Testimony

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Introduction

Thank you Chairman Fleming, Ranking Member Huffman, and members of the House Subcommittee on Water, Power and Oceans, for the opportunity to testify on the current regulatory framework's impact upon California watersheds, ecosystems and, most importantly our communities.

My name is Andrew Fecko and I serve as the Director of Resource Development for Placer County Water Agency where my activities involve managing the operations of PCWA's water, energy and recreational infrastructure located in the heart of California's Sierra Nevada Mountains. I am also a member of the Executive Committee of the National Water Resources Association. I appear before you today representing the interests of both organizations.

About PCWA

Placer County Water Agency (PCWA) owns and operates the Middle Fork American River Project, providing water supplies, hydroelectric power, public recreational opportunities and environmental stewardship for the people of Placer County and the Sacramento region. The people of Placer County financed and built the Middle Fork Project in the 1960s to provide for the long-term public benefit derived from the beneficial uses of watershed resources. PCWA is also a Central Valley Project (CVP) water service contractor. Our Agency, and its wholesale water supply partners, rely on a well-managed CVP system in order to meet water delivery responsibilities.

California Water

2016 has brought northern California an above average winter after two critically dry years of drought. Indeed, while we have experienced two years of extraordinary drought conditions, the persistence of drought conditions stretches back more than eight years according to many experts. The significant precipitation of the past year is a positive development for the farms and cities north of the Sacramento-San Joaquin Delta. However, northern California's overflowing reservoirs have not translated into drought relief for many parts of the state where millions of acres of farmland and many of the state's residents live and work. 2016 is emblematic of a greater problem in California; the lack of adequate critical infrastructure necessary to store and convey water from the state's most abundant watersheds in the north to the many farms, businesses, and residents south of the Sacramento - San Joaquin Bay Delta, without harm to threatened and endangered species.

This is not a new story for this Committee or for Congress at large; both the House and Senate have attempted to address the water situation in California for the past three years and from a long-term perspective since the enactment of Central Valley Project

Improvement Act in 1992. I appear before you today to explain why PCWA believes that the dramatically reduced export water deliveries and dangerously low reservoir levels of the past three years represent the “new normal” in California; and, why we believe that with a warming climate, conditions for all water and environmental interests will continue to be aggravated and worsen significantly without sustained investments in watersheds, water infrastructure, and optimized operations.

A Historical Perspective

The Sacramento - San Joaquin Bay Delta is the hub of California’s water system linking the water rich northern portion of California with population centers in the southern part of the state. It is not an ideal link. We need to find new solutions that can preserve our ecosystems and avoid relentless litigation and regulatory obstacles.

The two great rivers of California, the Sacramento and the San Joaquin come together before flowing out to the brackish and salt water marshes that lead to the San Francisco Bay and the Pacific Ocean. The tidally influenced marsh lands of the estuary were formed over millennia by a rising sea level following the last glacial maximum and sediment washing down tributary rivers from the Sierra Nevada, which formed complex wetland habitats and meandering channels. Under natural conditions, in years of abundant rain and snow, the Delta would be fresh all summer as water that originated in the Sacramento and San Joaquin watersheds would flow high in the spring, flooding the valleys, and then slowly releasing water all summer as flood waters receded. In dry years, the Delta would be a saltier environment as tidal forces from the Pacific Ocean overwhelmed the natural inflow and salt water pushed into the marsh.

Under these variable conditions, the native species of the Delta and its tributaries evolved. With a myriad of habitats, channels, salinity variations and water temperatures, a wide variety of endemic species called the Delta home. California’s highly variable hydrology ensured that all of our aquatic and terrestrial species were adapted to thrive in a dynamic environment and could survive extended droughts or floods.

Beginning about 150 years ago, the natural flow paradigm of California rivers and estuaries began to change. Cities, farms and industry began to take root. The hydrology of California was an inconvenient truth for undertaking farming and mining ventures in particular, as the wet winters left the valley floor filled with inland seas that made land cultivation impossible. Conversely, the dry summers left mining interests without water to run sluicing operations necessary for the extraction of gold from the Sierra Nevada. The historic reclamation effort undertaken to solve these problems, the construction of levees, dykes, storage reservoirs and conveyance ditches to conserve and control the waters of the state was largely a success for its intended purpose.

However, the stability that this reclamation effort brought to human endeavors also altered the natural hydrology and the ecosystem in fundamental ways.

Similarly, our watersheds have been fundamentally altered by our attempts to bring stability to an inherently dynamic landscape. Pre-industrial forests were a mosaic of different habitats created by frequent low intensity fire and periodic high intensity fires during drought periods. Accounts from the past indicate that the entire Sacramento Valley was often filled with dense smoke from fires that burned all summer and into the fall in the Sierra Nevada. Because this condition was not conducive to organized industrialization, the effort to fight back and suppress fire was undertaken. When coupled with high rates of timber extraction, this effort proved fairly successful for almost a century. However, for the last three decades we have practiced fire suppression without large scale timber harvest, and this has left our forests dramatically overstocked and susceptible to frequent, high intensity wildfire.

California in 2016 is a product of these historical efforts, and the economy of our state is in large measure reliant on hydrologic and watershed stability. Cities like Sacramento have spent great sums of money to ensure that the city does not flood biannually as it once did, agriculture is reliant on conserving water from wet years and using it in dry years, and our great metropolitan centers rely on a stable water supply from year to year to ensure continued investment and economic growth. California cannot simply return to the natural, unimpaired paradigm of the past without sacrificing the human residents' future. Yet, we also treasure our natural environment, and the residents of our state have consistently voted to preserve, protect and enhance the ecosystems that remain. The challenge to do both is becoming increasingly difficult.

Competition for Resources

The effort to preserve and protect the Delta and its tributaries' aquatic species has been ongoing for 30 years. Any successes have been tempered by protracted and unending litigation associated with measures to protect the Delta. I believe under any analysis, our efforts have not yielded significant successes given the federal, state and local commitments. The stressors that influence our aquatic systems are not just related to timing and quantity of freshwater flow into the Delta, but also are tied directly to pollutants, invasive species, and the sufficiency of suitable habitat within the Delta itself. While we have dealt with some of these other stressors to varying degrees, such as increasing the treatment for sanitation discharge and responding to threats from abandoned mines, the focus of environmental protection efforts has primarily been on reallocating water from consumptive beneficial uses such as agriculture, grazing, and domestic supplies for cities of northern and central California to the environment. Some of the most notable policy driven reallocation efforts have been the Central Valley Project Improvement Act, the Endangered Species Act, the Trinity River Restoration

and the Salmon and Smelt Biological Opinions. However, even as we have added more water to the environment, species populations have not recovered or even stabilized, but instead have continued to shrink.

Why? There are no simple answers in complex biological systems, but we do know three important facts about these at-risk aquatic species and ecosystems: they evolved to adapt to variability, they need appropriate habitat in which to exist, and they cannot compete with the potpourri of exotic non-native species that currently occupy these ecosystems.

With the development of dams and reservoirs on major tributaries, which were essential to human development, Delta and tributary fish species now must exist under carefully controlled environmental conditions below man-made water storage facilities. The problem is that with historic ranges of tributary species cut off by the construction of dams, tributary and Delta resident species compete with each other, and with human water uses, for operational priority at the system's reservoirs.

It is possible to maintain a naturally reproducing salmon and steelhead by constructing, restoring and maintaining appropriate habitat and by holding back spring flows in storage to maintain cool over-summer water temperatures that replicate the conditions in which the fish evolved. However, the competing biological and water quality interests of the Delta prefer higher spring and summer water releases that empty upstream reservoirs and endanger tributary species.

The last three years in California have brought this conflict into clear focus. In 2014 and 2015, under historical conditions, the Delta would have been saltier than usual, but in order to maintain Delta outflow and keep salinity levels low and provide for a minimum level of water export, hundreds of thousands of acre-feet of water from northern California reservoirs was released. These releases were to the detriment of all of the species that live in the tributary river systems below those reservoirs as the careful water temperature management scheme needed to maintain threatened and endangered salmon was lost in the balance of maintaining conditions in the Delta. Sacrificing the ecosystem health and water supply reliability of the tributaries is not an acceptable or sustainable long term solution for the species and the water supplies of northern California.

But even in the drought years of 2014 and 2015, and especially in the spring of 2016, there were periods of heavy rain and high river flows in the winter and spring months that provided opportunities to move water south. But water managers were unable to move water through the Delta and millions of acre-feet were lost due to concerns about Delta endangered species. Instead of taking advantage of the surplus water in the system during the winter and spring, northern California reservoirs will be emptied all

summer long to squeeze a year's worth of export capacity into a very small window allowed by the Biological Opinions, and in the process placing an undue burden on the ecology of tributaries that must provide the water.

The Sacramento region is heavily reliant on an over-taxed Folsom Reservoir. While Folsom was built with the promise of supplying all local water supply needs first, this promise has eroded over the years as more regulatory demands have been placed on the CVP system. Because Folsom is called upon frequently in the summer to provide water quality and export assistance in the Delta, it has recently been driven to dangerously low levels. Last year, Folsom was operated to such low levels that it became necessary for the Bureau of Reclamation to install emergency pumps behind the dam to ensure water deliveries to the communities of Folsom, Roseville and the San Juan Water District, which serve 500,000 people combined. As a result, the reservoir ran out of cold water to support federally threatened steelhead in the lower American River. The over reliance on Folsom to fix the Delta's problems has led to an unstainable operation in which both the Delta and its tributaries are on the brink of ecosystem collapse.

If sea levels continue to rise as they have over the last century, or at the accelerated pace forecast by some in the scientific community, the Delta's problems become far worse. As mean sea level rises, it becomes more and more difficult to keep salt water at bay. As the Delta becomes saltier, agriculture within the Delta becomes more difficult and water export facilities in the South Delta begin to divert water of unacceptable quality for any human use. The current regulatory paradigm will demand ever more fresh water releases from all of the already over-stressed tributary reservoirs, until the fresh water runs out. This is not a theoretical problem or one that is unique to the 21st century; sea levels on the west coast have risen over 120 meters in the last 21,000 years, so it is not surprising that they will fluctuate in the future. Our regulatory paradigm and our infrastructure must recognize this reality and be prepared to adapt.

Finally, the predation of juvenile salmon by non-native sport fish in the Delta and in the tributaries is clearly a crucial aspect of the problem. Of particular concern are striped and largemouth bass which consume out-migrating salmon at a frightening pace, and are literally eating through all of the investments that have been made to recover species.

California's water delivery system as it is currently configured is broken. The state of the species in the Delta is so perilous that the movement of water necessary to support a diverse agricultural, municipal and industrial economy is now affecting the water supply for even the most senior water right holders in northern California. Clearly, ignoring the endangered species issues is not an option, so California must move forward with smarter watershed management, revised operational paradigms that

maximize existing infrastructure, and construct a new kind of water infrastructure that benefits humans and the environment in a balanced manner.

A Balanced Way Forward

Can we have a healthy Delta, healthy tributaries and a reliable water supply? I believe so, but it will take significant local, state and federal water storage and conveyance investments and new ways of managing reservoirs to optimize supplies. Federal agencies will be integral to reengineering our water system infrastructure and re-optimizing our water system operations to account for sustainable human and ecosystem needs.

First, we need to optimize our existing reservoir systems north of the Delta. There are several opportunities to ensure that Folsom and Shasta Reservoirs hold enough water in reserve at the end of each year, while accounting for potential wet winter flood flows. This begins with using forecast-based flood control operations to keep reservoirs as high as possible during the flood season, and then evacuating the necessary volumes when large storms are forecast. The current system of adhering to decades old simple flood control diagrams, no matter the real-time condition, is simply not tenable given the demand for water in the system. Next, reasonable carry-over storage levels must be maintained to hedge against future drought. The demands of the Delta have driven northern California reservoirs dangerously close to dry for both local communities and the fisheries in the tributaries that rely on ample reservoir storage to survive. By setting minimum carryover storage targets and allowing local agencies to carry-over unused allocations from the prior year, local conservation efforts can directly benefit reservoir storage.

In order to continue to serve agriculture, cities and the ecosystem through the 21st century, the CVP or agencies that rely on the CVP must add storage in northern California. Local agencies believe that the Sites Reservoir project, an off-stream storage project with bi-partisan support, in the Sacramento Valley can add significant flexibility and yield to both water supply yield for agricultural and domestic water uses, as well as providing additional cool water for our salmon species. By storing surplus Sacramento River flows that occur in winter and spring, and then releasing water in the summer, the Sites Reservoir project allows water to be conserved in Shasta, Oroville and Folsom, improving both the water supply reliability and the fishery conditions in those tributaries. Because Sites is close to the Delta, it can be used as a “first responder” to assist Delta water quality, a task that has disproportionately fallen on to Folsom Reservoir in the past. This project is clearly in the state and federal interest, as at least half of the benefits are directly related to increasing yield for state and federal water service and settlement contractors and the other half of the benefits will assist the local, state and federal agencies with recovering salmon species in the Sacramento,

Feather and American Rivers. In water year 2016, Sites Reservoir could have put 904,000 acre-feet in storage.

Similarly, the local agencies in the Sacramento region are in the planning phases of development of a federally recognized groundwater bank. The Sacramento region, which lies at the confluence of the American and the Sacramento Rivers, overlays one of the best groundwater storage resources in the state and we believe this resource can be put to use to assist our twin goals of water supply reliability and enhancing ecosystem health. The Sacramento region has a mix of water groundwater and surface water purveyors. A bank would work by providing historic groundwater agencies with surface water in wet years and shifting significant local surface water demands to groundwater in dry years. This concept of shifting demands has worked in the region on pilot scale since 1999, when my agency began to provide Sacramento Suburban Water District with surface water in wetter years. Since that time, local groundwater levels have risen by 10 feet. How does the groundwater bank help the ecosystem of the American River? By shifting significant portions of local water demand to groundwater in dry years, water that normally would have been diverted from Folsom Reservoir to serve local needs stays in storage and is available to provide cool water to our threatened salmon species.

To expand the region's banking capabilities, and at the same time diversify some of the region's sources of supply away from total dependence on Folsom Reservoir, the region's water purveyors plan to develop an alternate diversion on the Sacramento River. Importantly, this alternate source is not a new supply, but a replacement that shifts some of our region's demands away from the over-taxed American River. The new Sacramento River source will connect to the region's Folsom source and integrate the predominately groundwater supplied regions along the way. Similar to the groundwater bank, by shifting a portion of our water supplies away from Folsom Lake, the American River becomes a healthier ecosystem.

These three projects; Sites Reservoir, a Sacramento area groundwater bank, and a new diversion on the Sacramento River have the potential to yield 600,000 acre-feet of new water supply north of the Delta, aiding local agencies, the ecosystem and export interests that are reliant on the Delta. Let me be especially clear on this matter. The projects I cite provide a collaborative approach to develop solutions that will minimize litigation and facilitate environmental protections.

In addition, efforts to restore salmonid habitat in the tributary rivers is vital. We must accelerate these efforts. The Sacramento, Feather, Yuba and American Rivers all have habitat programs in place that help construct and expand salmon habitat. The Bureau of Reclamation is part of several of these habitat efforts, but in order to begin recovering naturally reproducing salmon in the tributaries, these efforts need to be expanded to the

greatest extent possible, and coupled with a program to greatly reduce the presence of non-native predator fishes. It is simply unacceptable for local and federal agencies to continue to make large investments in habitat and water supply only to feed juvenile threatened and endangered species to predator fish.

Finally, federal land management agencies that oversee the vast majority of California's watershed lands need direction and budget support from Congress to better manage our forest landscapes. PCWA's water supply and hydroelectric resources were victims of the 2013 King Fire which decimated the Rubicon River watershed. What we learned from that experience and its aftermath is that post-fire recovery that protects water resources is nearly impossible to achieve given the time required to complete the federal environmental process. After a high intensity fire burns, time is of the essence to stabilize slopes before the winter rains arrive. With good intentions, but limited authority to perform NEPA-exempt emergency remediation work, the U.S. Forest Service simply cannot help local water purveyors like PCWA to mitigate damage to water resources in a timely manner. Similarly, after the 12-18 month NEPA process is complete, and landscape scale restoration can finally begin, there is little if any value left in salvageable trees to provide the funding to perform the necessary remediation. Ours is not a unique story, two-thirds of California's water supply originates in our national forests, and these forests are burning at increasingly intense severity.

Summary

Water supplies throughout the state of California rely on a healthy aquatic ecosystem to be reliable. Water users in California understand flood and drought all too well; it is the natural hydrologic pattern of the state to experience wet and dry spells through time. It is why we have spent the last century constructing infrastructure to keep us safe from flood and sustain us during dry periods. The infrastructure we built in the past was too often focused solely on human needs, but that is changing as we realized that a healthy water supply runs through a healthy fishery.

The new generation of infrastructure projects proposed by northern California help mitigate the unintended consequences of past projects. Building large water projects is more difficult and more time consuming than ever, but local agencies are committed to undertaking these projects and controlling our futures. We invite Congress and federal agencies to engage local agencies to support our efforts to integrate new infrastructure into California's water system so that all water users and the ecosystem benefit.

Specifically, we believe the following federal actions can help local agencies recover species and regain lost water supply reliability.

- Implement the Modified Flow Management Standard for the Lower American River in its operations of the Central Valley Project and Folsom Reservoir. This

operational plan supports the region's coequal objectives of a reliable water supply and protection and enhancement of the environment.

- Support the federal government's investment in Sacramento regional infrastructure projects that improve water supply reliability and drought resiliency, including Sites Reservoir, the Sacramento groundwater bank, and a new alternative diversion on the Sacramento River
- Support for basin studies through Reclamation's WaterSmart grant program, particularly the Basin Study update program introduced by Reclamation in March, 2016.
- Federal funding for investments in recycled water and water efficiency and conservation projects and programs.
- Support development of low-interest federal financing initiatives, particularly the Reclamation Infrastructure Financing and Innovation Act.
- Federal support for new and expanded surface and groundwater storage that build local water reliability, increase the flexibility of the operation of the Central Valley Project and State Water Project and benefit the environment.
- Federal funding for projects and programs that respond to the current multi-year drought in California and prepare for future droughts.
- Address federal funding of catastrophic wildfires so land management agency budgets can be directed to important watershed management efforts.
- Allow local agencies to invest directly, in collaboration with federal and state land managers, in watersheds that support hydropower and water operations using the Good Neighbor Authority.

Thank you for the opportunity to outline some of northern California's water challenges, and the positive steps PCWA believes can be achieved locally, with federal assistance, to increase yield for the ecosystem and human needs.