stakeholders, the way I see it, environmentalists and agriculture and urban water users in California, and I know back in 1995, when the first funding of CALFED began to originate, the idea was that no stakeholder would be pushed out or let out ahead too far of the other one in order to keep everybody on the same page in developing a California water plan. Can you tell me, though, Mr. Hall, what has been the proportion of funding between urban and ag and water since that time?

Mr. HALL. You mean how much for water supply and quality versus the environment?

Mr. RADANOVICH. Yes, or if we want to do it as simply as possible, a ratio between fish and people, which would lump up ag and urban together.

Mr. HALL. It is clear that the Federal money, there was \$430 million authorized and, I believe, \$160 million appropriated, and the vast majority of that, virtually all of it, went to environmental projects. Now, I want to say, in fairness—

Mr. RADANOVICH. But there were ancillary benefits to agriculture and urban users.

Mr. HALL. Right, there were, no question about it. I mean, stabilizing the population helps. Plus, some of that money was invested in fish screens. Fish screens allow people to pump water without hurting the fish, so there is a multiple benefit there, no question about it. But all of that money, virtually, went to the environmental side. It is just that it did have some ancillary benefits.

On the State side, there was a \$1 billion bond issue in 1996. That was an environmental bond issue. Again, some ancillary benefits. And last year, there was a \$2 billion bond issue and that went for multiple things. It went for environmental work, it went for water reclamation and conservation, it went for local groundwater projects, it went for some improvements in the delta. It is much harder to sort out how much for water supply, how much for the environment. The bulk of it to date has been for environmental restoration.

But I want to say something about that. I am glad that has happened, because if we had not done that work, I do not believe we would be even poised to make the investments that we are making today because those fish populations would have crashed. I firmly believe that. I am glad we did it, but we cannot stop there. If we do, we are going to be in water where we are in energy, and that is not just going to impact California, it is going to impact the entire West.

Mr. RADANOVICH. And I think it is important for members to recognize that when we do get into additional funding, that the lion's share has been environmental funding up to this point and the focus does need to be on long-term storage.

Mr. CALVERT. I thank the gentleman.

Mrs. SOLIS?

Mrs. SOLIS. Thank you, Mr. Chairman.

You touched on a sensitive nerve there for me in my district because we have obviously a problem with contaminated water in our area, a Superfund site out in the San Gabriel Valley. And when you talk about sharing the responsibility for cleanup, if a project comes in and begins the mitigation process and they find that there are other ancillary or other problems that have come about through other responsible parties, this has been an ongoing issue for us down there, in trying to make those responsible that have been identified by the Federal Government to come to the table. We have had 20 years of litigation and we have yet to see any resolution.

What would be a quick way, or I am sure you have put a lot of thought into this, that we could start to begin this process of providing relief, because as you say, this is a benefit for everyone down there? We are talking about over three million people in that area.

Mr. HALL. I certainly believe in the concept that whoever is responsible for the contamination should bear that responsibility, though, as you point out, it is often extremely difficult to find them and to compel them to pay. In the meantime, you cannot let the resource be further degraded. I think both at the local and the State as well as at the Federal level, steps do need to be taken to provide the necessary cleanup and remediation of those contaminated sites, because if you do not, then it does not matter who is paying in the end, they are going to pay a lot more.

So I guess I would advocate a two-prong strategy. Go after the responsible parties, but at the same time, do not wait until all those "i"s are dotted and "t"s crossed to start cleaning it up, because if you do, the mess is going to be a lot bigger.

And the other thing is—forgive me for getting on my soapbox—I think Congress can do some things to stop cleanup before it starts. One of them is we need to stop using MTBE in California. We are polluting a lot of groundwater. We can meet Federal clean air standards without using it and we need to stop using it.

Mrs. SOLIS. Thank you.

Mr. CALVERT. Thank you. We are not going to bring up ethanol. [Laughter.]

Mr. HALL. I did not say, do not use ethanol. I just said, do not use MTBE.

Mr. CALVERT. No, that is kind of an inside joke up here on the Hill. Forgive us.

Mr. HALL. I am pretty familiar with that joke, actually.

Mr. CALVERT. All right. We thank the first panel for your testimony and for answering our questions.

Mr. CALVERT. The second panel with us today is Ms. Sunne McPeak, President and CEO for Bay Area Council; Mr. Ryan Broddrick, Director of Conservation Programs for Ducks Unlimited; and Mr. Stuart Woolf, President of Woolf Enterprises.

Ms. McPeak, once you get situated there, you may begin your testimony.

**STATEMENT OF SUNNE McPEAK, PRESIDENT AND CHIEF  
EXECUTIVE OFFICER, BAY AREA COUNCIL**

Ms. McPEAK. Mr. Chairman, I am President of the Bay Area Council, a business-sponsored, CEO-led public policy organization that was established in 1945 to promote economic prosperity and quality of life in the region that includes nine counties that rim San Francisco Bay and the metropolitan cities of Oakland, San Francisco, and San Jose, including Silicon Valley. The economy of that region today is about \$250 billion annually.

The organization that I represent has been involved in California water policy issues for more than a decade and has closely followed the CALFED process since its inception and the signing of the Bay Delta Accord in 1994. I personally have been involved for about 28 years in California water politics and various water issues.

We come here today to commend your leadership, your spirit of cooperation, and your commitment to moving forward, and to doing so with a focus on the future. We want to urge you to be a full partner in the implementation of solutions that came out of the CALFED process. A full partner is not only investing in funding, although I am going to emphasize that point, but it is moving ahead together with the Federal agencies as partners at the table and Members of Congress also fully engaged in the oversight of managing California's water resources, not just for California but for the nation as a whole.

The bay area clearly has an economy that has been built on a very important and valuable ecosystem, the Bay Delta Estuary, but we also have joined with other employer organizations throughout California, and I attach to my testimony today a position paper that we had submitted 2 years ago that foreshadowed the solution for the CALFED program that was joined in by 15 organizations, some Statewide, some other regional in California, because we see our region connected to others in our State and to the nation as a whole.

I guess the message that we would like to underscore is that it is time to move forward with the solutions. The solutions involve the full mix that you heard from Mr. Hall. We have actively and aggressively pursued efficient water use, conservation, and reclamation. We urge a robust water market. But we also respectfully have ardently supported and urge you to invest in the infrastructure, conveyance and storage.

The mix is needed in order to be able to protect the environment as well as to ensure a continual prosperous economy. It is not pos-

sible in our State to be able to handle the differences in weather. The wet years and the dry years are often the abnormal rather than the normal that we sometimes talk to in statistics, and we have got to be able to have flexibility in the system. So we are here to urge the participation of Congress in that continuing partnership and to invest in storage, to invest in the conveyance facilities.

We also had discussion on the last panel about groundwater storage or sometimes we would call it a dual-use or a mixture between storage that is surface and underground storage. May I suggest that oftentimes advocates for underground storage forget that it is a lot more difficult to get water into the ground and it takes a lot longer to do the recharge than it takes to collect it. In other words, we have precipitation rates that always exceed percolation rates, and so if you do not have the combination of surface storage, we cannot actually optimize groundwater storage.

With that, we would be happy to answer questions as a part of the panel.

Mr. CALVERT. I thank the lady.

[The prepared statement of Ms. McPeak follows:]

**Statement of Sunne Wright McPeak , President & CEO, Bay Area Council,  
San Francisco, California**

The Bay Area Council is a business- sponsored, CEO- led, public- policy organization founded in 1945 to promote economic prosperity and quality of life in the region. The Bay Area region encompasses the nine counties that rim San Francisco Bay and 100 cities, including Oakland, San Francisco and San Jose, the heart of Silicon Valley. The economy of the Bay Area is approaching \$250 billion annually. The regional economy not only is dependent on an adequate supply of quality water to thrive, but also is closely linked to the environmental health of the Bay- Delta Ecosystem. As an association of major employers, the Bay Area Council has been involved in California water policy issues for more than a decade and since 1994 has been deeply engaged in the Bay- Delta CALFED process.

The following points summarize the perspectives of the Bay Area Council as a regional organization of major employers with a history of involvement in California water policy.

- California water policy is at a critical juncture. Decisions that are being made today about how to improve California's water infrastructure will having profound and lasting implications for the nation and the state, now the sixth largest economic power in the world.
- Water policy decisions and the manner in which they are implemented will affect every resident and every business in California, which in turn has major implications for the national economy.
- While we have come a long way over the last several years to craft an action plan to restore the critical hub of the state's water system, the Bay- Delta, we need investment to move that plan to reality.
- That is why the employers who are members of the Bay Area Council have invested in the development of the solutions and are now focusing authorize of the funds necessary to implement the solutions. We have joined with other business organizations in California to advance workable solutions. As an example, attached is a position statement issued in 1998 from employer organizations regarding the Bay- Delta CALFED program.
- Following the prolonged drought of the late 80s and early 90s, California businesses invested literally billions of dollars to increase their water efficiency, getting more production out of every gallon.
- Those efforts have paid off tremendously. California water agencies now more people and more industries than in the early 80s with almost the same amount of water. However, as the limits of efficiency from the current supply are approached, new investments must be made.
- As we know, permanent reductions in water usage that have been achieved through retrofitting industries with water efficient hardware lead to demand hardening. This means that conservation efforts in the future will not free up the additional water that will be needed to sustain a strong economy.

- Ironically, businesses that drive economic growth and productivity are among the most dependent on reliable, high quality water.
- To ensure that the economy continues to thrive, business needs a reliable, good quality supply of water. This is especially true in the high tech industry where variances in supply and quality can translate into more costs and a higher bottom line.
- It goes without saying that thriving businesses lead to more jobs which leads to a strong economy. Water is one of the key threads that holds those pieces together.
- The demand for jobs will only increase as California's population is estimated to reach 40 million by 2010 and almost 50 million by 2020. The Bay Area is projected to generate more than 1 million new jobs by 2020 and grow by perhaps as much as 1.4 million people.
- Last year, the state and Federal Government and stakeholders, including the business community, supported the final plan to fix the Bay- Delta, California's major water infrastructure system. The plan is multi- faceted and calls for enormous investment in water quality and supply, as well as restoration of the environment.
- Severe water shortages and economic impacts are predicted for California if the investments are not made now. In fact, it is likely that significant shortages and economic impacts will be experienced before all of the improvements and facilities included in the Bay- Delta plan can be completed and brought on line.
- The current energy crisis in California is a stark reminder of what can happen when investments are not made in infrastructure, resulting in deterioration of both capacity and flexibility to meet normal demand levels, not to mention the ability to respond in case of emergencies.
- The Bay- Delta program provides essential ingredients to rebuild the nation's water infrastructure in California. But significant financial resources will be needed at both the Federal and state level.
- The program calls for \$1 billion to expand existing storage facilities and construct new ones. It includes \$1 billion toward environmental and ecosystem restoration. Another \$1 billion is earmarked to upgrade the aging water conveyance system. Improvements to drinking water quality for all water users is slated to receive \$800 million. Approximately \$1 billion is earmarked for water conservation and reclamation programs.
- These investments are critical to drought proof California and to protect this vital economy.
- A Federal funding authorization is pivotal to improving California's water infrastructure. Agreement last year on a plan of action signaled a new era of cooperation and water management that is historic. It is time to seize this opportunity and move forward. The Bay Area Council and major employers in the region join with business organizations throughout California in urging Congressional action to invest in the water infrastructure needed to support the nation's economy for the 21st Century.

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Mr. CALVERT. Mr. Ryan Broddrick, you may begin your testimony.

**STATEMENT OF RYAN BRODDRICK, DIRECTOR OF  
CONSERVATION PROGRAMS, DUCKS UNLIMITED**

Mr. BRODDRICK. Chairman Calvert, members of the Subcommittee, my name is Ryan Broddrick. I am the Director of Conservation Programs in California specifically for an initiative that is called the Valley Care Bay Care. That initiative focuses on the Central Valley of California. The Central Valley of California represents approximately 400 miles, from Red Bluff to Bakersfield, approximately, consists of the Sacramento Valley, the delta, and the San Joaquin Valley.

One of the issues that is critical to understand, Ducks Unlimited has been involved in the wetlands conservation business since 1937 and the focus in California over the last ten, 15, 20 years has been significant for the principal reason that 60 percent of the Pacific Flyway's total population of waterfowl resides at one point in their



migration in the Central Valley of California, literally 100 percent of some populations of waterfowl, such as the Aleutian Canada goose, recently delisted from the Federal listing, 100 percent of the Pacific tule geese, 66 percent of the North American tundra swans, and 65 percent of North America's pintails.

The point of one of the questions to me was, why is it important on a national basis to invest in the ecosystem of California? From Ducks Unlimited's viewpoint and from my personal experience, the ecosystem of California is obviously a system that has driven a tremendous economy, it has tremendous diversity, it has tremendous challenges as it relates to water supply and as it relates to population growth.

For us to maintain essentially the contribution to the North American waterfowl populations that this nation agreed to under international treaty as well as developed in the North American Waterfowl Management Plan, and as Congress has supported financially through the North American Wetlands Conservation Act, we have to recognize that wetlands in California are highly managed and they are highly dependent upon managed irrigation systems. These are not the lowlands that happen to be non-economical from the standpoint of pumping water of. They are highly dependent in the Sacramento Valley on the rice culture. The rice farming in the Northern Sacramento Valley provides substantial wintering habitat. We are highly dependent upon the same irrigation system that provides water to farmers in the San Joaquin Valley is also the system that provides water to wildlife areas in one of the largest contiguous blocks of wetlands left in California.

California in the Central Valley is meeting this obligation through the North American waterfowl populations with less than 5 percent of its historic wetlands, a tremendous success story.

The issues, as we look over the next ten to 20 years, the Central Valley is going to add approximately, if you can believe the projections, 12 million additional people. The demand on resources, whether it be transportation, flood control, water supply, is going to be very substantial. Your investment in the development of management of water and management of lands and innovation and how we do that, applying some of the best management practices that have been developed for agriculture in the context of wetlands, be sure that the fish passage that we develop and the flows for fisheries, I think, have been very substantial.

Our interest at Ducks Unlimited has been very specifically making sure that salmon restoration was done in a fashion that ensured the recovery of salmon, but also provided a reliable supply for the adjoining lands that oftentimes are seasonally flooded that provide support to waterfowl, but more importantly or as importantly provide the terrestrial habitat to hundreds of other species, many of which are threatened or endangered.

So the reality is the ecosystem in California is a landscape improvement. It has to be done in concert with all the beneficiaries of the water system. It has a history of obviously having a chance for conflict. There are great opportunities. It is a good national investment. Lots of imagination, energy, and local money can go into the solutions and we look forward to the opportunity to doing that. Thank you.

Mr. CALVERT. I thank the gentleman.  
[The prepared statement of Mr. Broddrick follows:]

**Statement of Ryan Broddrick, Director of Conservation Programs, Ducks Unlimited, Inc.**

Good afternoon, Mr. Chairman and Members of the Subcommittee. On behalf of Ducks Unlimited, Inc., the world's leading wetlands and waterfowl conservation organization, thank you for the opportunity to address the question of why it is important to direct private, state and Federal resources towards improving the ecosystems in the State of California.

Since 1937, the mission of Ducks Unlimited has been to fulfill the annual life cycle of the needs of North American waterfowl by protecting, enhancing, restoring and managing important wetlands and associated uplands. To accomplish this mission it has been helpful to form alliances with a variety of public and private partners. Over the last 10 years in California it has been increasingly important to find opportunities to accomplish our mission for waterfowl within the broader context of improving the ecosystem overall. Our approach has been to focus on practical cooperative solutions to conservation challenges.

California, specifically the Central Valley, is one of the most important wintering waterfowl areas in the Pacific Flyway with up to 60 percent of the total duck and goose population using the Central Valley during their annual migration. The Central Valley consists of the Sacramento Valley in the north and the San Joaquin Valley in the South. The Valley extends approximately 400 miles from Red Bluff in the north to Bakersfield in the South. As an illustration of how unique California's role is in the Pacific Flyway, consider that in an average year, the Central Valley supports 100 percent of the world's population of Aleutian Canada Geese; 100 percent of the Pacific Tule Geese; 66 percent of North America's Tundra Swans; and, 65 percent of North America's pintails.

The Central Valley is providing this nationally significant role in support of continental waterfowl populations with only a fraction of the historic wetlands, two thirds of which are privately owned, and dependent upon large acreages of rice and other grain crops that provide significant habitat value during the winter migration. The wetland, riparian, upland, and agricultural lands that provide habitat for waterfowl, also provide essential habitats for hundreds of other wetland dependent plant and animal species, supporting over 50 percent of California's threatened and endangered species during some stage of their life cycle. Accomplishments to date are quite remarkable, but that success is tenuous.

Projections for growth in the Central Valley approach 12 million new residents over the next 20 years, placing tremendous demands on natural resources. Demand for additional water supplies, improved flood control, housing, transportation, conversion of agricultural lands, and changes in crop selection will provide significant challenges to maintaining a healthy and diverse ecosystem.

In a recent survey conducted by the Public Policy Institute of California in collaboration with the Great Valley Center, 81 percent of respondents indicated support for, preserving wetlands, rivers, and environmentally sensitive areas. To capitalize on this support, as well as meeting the obligations established in various local, state, and Federal laws, we must approach our opportunities for sustainable growth, economic vitality, and ecosystem restoration as interrelated and interdependent.

The Central Valley does not represent the full spectrum of ecosystem improvement opportunities that exist in California, yet it is illustrative of how dynamic and adaptable solutions must become. The Sacramento Valley drains to the south, while the San Joaquin drains to the north, both converging in the Delta where the waters combine before flowing to the San Francisco Bay. The natural hydrology of the Central Valley has been dramatically altered by water development. That water development has fueled economic growth of national significance. To maintain those benefits the investment in ecosystem improvement must be continued. However, the Central Valley is highly dependent upon the availability of managed water. As demand for water grows and historical uses are modified to meet emerging urban, agricultural, and environmental needs, great care must be taken to insure we do not unconsciously trade one ecosystem or economic improvement at the expense of another.

My experience, to date, indicates that the public in California has recognized the interrelated and interdependent relationship with a history of support for various propositions and initiatives that have directed billions of dollars into the protection and restoration of wildlife resources, while at the same time supporting investment in infrastructure to maintain and build economic vitality. The dynamics of support

for both ecosystem health and economic growth has forged interest-based alliances that bring remarkable resources to focus on conflicts that have persisted for decades. Private landowners in California remain the backbone of wetland ownership providing stewardship to two-thirds of the remaining wetlands of the Central Valley. Through Ducks Unlimited, Inc. and other conservation organizations, millions of dollars are generated through grassroots fundraising, foundations, trusts, and grants to improve various habitats and invest in research.

Ducks Unlimited believes that wetland conservation in the west is a race against time and that the next 10 years will significantly determine if the North American Waterfowl Management Plan population objectives will become a reality. In recognition of this limited window of opportunity, Ducks Unlimited will be initiating major new fundraising efforts in support of the Pacific Northwest and California Central Valley/S. F. Bay.

California has great potential to improve ecosystems for a variety of reasons that include not only the diversity and resiliency of its natural resources, but also the history of diverse public/private partnerships. We believe precedent exists to show that improving ecosystems in complex environments such as California, are of national concern and can aid with resolution of similar problems elsewhere in the nation.

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[A chart included in Mr. Broddrick's statement follows:]

# **CALFED \$\$ FUNDED FOR DU PROJECTS**

<b>DU Project Number and Name:</b>	<b>Date Invoiced</b>	<b>Amount Invoiced</b>	<b>Monies Rec'd</b>
US-CA-119-3 San Pablo Bay NWR, Tolay Creek Agreement: NFWF: No. 97-N19 Dated: 6-17-98	12/9/98	\$ 209,790.00	1/21/99
	2/15/99	\$ 22,300.00	3/18/99
		<u>\$ 232,090.00</u>	
US-CA-130-1 Gorrill Dam Fish Screen Agreement: Bureau of Reclamation 8-FG-20-16410 Dated: 6/22/98 CALFED \$ Invoiced through funding under Metropolitan Water District of CA #18485	12/4/98	\$ 61,191.00	4/23/99
	12/4/98	\$ 332,676.90	4/29/99
	5/24/99	\$ 6,799.00	9/14/99
	5/24/99	\$ 36,964.10	9/14/99
		<u>\$ 437,631.00</u>	
US-CA-131-1 Rancho Esquon/Adams Dam Fish Screen Agreement: Bureau of Reclamation 8-FG-20-16620 Dated: 8-12-98 CALFED \$ Invoiced through funding under Metropolitan Water District of CA # 15889	12/8/98	\$ 63,270.90	4/16/99
	2/3/99	\$ 37,702.80	4/16/99
	12/8/98	\$ 157,500.00	4/29/99
	5/24/99	\$ 21,689.20	7/13/99
		<u>\$ 287,153.00</u>	
US-CA-149-1 Butte Sink II, Prelim Design and Operation Agreement: Bureau of Reclamation 99-FC-20-0055 Dated: 9-1-99	2/28/01	\$ 245,731.33	Pending
	2/8/00	\$ 25,621.22	3/27/00
	9/18/00	\$ 155,486.34	11/3/00
		<u>\$ 426,838.89</u>	
<b>Total CALFED Monies paid to DU WRO:</b>		<b>\$ 1,383,752.89</b>	

Mr. CALVERT. Mr. Woolf?

**STATEMENT OF STUART WOOLF, PRESIDENT,  
WOOLF ENTERPRISES**

Mr. WOOLF. Mr. Chairman, members of the Subcommittee, my name is Stuart Woolf. I am the President and CEO of a family farming operation in Western Fresno County. Our operation grows a diversity of crops and we have also integrated into some food processing businesses, including a tomato processing plant known as Los Gatos Tomato Products, and almond processing, known as Harris Woolf California Almonds.

I want to speak for just a moment about the value of California agriculture to this nation. California represents less than 3 percent of this nation's harvest cropland. It receives less than 3 percent of USDA program support payments, and yet it generates about 13 percent of the Nation's gross farm product. It also generates a like amount of the Nation's net farm exports. The costs of farming in California are slightly higher, so it only represents about 12 percent of the Nation's net farm income. California agriculture is a great investment.

As California's success is due in great part to its God-given resource of extremely fertile land. Most of the state's farmland rank in class one or class two soil classifications. They are very productive. We also enjoy long hot summers, with a Mediterranean climate. Harvest seasons are longer, our yields are higher than most anywhere else in the world. We can grow over 250 different crops in the State. The long summer also allow for a very efficient and productive processing industry. We can run our processing facilities longer than they can anywhere else in the world.

With that said, I would like just to comment briefly on our own operation and offer it as an illustration as to what some of these advantages may look like. Currently on our ranch, we are growing more tomatoes than Australia. This past year, we grew over 400,000 raw tons. Our neighbors grew a like amount. We ran the fruit through an energy-intensive tomato processing facility. Our yields are typically twice that of our foreign counterparts, and we do this using less natural resources than virtually anywhere else. Once we harvest the tomatoes and send them through our plant, we capture the water that is in the tomato and recycle it. The same yields and efficiencies can be found in the other crops we grow.

Considering these strengths, I have been very optimistic about the growth of our business. Over the past 10 years, we have grown our business tenfold. We did it internally, without buying other businesses. And yet today, as I look out to our future, I do not know that I can keep investing given the risk of unreliable energy and water.

As it relates to water, I can assure you that the water being used within the Valley is generating a great return from agriculture. Given the fact that we are receiving less water at a higher cost, we have been forced to be far more efficient than we ever thought we could be. Today's issue is whether or not we will be able to have a reliable and affordable source in the future. I can be the most efficient grower in the world, and yet if I do not have access to the basic resources required to farm, it really makes no difference.

So today, I am trying to make decisions about my company's future based upon the State and Federal Government's commitment to infrastructure. I strongly encourage you to consider the value of California agriculture and its dependence upon basic resources. Thank you.

Mr. CALVERT. I thank the gentleman.

[The prepared statement of Mr. Woolf follows:]

**Statement of Stuart Woolf, President & CEO, Woolf Enterprises**

Chairman Calvert and members of the Subcommittee, I would like to thank you for the opportunity to testify on behalf of the many farmers in California and the United States who feed and clothe our families and provide the people of our world with safe and affordable food and fiber products.

*History of the Woolf Family*

I grew up on the west side of the San Joaquin Valley, in the midst of a large farming operation. My father, Jack Woolf began his career shortly after World War II as the general manager of Giffen Inc., a pioneer farming operation owned by Russell Giffen. At its peak, Giffen Inc. farmed more than 120,000 acres in the area. My brothers and sisters and I quickly became an integral part of west-side agriculture.

Federal Reclamation Law came to the Westlands Water District service area in the early 1960's. As part of the contract offered by the United States to provide water and drainage service to these lands, Mr. Giffen entered into an agreement to sell his landholdings after 10 years of receiving Federal water benefits. Giffen Inc. was ultimately sold to over 50 family farmers seeking to become part of the development of the arid west. My father acquired land from Mr. Giffen in 1974 and began farming on the basis and commitment of a 40-year contract for a reliable surface water supply from the Federal Central Valley Project.

As a farmer in a Federal reclamation water district, we are limited to the number of acres we can own and farm with Federal project water. In some cases, such as the Giffen Inc. situation, lands must be sold at Bureau of Reclamation-approved price levels. These restrictions were embraced on the promise of reliable water supplies, completed water distribution systems, and drainage service. However, today we attempt to farm with inadequate water supplies, no drainage service and the debt associated with on-farm water distribution systems that were financed with our own dollars when the United States failed to meet its contractual commitments.

My three brothers, two sisters and I are shareholders in Woolf Enterprises, a collection of family operations. Our interests include landholdings in western Fresno and Madera counties; Los Gatos Tomato Products, one of California's largest bulk tomato paste processing plants; Harris Woolf Almond, an almond processing and marketing company; Huron Cotton Ginning Co.; and Cal-West Rain, a drip-irrigation equipment company. We employ over 560 people each year, 139 full-time and 424 seasonal, and are actively involved in the community of the

*The Woolf Mission*

The mission of the Woolf operation is to be known as "The Best Ag Resources Managers". Virtually every decision made in our operation is measured against this objective. As one of many, many farmers in this country, we are challenged to manage land, make water use decisions, employ a workforce, and apply inputs to our landholdings that meet this objective. Farming requires a great deal of resources—each year the Woolf farming entity uses surface water, groundwater and market transfers to meet the crop water requirements, applies over 1 million labor hours, and over 224,000 decatherms of natural gas and 9.3 megawatts of electricity for groundwater production. Los Gatos Tomato Products uses over 1 million decatherms of natural gas during the annual tomato processing season, which runs from July 1 to September 30. Harris Woolf Almond uses over 1 million kilowatts of electricity each season. In today's agricultural economy, utilization of these high cost inputs must be done with a high commitment to efficiency.

I believe that we, as one of the nation's farmers, are the ultimate stewards of this country's natural resources. We care about soil quality and invest dollars and sweat to improve the productivity of our lands; we care about efficient water use and take the necessary steps to assure maximum applied water efficiency; and our trees and vines produce clean air by scrubbing carbon dioxide from the atmosphere and converting it to oxygen. We have installed high-cost drip irrigation technology on more than one-fourth of our landholdings, employ laser-leveling to the majority of our ranch, and utilize global positioning satellite technology on our field equipment to

reduce capital, fuel and labor costs and allow us to work over installed drip equipment without damaging it. A prerequisite of successfully farming in California and the rest of the nation is to “do more with less” and we are truly committed to this objective.

#### *The Significance of California Agriculture*

My family grows almonds, pistachios, processing tomatoes, Pima cotton, wine grapes, garlic, lettuce, and onions, contributing to the \$3 billion dollar gross annual farm income of Fresno County, the number one ag-producing county in the United States. Our neighbors, Kings, Tulare, and Kern Counties, typically rank in the top five in the nation each year. The San Joaquin Valley of California, where all of these counties are located, is truly the fertile valley of the United States, serving to feed not only Californians, but all of our neighbors and fellow citizens throughout the country, as well as a few hundred million people world wide.

We are a member of a very large family, California’s farmers, who in 1998 produced \$27.7 billion in total farm income, approximately 13 percent of the total ag production of the United States. This gross farm income multiplies through the state and national economies, generating sales and income taxes that support social programs and county services, and provide key revenues to the state and Federal budgets. These dollars multiply through the economy over 2.5 times, generating nearly \$80 billion in gross state and national product each year.

Expansion of the California population will present more challenges to our state and Federal political leaders. Urban encroachment continues to whittle away at prime farmlands. In California between 1988 and 1998, about 166,000 acres of cropland (1.5 percent of total cropland) were converted to urban and build-up uses. This conversion will continue to occur at ever-increasing rates, challenging the remaining farmers to produce more with less and our political leaders to develop Federal policies that maintain our diverse and high quality food supply.

If there are any questions about the significance of California agriculture and its effects on the nation’s food supply and ag economy, consider these facts from the California Department of Food and Agriculture:

- For more than 50 consecutive years, California has been the number one food and agricultural producer in the United States.
- California produces 350 different crops and commodities. Products exclusively (99 percent or more) grown in California include almonds, artichokes, dates, figs, kiwifruit, olives, persimmons, cling peaches, pomegranates, pistachios, prunes, raisins, clovers, and walnuts.
- Nearly 1 in 10 jobs in California are ag-related.
- California exports in 1997 totaled \$6.7 billion, about 20 percent of the total California ag production and about 13 percent of the total United States ag export.
- Leading exports for California commodities include cotton, almonds, wine, table grapes, and oranges; destined for Japan, Canada, Hong Kong, South Korea, Germany and the UK.

But California does not stand alone. Farmers in the other top-producing agriculture states of Texas, Iowa, Nebraska, Illinois and throughout the country are all key contributors to the national economy. Years ago, our political leaders recognized that a safe and independently produced food supply was critical to our success. Farm support and land reclamation programs have contributed to our independence and productivity as a nation. These programs have focused on the needs and benefits of various regions in our country. Land reclamation has developed the arid western states into a widely diversified agricultural machine. Commodity supports have served to protect and maintain the corn, soybean and grain-producing engine of the central states. These programs have been among the greatest investments of the American people, by generating huge economic productivity many times greater than the Federal support.

#### *Impacts of Water Supply Uncertainty*

Unfortunately, this economic engine can only run with adequate water supplies. The current energy crisis highlights the impact of shortages in basic resources on the citizens and businesses of this country. Water supply uncertainty has the same impact and has plagued the Woolf operation and other farmers in California. In 2001 we will fallow approximately 20 percent of our total landholdings due to inadequate water supplies from the Federal Central Valley Project. With adequate water supplies, these lands are capable of generating additional gross farm income. Without adequate water supply, these lands present our operation with annual carrying costs of nearly \$300 per acre, with little or no opportunity to generate income.

The rapid decline of CVP and State Water Project water supply reliability is forcing many farmers in California to idle land and sell water supplies to cover a portion of their annual debt. A conservative estimate is approximately 20 percent of the ag land in the CVP export service area will be fallowed in 2001, despite average rainfall conditions and above normal water storage throughout the State. While it remains to be seen how much we can mitigate this massive fallowing, we can certainly expect a large negative impact on the California ag and national economy.

Looking forward, we are very concerned about our ability to sustain our historical operating levels. If water supplies are inadequate today in normal to above-normal conditions, what will happen when we enter the inevitable drought? Who will have the ability to survive? What will be the impact to local communities, the State and national economies?

The answers to these questions depend on the ability of our Federal and state legislators to develop balanced and effective policies in the critical arenas of water and energy resource management. We are all here today because we recognize the opportunity to address matters of national significance. If balanced resource management policies can be developed and implemented, then California agriculture will survive. If equitable and sustaining policies can not be developed, then a large part of the United States' food producing capabilities will be lost.

In 1994, we embraced the Secretary Babbitt/Governor Wilson Bay-Delta Accord because it promised interim stability and a program, later titled CALFED, that would restore balance to the regulatory decision-making process and establish hope for future water supply improvements through increased water storage and conveyance capacity. CALFED became our hope, our promise that things would ultimately get better.

Today, we remain convinced that CALFED is the best opportunity for Californians, and particularly its farmers, to regain the critical level of water supply stability to maintain our unique and high level of ag productivity. However, if CALFED is to succeed, Congress must take legislative action to authorize this program and establish basic guiding principles and direction for the current and future administrations. These principles must restore balance to the implementation of regulatory actions and environmental restoration programs. Congress must provide direction that balance and preservation of our agricultural economy is a critical component of national resource management policy.

#### *Conclusion*

The basis of every great society is a strong commitment to agriculture. Over the years, our political leaders have recognized the importance of a safe and affordable food supply to the American people. Farmers have been provided the tools and supports to lead the United States to the highest standard of living and the safest and most diverse food supply of any country in the world. Our economic diversity and productivity starts at the farm - The successes of America's farmers has allowed millions of American citizens to pursue careers outside of agriculture instead of growing their own food supply.

The productivity of the California farmer has played a key role in allowing the United States to achieve a strong position in international trade, contributing food products to other countries, strengthening the American dollar, and allowing affordable access to foreign commodities critical to the US economy. In order to maintain these incredibly high standards and accomplishments, we have reached a point where our legislators must reconfirm our nation's commitment to agriculture and provide the appropriate policy direction, program authorization, and funding.

It is very clear that California agriculture is critical to the nation, in terms of food production, safety, economic strength, and international trade. This is a resource that we must protect.

I appreciate the opportunity to testify before you today and stand ready, as one of millions of farmers in the nation, to assist you in preserving a very important segment of our economy.

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Mr. CALVERT. Ms. McPeak, could you describe for us how the recent power crisis and the issue of future water supplies have affected the business climate in California, both now and as businesses look at future plans to expand or to do business in California?

Ms. McPEAK. Both the power crisis and the prospect of unreliable water supplies threaten continued investment. The power cri-



sis has reminded us why we are here talking about water. We want to invest in the infrastructure when we have the opportunity to do so.

Let me talk about just the power shortage and the quality of power availability problem for a moment. We have experienced, as has the rest of the State, rolling blackouts, and when high-tech manufacturing has a 60th of a second interruption, the whole plant will go down. It will be offline for maybe 4 hours at a time, but that is multi-million dollars lost. That kind of an experience has caused companies to publicly announce they will no longer invest in California. They will no longer invest in the Bay Area, but they are talking about the entire California.

Mr. CALVERT. Specifically, that was Intel Corporation?

Ms. MCPEAK. Intel. I mean, Peg Barrett announced at our annual outlook conference on January 12 that he will no longer invest and he referenced the State as a third world country, because that is what he in his plants, if they are abroad, have to face in countries that are not as developed.

The under-investment in our water infrastructure has a similar parallel, which is it is very unstabilizing, destabilizing, to not have access to a quality, reliable water supply.

Mr. CALVERT. Is it accurate to say, just to add in here, I talked to a lot of CEOs of various companies in California, that they look at the future of the infrastructure in California, whether it is transportation, water, or other infrastructure needs, certainly electricity, and they look at the prospects of that being fixed or not fixed and then make those decisions with, quite frankly, being responsible to their stockholders and the people who invest in their companies. And so if they do not see that, then they make decisions like Intel and Sun Microsystems and others to no longer do business in California. Is that basically what you see happening right now?

Ms. MCPEAK. Yes. Certainly the looking at whether or not to continue to invest is a question that all of the companies are facing.

Mr. CALVERT. Certainly, you mentioned not only the quantity of water and electricity but also the quality. The water quality that is utilized in the manufacturing process has to be of a high quality, is that not also correct?

Ms. MCPEAK. That is correct.

Mr. CALVERT. You mentioned by 2020, there will be 1.4 million new jobs in the Bay Area.

Ms. MCPEAK. I did in my testimony, written testimony.

Mr. CALVERT. Right. How are you anticipating to meet the water demand of this new growth?

Ms. MCPEAK. We are supporting the implementation of the CALFED solution, so it is possible to meet not only those needs in the Bay Area but all of California by the combination of tools that we have already discussed here today.

Mr. CALVERT. That also includes expansion of the Los Vaqueros reservoir?

Ms. MCPEAK. Los Vaqueros Reservoir is one of those projects that is identified in the record of decision that could be expanded. I will just say to you that I supported that facility in 1988 when

it was before the voters and I advocated that it be three times as big then.

Now, there is also a regional dimension. The topic of this discussion is the regional perspective. Part of the CALFED program is that the regions themselves also are partners in the solution, and so there is a cooperation among the large water agencies within the Bay Area to look at blending and cooperation in a way they have not before, and part of that may very well be a partnership around the expansion of Los Vaqueros.

Mr. CALVERT. Mr. Broddrick, many of the programs, environmental programs specifically, are sometimes quite expensive and some members are concerned about the costs, especially indirect costs, are falling disproportionately on agriculture. How can the funding of these conservation programs be distributed fairly among the beneficiaries? That was brought up by Mr. Hall, also. What kind of method would you suggest to do that?

Mr. BRODDRICK. That is a difficult question. I think the foundation—I am not going to give you a formula, because unfortunately, I do not know the one that would be durable. I think the allocation of the funding as it related to the \$160 million that, to a large degree, went to what you could identify as environmental benefits. Steve Hall referenced the fact that a lot of those were screening of agricultural diversions, and I think that in identifying the priorities for that screening, in part, the allocation there was, let us go to those screens that we know have the largest entrainment of fish. Let us go to those screens and have a variety of partners involved, both a landowner and organizations such as Ducks Unlimited, where we know that the water that goes through that screen has multiple benefits. It was having significant benefits to agricultural interests. It was having very substantial benefits to the terrestrial habitats that Ducks Unlimited and the wetland habitats that Ducks Unlimited was very interested in.

So I think in terms of apportioning future expenditures, I think you need to look for the same mix. Target those projects that do, in fact, benefit agricultural interests, do, in fact, benefit the urban interest, and also provide a benefit for environmental restoration. That does not have to be limited to what I refer to as the obvious opportunities that were involved in fish screening.

In Southern California, in the San Jacinto Wildlife Area, that wildlife area has a wetlands component exclusively because of the availability of water from a wastewater treatment plant. There are numerous opportunities, I think, similar to that. In the San Joaquin Valley, I have had farmers in the last 2 weeks contact me and say, I have land that I believe is marginal in today's economic standing. It has some availability of water during October-November-December when it is of specific interest to wetlands values and Ducks Unlimited's mission. That does not detract that water supply from farming interests later in the year, and they are looking at making some conversion of existing lands back to wetlands because it makes economic sense.

I think we should invest in those where we have partners on the ag and urban side that say, this is a good investment for all of us on the environmental front. It complements—it contributes to an

ecosystem restoration. That formula will be different on every single project, I assure you.

Mr. CALVERT. Thank you.

Mr. Dooley?

Mr. DOOLEY. Thank you, Mr. Chairman.

Mr. Broddrick, in terms of the record of decision that was prepared last year, is Ducks Unlimited supportive of that?

Mr. BRODDRICK. Ducks Unlimited is not a signature, obviously, to the record of decision. Ducks Unlimited has participated prior to the record of decision actually on projects that were funded through what they referred to as category three funding. We believe that there is a role for Ducks Unlimited with our engineering services and our survey services, with land owners that we are close to in terms of improving and enhancing wetlands and doing them in a fashion that actually meet the ecosystem goals of CALFED.

I think the view of Ducks Unlimited, and we have not been engaged to the degree that the agencies have been, but the fact that there is an ecosystem plan and that plan will be implemented over a 30-year time frame, that that has some sense of rationale in terms of you do not change the environment and environmental conditions with just one year's activity.

There is still significant debate as to what components of the environment are receiving the most attention, and quite frankly, and I think appropriately so, those species that are threatened and endangered, primarily fish species, have received the majority of the focus. Ducks Unlimited is in a position of trying to make sure that as they focus on threatened and endangered species, whether it be steelhead salmon or delta smelt, that it is done so in a fashion that complements our mission and objectives, which is maintaining wetlands.

So the ecosystem restoration component that is in CALFED, it is a master plan. It is a good master plan. It needs a lot of refinement. It will be very much a product of adaptive management. They have committed to that. I think the science that they have committed to in CALFED as it relates to the ecosystem restoration plan is going to be critical. We do not know as much as we would like to know. Sometimes we do not know what we think we know when it comes to science. The fish and the wildlife have a tendency to respond sometimes out of script with our assessments. So I think maintaining that adaptive management is going to be critical.

Mr. DOOLEY. In terms of the balanced approach that a lot of people have been talking about, does Ducks Unlimited also support, besides the ecosystem management, the need for the water storage and the water supply components that were part of the record of decision and are part of the bill that Senator Feinstein is introducing?

Mr. BRODDRICK. I have not read Senator Feinstein's bill, and I apologize for that lack of fulfillment on homework. But in terms of storage in surface supply as well as groundwater supply, the more flexibility that you have in a system, the better we will be in a position to respond to those drought cycles, the better we will be in a position to capitalize on those high-water years, or a year that may not be a high-water year but you have got a lot of flood flows.

We need to find a way to park, to invest that excess water so that we can draw upon it in subsequent years. We know in California we will have droughts. When we have droughts, fisheries, farmers, and wetlands suffer. Urban environments suffer. So it is prudent for the long-term management of the ecosystem to have as many tools at the table as you can. Groundwater storage, surface storage, not to predispose which ones, but certainly gravity-flow water and maintaining wetlands, concerning that the economic return on wetlands is not 400,000 tons of tomatoes, we do not have that opportunity.

So the economics of water for wetlands can really drive and diminish the availability of wetlands. We are dependent upon irrigation systems for most of the wetlands in California, and two-thirds of those wetlands are owned by private interests, but they choose not to pay the increase in water cost and those wetlands go away.

Mr. DOOLEY. Ms. McPeak, in terms of the Bay Area Council's support of the record of decision and also Senator Feinstein's approach, which this Committee is obviously going to be considering and most likely will introduce a bill also, in terms of her approach to the water supply issues, we are basically embracing the record of decision and then asking for some of the ones that Mr. Hall identified coming back to this Committee for authorization. Is that a position that you support and your Council supports?

Ms. MCPEAK. The Bay Area Council enthusiastically supported the record of decision. We advocated for perhaps a little more emphasis on certain things that we thought might have been structured somewhat differently in the record of decision but had represented a major landmark accomplishment and a new plateau to move forward in implementing solutions.

I have only briefly read a draft of legislation that Senator Feinstein is contemplating. I am sure we will be making comments, because what we want to see, as I have testified here, is Congressional action and the Federal Government being a full partner, the Federal agencies and Members of Congress, Congress as a partner in this solution.

Mr. DOOLEY. Thank you.

Mr. CALVERT. Mr. Radanovich?

Mr. RADANOVICH. Thank you. I have a question for both Mr. Broddrick and Ms. McPeak. Did your respective organizations take positions on the Trinity River decision?

Ms. MCPEAK. We did not advocate one way or another except to acknowledge that the Trinity decision, when we add up all of the, if you will, the reductions in available supplies on one side of the ledger, when we add up all of the efficient water use measures we can think of, conservation in the urban sector, in the agricultural sector, add reclamation, add a water market, add a good watershed management, flexibility in operating the system, and you still end up with, in a normal year, which we do not have most times, an excess of demand over supply. And so that is why we sit here today acknowledging not only the Trinity River but the 4.4 plan on the Colorado, that there has to be an investment in the infrastructure to capture water when it is truly surplus.

Mr. RADANOVICH. Mr. Broddrick?

Mr. BRODDRICK. Ducks Unlimited did not take a position on the Trinity Decision.

Mr. RADANOVICH. You were smart.

[Laughter.]

Mr. RADANOVICH. Mr. Woolf, can you give me an idea of what has been the level of commitment on water deliveries to Westlands, say, in the last five to 10 years?

Mr. WOOLF. I know we have not received 100 percent in any year. I think—

Mr. RADANOVICH. Say that again, though, because I think it is important.

Mr. WOOLF. Well, we have had here the last, I believe, four or five water years prior to this season have been wet ones, and in our—well, in Westlands, I would think the average would have to be somewhere 50, 55 percent, and I am just taking a stab at it. I do not have the figures in front of me. This year, even with the reservoirs that were, relatively speaking, at great levels and a snowpack that was not quite 100 percent, we are now faced with about 40 percent in allocations.

Mr. RADANOVICH. Thank you. Those are all the questions I have.

Mr. CALVERT. I thank the gentleman.

Mrs. Solis?

Mrs. SOLIS. Yes. For Ms. Sunne McPeak, with all the problems we are seeing now with the energy crisis and what have you, and articles that I have been reading about the users of our precious resources, water and electricity, has the Bay Area Council come up with a kind of a plan so to address this compelling issue that we have before us and perhaps some solutions as to how the Federal Government, along with the State, can work to help provide for assistance to meet that infrastructure need that you talk about?

Ms. MCPEAK. With respect to power, we do have a position that we have shared with primarily our State representatives and I would be happy to—

Mrs. SOLIS. Can you share that for the record?

Ms. MCPEAK. —to send that to you, because it has some similarities to the water infrastructure that we just talked about. The employers that I represent for both the solutions on water and on power would start with saying we must be very good stewards of our resources. So optimize conservation, employ market-based solutions, but invest in infrastructure. When I have talked about water, I do not think personally and the organization I represent has concluded we must have additional storage, surface and groundwater, and improved conveyance. Likewise, on power, there must be additional generation facilities.

And it is not either/or. That has been a false debate that we have had for too many decades in California. The common-sense approach is, as we say, it is a sin to waste water, it is a crime to waste money, and so if you do not optimize conservation, be it water, be it power, we are being stupid. If we do not invest in infrastructure, we are being dumber, stupider. So it is a combination and no one tool will get us there.

Mr. CALVERT. Any additional questions?

[No response.]

Mr. CALVERT. I have a couple of questions. Mr. Woolf, just can you explain in layman's terms, for the benefit of us at the dais that are not farmers, a couple of us up here, the differences between row crops and permanent crops?

Mr. WOOLF. Certainly. Permanent crops would be crops that certainly you do not rotate on an annual basis, and so almonds, pistachio, wine grapes, anything that will stay in the ground for probably five to 50 years.

Mr. CALVERT. Why have the Central Valley farmers been converting to permanent crops?

Mr. WOOLF. That is a good question, because permanent crops are usually, more often than not, more water-intensive. The reason that we have switched a number of our acres over to permanent crops is because when we run our budgets against our return per acre foot of water—we run all of our budgets based against our limiting resource. We can earn more per acre foot of water with our permanent crops.

Mr. CALVERT. So water reliability certainly affects both types of crops, but more importantly—

Mr. WOOLF. Absolutely. As we have converted over to higher-value crops, our needs become more well-defined. We know exactly for the next 20 or 30 years that we are going to need X-amount of acre feet to service the pistachios or the wine grapes or whatever. So now our row crop acreage swings with the wind as it relates to our allocations on a year-to-year basis.

Mr. CALVERT. How does water quality affect crop production?

Mr. WOOLF. Different crops require different qualities of water. Most of the row crops, you can get by with using some of the local well water in conjunction with the higher-quality water that comes through the Project. Some crops, like almonds, are very sensitive and you want to use your higher-quality water on those. If we do not get the surface supplies, I can tell you it dramatically impacts your crops.

Mr. CALVERT. Mr. Broddrick, land retirement programs are certainly a big issue in California. I have heard a lot about them lately. How have conservation programs helped maintain land in California after it has been retired?

Mr. BRODDRICK. In terms of land retirement, frankly, I do not think that—and I am speaking perhaps very quickly from the Ducks Unlimited standpoint. Ducks Unlimited has not per se been a recipient of the lands that were retired from a large retirement program that is being considered in Westlands. So we have not from a strict land retirement program been engaged.

I think, however, for lack of a better term, the surrogate land retirement, where a land owner decides that it is no longer economically feasible to farm for whatever the circumstance, whether it be water supply or straight economics, we have participated where they have developed those into wetlands. We have been a partner with other State and Federal agencies in the design and facilitation of the Wetlands Reserve Program, as an example, where lands that have been in agriculture have made an economic decision to sell those. In an easement, they retain ownership, but we help them in the development of a wetlands plan, nothing on the size of as being contemplated as I understand Westlands.

Mr. CALVERT. Mrs. Napolitano? No additional questions?

Mrs. NAPOLITANO. No.

Mr. CALVERT. Mr. Dooley?

Mr. DOOLEY. I just have one other question or line of questioning. In terms of this balanced approach and when the administration was working with the State and other stakeholders to put together the CALFED and the record of decision, Secretary Hayes made a very strong statement that on normal years is that Westlands should receive 65 to 70 percent of their contracted water, and as Mr. Woolf pointed out, even in the last few years, they have been not receiving oftentimes that 65 to 70 percent, and that is certainly water deliveries which is important not only into the Bay area but in the Central Valley to allow for investment decisions to be made.

Ms. McPeak, it would be, I guess, a question directed to you. In order to try to achieve a balanced approach here where there is something in the CALFED reauthorization for everyone, would you think it would be appropriate that we set a standard that on a normal year, an irrigation district such as Westlands should, at a minimum, be able to receive 65 to 70 percent on a normal rainfall year?

Ms. MCPEAK. Perhaps I could address this in a couple of ways. First, in addition to the word "balance," we would use the word "integrated," that it is not just trade-offs, it is optimizing a set of tools that are important. So it is an integrated approach in the CALFED.

Secondly, as the Chairman was asking Mr. Woolf about delivery, say at 40 percent, and the difference between permanent and row crops, when you have low or less than optimal deliveries, what many farmers have done is go to more efficient irrigation practices. Those are pretty permanent installations. And while if you are growing it you have increased your company tenfold, maybe you do not have to go to the bank, but if you do, you are likely going to come to one of my members who are going to say right back, do you have any reliance on getting delivery of water so that you can pay me back on what you are borrowing to put in that efficient irrigation practice. So we have a relationship here.

With respect to the assurance on delivery of water, the record of decision did have some language on that that we want to respect. I think there are different interpretations of that language. We would want to see as much reliability and fairness and assurance of delivery for the Westlands and agricultural areas of the State as we would want for our own region.

Mr. DOOLEY. Mr. Broddrick, in terms of Ducks Unlimited, again, would you folks see that it would be in your long-term interest, specifically with Ducks Unlimited, that if Westlands was going to move in a direction where there is going to be some significant land retirement, which even Senator Feinstein's CALFED bill does include the provision of, still, by providing some certainty in terms of water deliveries, that that would also enhance the ability for some of these land owners and some of this land that was to be retired to be able to invest more in wetlands restoration, which would benefit that, is that something that you folks have looked at and have taken any type of position on?

Mr. BRODDRICK. We were looking at it. We have not taken a position. How we are looking at it at this point and have reached no conclusions is that, as Ms. Peak indicated, it would need to be integrated wetlands and wetlands development. There is an ingredient there that is called water, and to the extent that that water is available or that this restoration can be part of and integrated with maybe a regional or local water supply program that may not be huge yield, but nonetheless, we think there are opportunities to design in the San Joaquin Valley a wetlands that capture high spring flows, provide some wetlands value, some agricultural value, but the landscape obviously has to be there and that would mean in many cases a retirement of existing farm operations. But we are looking at it, but once again, it needs to be integrated with the needs of the region. We would love to have the opportunity to recreate some wetlands down there.

Mr. DOOLEY. And Mr. Woolf, what would be the practical impact in your operation if you did have a greater certainty of a delivery of 65 to 70 percent of the contract amount to Westlands in a normal water year, which would mean that in an abnormal year, there could be a reduction from that baseline?

Mr. WOOLF. It would have a huge impact. Right now, I am trying to figure out, whether or not to start making the investments in additional drip irrigation and conservation. Why make the investments in conservation if there is no water to conserve? I must have some fundamental level of assurance of delivery in order to make these decisions.

I should also point out that in our farming operations, when we are talking about a 65 percent delivery, that translates into about 20-25 percent of what I actually need to grow my crops. The balance of my water comes through pumping, it comes through water exchanges with other farmers. And so the greater the reliability of that base amount, the greater reliability I have in making additional investments and the greater reliability I have in water marketing. But when you allow water allocations to shrink to possibly zero, I feel a huge swing not only in my base allocation but in water that is no longer available to market and trade.

Presently, the only alternative is to pump, which means burning more natural gas, using more electricity, during an overpriced, unreliable energy crisis.

Mr. CALVERT. I thank the gentleman.

If there are no further questions, I want to thank this panel for their excellent testimony and staying here to answer our questions. This was a very interesting session and we will have more as we move this process along. So we thank you, and with that, this hearing is adjourned.

[Whereupon, at 3:55 p.m., the Subcommittee was adjourned.]

[Additional material supplied for the record follows:]

[The prepared statement of The Honorable Robert Meacher follows:]



**Statement of The Honorable Robert Meacher on behalf of the Regional  
Council of Rural Counties**

Mr. Chairman and members of the Subcommittee,

I want to thank you for the opportunity to provide this written testimony on behalf of the Regional Council of Rural Counties (RCRC) to the Subcommittee for your hearing of April 3, 2001. We hope that what we have to say will underscore the importance of the counties that make up RCRC to the rest of California and to the Nation.

We would like to emphasize three main points:

First, that the landscape that makes up rural California is important because it provides most of the water, much of the electricity and much of the food that fuels and feeds California. Much of this land also is treasured by the nation because it refreshes us emotionally with its grandeur.

Second, rural California includes examples of resources management that are successful and some which have become environmental tragedies, dependent upon the ability of people in Washington and our state to work cooperatively.

Third, we would like to underscore the value of partnerships with locally elected county supervisors. They are closest to the people who live on the land and they best understand the problems associated with managing the land and the possible solutions to them.

RCRC is an association of twenty-eight of California's fifty-eight Counties. Our membership is represented by 140 locally elected County Supervisors, many of whom comprise the Board of Directors for RCRC.

RCRC's membership area is one of California's richest and most diverse environments. Its value is unquestioned for its beauty, resources and utility. It contains rich, productive farmland in the Sacramento and San Joaquin valleys that feed the nation. It includes the soaring Trinity Alps, the Cascade Range, the Coastal mountains and the mighty Sierra Nevada Mountain Range. It includes extensive forests that are both privately and publicly held, including 13 National Forests (Klamath, Shasta, Trinity, Modoc, Mendocino, Humboldt, Lassen, Plumas, El Dorado, Tahoe, Stanislaus, Sierra and Inyo).

The RCRC member counties also provide 80 percent of the San Francisco Bay-Delta water supplies that quench the thirst for 20 million people in urban areas. That same water is also used to generate up to 20 percent of the electricity used by California and other parts of the West. They include the watersheds of the Trinity River, the Sacramento River, the Mokelumne River, the Merced River and the San Joaquin River, as well as the Central Valley Project's largest man-made dams.

RCRC's territory is well known to people outside of California for the scenic Yosemite Valley that has been so beautifully captured photographically by Ansel Adams, the Calaveras Frog Jump written about so colorfully by Mark Twain, and as the home of the Gold Rush, which helped America discover California. But beyond the scenery, there is one very clear and important point. Without the RCRC and the people it represents, there can be no long-term solution to water and natural resource problems in California or elsewhere in the West.

In California, the responsibility for managing this land is primarily the responsibility of counties. For well over 100 years our counties have statutory land use planning authority under California law. They are charged with developing comprehensive General Land Use and Resource Plans, zoning ordinances and a process to approve orderly growth, while protecting the environment and providing for a viable economy.

In addition, our counties are the lead agencies responsible for environmental analysis, according to the California Environmental Quality Act. Counties have regulatory authority over groundwater in California, as validated by a California Supreme Court decision, *Tehama v. Baldwin*. Some of the member counties also serve as water agencies to supply the people and lands within their boundaries. Others have their own public power agencies to provide electricity.

The elected supervisors from our member counties must understand a multitude of issues. They include forestry, farming, water resources, flood control, power supplies, wildfires, police and fire protection, the environment, recreation, housing, traffic circulation, and health care.

Most important of all, our county supervisors are responsible to their constituents. They are no different than the elected officials on this Committee, responsible to the people who put them in office. In our rural counties, the numbers of those people doubled between 1970 and 1990. Some of the fastest growing areas in California are within RCRC's membership area, which increases the strain on each county's ability to provide services for local residents while maintaining the support for people to whom they export their resources.

Our people fundamentally believe that those closest to the land, who live on the land, make the best decisions about those resources. We believe that a farmer in the Sacramento Valley knows how to maintain the agricultural viability of his land to support his family and to feed millions of other people without compromising the environment for the ducks and geese on the Pacific Flyway. A forester, standing in a crowded tangle of undergrowth during a crackling hot summer day knows that a spark is a fire, and that a fire means decades of devastation for thousands of acres and countless wildlife. In a far away office in San Francisco or Washington, it is less clear what nature's signals mean, or if they will be heeded.

RCRC's member counties contain places that evoke powerful memories and emotions to many people. Some speak to some of the greatness of this nation, such as Yosemite National Park. Others are sad testimony to environmental failure. Who can ever forget the photographs of the twisted and malformed animal life in a place called Kesterson Wildlife Refuge; a place that was supposed to be a sanctuary for birds that, instead, became a poisoned well of deformity because of failed government policies. Let us compare the benign use of Lake Tahoe, one of the nation's greatest environmental treasures, with the abuse of Mono Lake and its legacy of dust storms that choke the Owens Valley.

There were many factors that contributed to success or failure. But among the most important was the degree of partnership and cooperation between the Federal Government, which makes decisions in far-away Washington, D.C., and local elected officials who are closest to the problems and their solutions.

The RCRC membership counties have a rich history and tradition of contributing valuable resources to benefit people in other portions of the state—and the rest of the West. That's true, for example, when electricity generated by hydro facilities in California's rural counties is exported to the Pacific Northwest to help people in that area meet their winter-time heating needs.

California depends heavily on rural California for its water, hydroelectric energy production, minerals, food, fiber, building materials and outdoor recreation. Even so, the interests of rural counties are often overlooked or ignored because their political representation is so overshadowed by the more populated urban regions of California. But people in rural counties today are more vigilant. They are unwilling to do business on a firm handshake, a pat on the back and promises for the future.

California's rural counties are undergoing tremendous change. In some areas, significant population growth strains the ability to share resources. And that growth demands the opportunity for economic development in years ahead. They see the promise of becoming part of the technological future of our state, while still being connected to the landscape. They have no intention of allowing that future to be traded away as off-site mitigation for another area's problems.

The leaders of these counties firmly believe that all people's views are valuable. They also believe that the best solutions are those developed locally. Our leadership sees the Federal and State government as potential partners in problem solving. But, it is a partnership that, in the past, has not lived up to its full potential to protect the interests of all the people who are affected by the decisions it makes.

How decisions are made can ultimately be more important than the decisions themselves. If the people on the landscape have no faith in the decision-makers, the process implementing the decision will fail. Our Republic is anchored on the premise that the people's elected representatives make the decisions that affect their lives. Further, there must be a fundamental accountability between those who make the decisions and those whose lives are affected by them. The Supervisors of our rural counties live with that reality each week during their board meetings and every four years during elections. However, all too often they are caught between poorly thought out Federal and state actions and a public whose lives are harmed by those actions.

There is a new Federalism in Washington. It encourages, rather than stifles, local solutions and collaborative processes. There is a new vision of government in Washington, in which local people have a voice and a role in making decisions. There is a new leadership ethic in our nation's capital; one that gives those it leads a voice in their own future. There is new hope for Washington, and it is that those elected to serve in Washington will hear those who are elected to serve back home.

And in that spirit, the supervisors who represent the Regional Council of Rural Counties, looks forward to a cooperative partnership with people in Washington. A partnership that will help California and the West meet its water and energy needs; that will preserve national treasures for the country to enjoy; and that will preserve the ability of rural counties to maintain their quality of life, provide services to its citizens and protect its ability to develop economically.

Thank you for your consideration.

