

Subcommittee on Water, Power and Oceans

John Fleming, Chairman
Hearing Memorandum

February 22, 2016

To: All Subcommittee on Water, Power and Oceans Members

From: Majority Committee Staff, Subcommittee on Water, Power and Oceans (x5-8331)

Hearing: Oversight Hearing on “*The 2016 California Water Supply Outlook During the El Niño and Three Years of Restricted Water Deliveries*”

On Wednesday, February 24, 2016, at 10:00 am in 1324 Longworth House Office Building, the Water, Power and Oceans Subcommittee will hold an oversight hearing on “*The 2016 California Water Supply Outlook During the El Niño and Three Years of Restricted Water Deliveries.*”

Policy Overview:

- This hearing will focus on the continuing drought in California, its impacts state-wide and nationwide and ways Congress can help overcome it.
- At a time when the El Niño is providing significant precipitation in California, some water users may continue to experience water restrictions due to federal rules and regulations mandating protection of a three-inch fish, the Delta smelt.
- In the face of higher precipitation, it is imperative that reservoirs capture this water and plan for future storage reservoirs that can help mitigate future drought.

Invited Witnesses (listed in alphabetical order):

The Honorable Brett Barbre
Director
Municipal Water District of Orange County
Yorba Linda, California

Mr. Thad Bettner
General Manager
Glenn-Colusa Irrigation District
Willows, California

Mr. Tom Birmingham
General Manager/General Counsel
Westlands Water District
Fresno, California

The Honorable Estevan Lopez (or his designee)
Commissioner
Bureau of Reclamation
Washington, DC

Mr. Richard Pool
President and Owner
Pro-Troll Fishing Products
Concord, California

Background

How California Historically Fought Drought

Since becoming a state in 1850, California has experienced natural drought multiple times. These drought periods and the need to provide water to a rapidly growing population and farms led to an innovative and complex water storage and delivery system. Since northern California contains over two-thirds of the water resources and southern California has two-thirds of the human population, the federal government, through the Bureau of Reclamation (Reclamation), and the State of California (State) built the Central Valley Project (CVP)¹ and the State Water Project (SWP),² respectively, to store and convey water.

The CVP is a federal multi-purpose water supply system that consists of twenty dams and reservoirs, eleven hydropower plants and approximately 500 miles of canals and other distribution systems.³ In normal water years, the CVP can deliver a total of 7 million acre-feet (an acre foot is about 326,000 gallons of water or enough water to cover a football field with one foot of water).⁴ The SWP includes 34 storage facilities, reservoirs and lakes, five hydroelectric power plants; and about 700 miles of canals and pipelines, providing water to approximately 25 million Californians and about 750,000 acres of irrigated farmland.⁵ The Los Angeles area in the southern part of the State receives up to 45% of its water needs from imported water delivered from the SWP and the Colorado River Aqueduct.⁶

Water from the northernmost portions of the State is conveyed south through the Sacramento-San Joaquin River Delta (Delta) through two massive federal and state pumping systems near Tracy, California. Beyond delivering water to two-thirds of California's population, and helping California get through periods of extended drought, the CVP and SWP

¹ http://www.usbr.gov/projects/Project.jsp?proj_Name=Central+Valley+Project

² <http://www.water.ca.gov/swp/>

³ http://www.usbr.gov/projects/Project.jsp?proj_Name=Central+Valley+Project

⁴ Id.

⁵ <http://www.water.ca.gov/swp/>

⁶ <http://www.mwdh2o.com/AboutYourWater/Sources%20Of%20Supply/Pages/default.aspx>

have also helped to create a massive agricultural economy that supplies more than half of the country’s vegetables and a vast majority of fruits and nuts worth more than \$46 billion annually.⁷

The current California water storage and delivery system was designed to serve 22 million people.⁸ Currently, the State has over 38 million residents and the population is expected to double by 2050.⁹ While urban and rural communities have pursued water efficiency improvements and planting higher value permanent crops, many believe that conservation will not fully resolve water supply issues and that new water storage projects are necessary in key locations.¹⁰

California’s Recent Drought

Much of California experienced severe to exceptional drought over the last four years.¹¹ As a result, California Governor Jerry Brown issued a drought emergency in 2014 and a first-ever executive order in April 2015 requiring the State Water Resources Control board to

implement reductions in cities and towns as a means to cut water use by 25 percent.¹²

Drought Impact	Loss Quantity
Water Supply	
Surface water reduction	8.7 million acre-feet
Groundwater pumping increase	6.2 million acre-feet
Net water shortage	2.5 million acre-feet
Statewide Costs	
Crop revenue loss	\$856 million
Additional groundwater pumping cost	\$595 million
Livestock revenue loss	\$100 million
Dairy revenue loss	\$250 million
Total direct agricultural costs	\$1.8 billion
Total statewide economic cost	\$2.7 billion
Total job losses	18,600

Last year’s water cutbacks had major impacts on parts of California. Such water shortages caused the City of Mendota, a community heavily dependent on irrigated agriculture and the jobs associated with it, to experience 34% unemployment.¹³ In addition, lack of surface storage prompted many to tap groundwater reserves for water needs. This pumping has caused ground subsidence as a result of decreased aquifer levels.¹⁴ Although various estimates on the drought’s impact in 2015 are still being calculated, most found that it would be

devastating – particularly to California agriculture. One conservative analysis is display in Figure 1 above.

Figure 1: Source: Howitt RE, Medellín-Azuara J, MacEwan D, Lund JR and Sumner DA. 2015. “Preliminary Analysis: 2015 Drought Economic Impact Study.” UC Davis Center for Watershed Sciences.

⁷ <http://ajed.assembly.ca.gov/sites/ajed.assembly.ca.gov/files/Fast%20Facts%20on%20California's%20Agricultural%20Economy.pdf>

⁸ <http://www.water.ca.gov/swp/delta.cfm>

⁹ <http://www.tularecog.org/DocumentCenter/View/374>

¹⁰ <http://www.foxandhoundsdaily.com/2015/04/california-cannot-conserve-or-over-regulate-way-of-out-drought/>

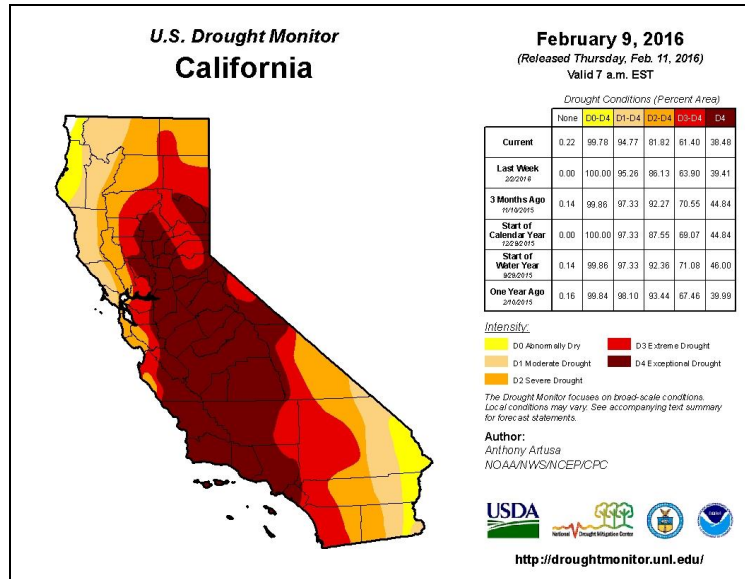
¹¹ http://www.mercurynews.com/drought/ci_29364616/california-drought-how-will-we-know-when-its

¹² <http://abc7.com/weather/gov-brown-orders-mandatory-water-restriction-in-california/603581/>

¹³ <http://www.bloomberg.com/news/articles/2014-02-14/california-drought-threatens-50-farm-town-unemployment>

¹⁴ <http://www.jpl.nasa.gov/news/news.php?feature=4693>

California continues to face drought (see Map below), with rationing requirements still in effect for California municipalities.¹⁵



The Current Water Year

Typical winter storms hit California from the northern Pacific Ocean, but this year El Niño-influenced storms have brought more precipitation. An El Niño is a weather phenomenon characterized by warm ocean water west of Peru that can cause changes in the atmosphere and can create a persistent series of subtropical storms to hit the State, one after another.¹⁶ This year's strong El Niño continues to bring substantial precipitation in the form of rain and snow. For example, earlier this month, the average-to-date rain and snow water content in the Northern Sierra mountains in California is 122% of normal.¹⁷ While some reservoirs - namely Folsom Dam - are experiencing water releases due to concerns about future flooding, most major reservoirs are not at full capacity for a number of reasons.¹⁸

There are some questions over what role federal and state environmental regulations will play in shaping water supplies for the coming year. While no one denies that natural drought played a significant role in the last four years, many believe that man-made actions related to federal and state biological opinions on endangered and threatened fish populations exacerbated such drought.¹⁹

¹⁵ <http://ca.gov/drought/topstory/top-story-54.html>

¹⁶ <http://www.latimes.com/local/weather/la-me-el-nino-nor-cal-20160119-story.html>

¹⁷ <http://cdec.water.ca.gov/cgi-progs/reports/EXECSUM>

¹⁸ <http://cdec.water.ca.gov/cdecapp/resapp/getResGraphsMain.action>

¹⁹ <http://www.cbsnews.com/news/tiny-endangered-fish-highlights-california-drought-conflicts/>

Federal and state water actions related to endangered species, water quality and other matters dating back to 1992 have reduced water availability for certain portions of California.²⁰ The Delta smelt, a three-inch fish (see photo below) listed as threatened in March 1993²¹ has been at the forefront of this debate. Under the 2008 Delta smelt Biological Opinion,²² increased amounts of water were diverted from farms and cities in southern California and allowed to flow into the Pacific Ocean primarily on behalf of the Delta smelt.²³ Some environmental organizations have blamed the Delta pumps as the main cause of smelt decline while others blame factors including predation by non-native fish, pollution and other conditions.²⁴

Although many factors impact the declining Delta smelt population, the Bureau of Reclamation (BOR) and the U.S. Fish and Wildlife Service (FWS) monitor whether the smelt are entrained in and around the Delta pumps. When the pumps operate, they can create a reverse flow in the Old and Middle Rivers in the Delta, which, along with other factors, can draw the smelt and other fish species, at various life stages, towards the pumps. As a result, the fish are currently monitored through what is called salvage operations to see whether fish are being entrained into the pumps.²⁵ In addition, the FWS trawls parts of the Delta to monitor the locations of the fish relative to the pumps.²⁶ Under current FWS policy the adult delta smelt anticipated take level for the 2016 water year is 56.²⁷ So far this year, three actual smelt have been salvaged at the pumps.²⁸ There is significant debate and concern that the federal government kills many more Delta smelt during trawling and other research activities.²⁹ The BOR and FWS determine the amount of pumping levels depending on these and other factors. The Administration will testify about these matters.



Delta smelt. Photo source: U.S. Fish and Wildlife Service

²⁰ http://www.fws.gov/sfbaydelta/documents/SWP-CVP_OPs_BO_12-15_final_OCR.pdf, at p. 279

²¹ http://www.fws.gov/sfbaydelta/species/delta_smelt.cfm

²² http://www.fws.gov/sfbaydelta/documents/swp-cvp_ops_bo_12-15_final_ocr.pdf

²³ Testimony of Mr. Tom Birmingham, before the House Water and Power Subcommittee, June 2, 2011, at 3

<http://naturalresources.house.gov/uploadedfiles/birminghamtestimony06.02.11.pdf>

²⁴ http://www.fws.gov/sfbaydelta/species/delta_smelt.pdf

²⁵ Congressional Research Service Report, Western Water and Drought: Legislative Analysis of H.R. 2898 and S. 1894, at 19.

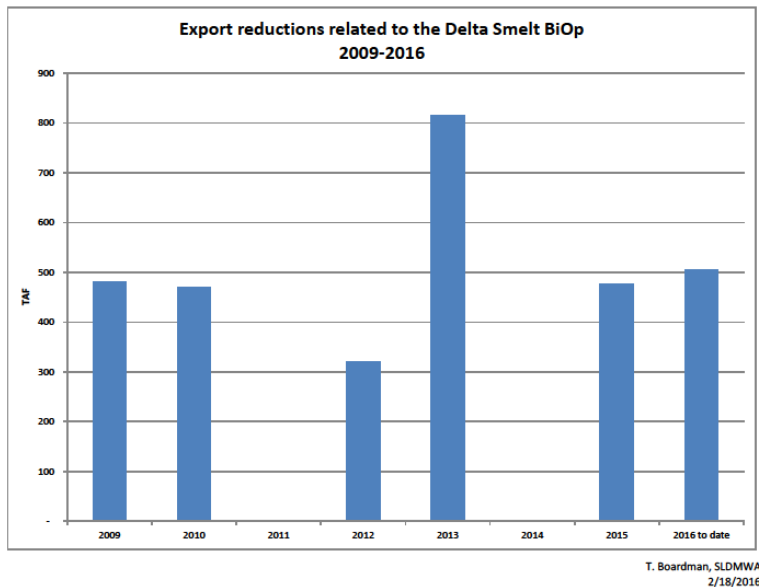
²⁶ http://www.fws.gov/sfbaydelta/newsroom/2nd_monitoring_plan_nr_2-27-2014.cfm

²⁷ December 23, 2015 FWS Regional Director Memo to Bureau of Reclamation Regional Director, [Update on the Delta Smelt Incidental Take Statement for the 2016 Water Year](#) (PDF)

²⁸ Testimony of Mr. Tom Birmingham, before the House Water, Power and Oceans Subcommittee, February 24, 2016, pg 3. Note that FWS expands this to twelve Delta smelt for purposes of the incidental take level established in the Delta smelt Biological Opinion.

²⁹ Testimony of Mr. Brett Barbre, before the House Water, Power and Oceans Subcommittee, February 24, 2016, pg. 1.

Current outflows from the Delta into the San Francisco Bay/Pacific Ocean are higher than last year. Yet, many water users – particularly those south of the Delta – are concerned that they will receive another zero percent allocation of water for the 2016 water year.³⁰ Indeed, some of these water users believe that they have already lost 500,000 acre feet (see chart below) so far this year due to the Delta smelt Biological Opinion.³¹ A representative from the Westlands Water District, a south-of-Delta water user organization, will testify on this topic.



Conversely, a witness representing some fishermen in the San Francisco Bay area will testify that the diversions on behalf of the Delta smelt are necessary and will help provide multiple benefits.

Similarly, the FWS has cited: “Delta outflow provides fresh water to the Bay-Delta estuary. This enables municipal water diversions for the east Bay

Area and for farms in the Delta itself. Delta outflow also contributes to waterfowl production on some Delta islands and in Suisun Marsh. Delta outflow lowers concentrations of pollutants in the Delta and Bay, pollutants that would otherwise be harmful to San Francisco Bay area residents. And, Delta outflow performs many important ecological functions including contributing to the production of fish and shellfish, salmon, striped bass, smelt, sturgeon, and bay shrimp. Outflows also prevent high-salinity water from moving upstream and into agricultural areas in the Delta. Thus, water passing through the Delta and out to the ocean is not being wasted.”³²

While a central focus of the hearing will be on Delta smelt diversions, there will also be a discussion on the need for more water storage more broadly, especially in light of predicted inflows from increased snowpack associated with the El Niño. Surface water storage reservoirs are designed to capture and save water during wet times for delivery at a later point. This was the primary reason for the CVP and SWP. However, in light of California’s increased population, multiple demands on water and potentially changing weather patterns, some

³⁰ Testimony of Mr. Tom Birmingham, before the House Water, Power and Oceans Subcommittee, February 24, 2016, pg 3.

³¹ Id.

³² [Delta Smelt Q&A](#) (PDF)

advocate the need to build more storage in the State.³³ The aforementioned Folsom Reservoir recently had to release water due to the federal government's flood control rules of inadequate future capacity in light of predicted storms and run-off.³⁴ Witnesses will discuss the historical benefits of storage and cite the need for more water storage in the State.

California Drought Legislative History

Given that federal policies play a significant role in water cutbacks and potential new water storage projects, there have been numerous legislative proposals over the last few Congresses to help address these matters. The House Republican Majority passed California drought-related bills in the past two Congresses and a larger west-wide drought mitigation bill during the first session of this Congress. Regarding the latter, H.R. 2898 (Valadao, R-CA) works within the framework of the current Biological Opinions on Delta smelt and salmon to foster scientific transparency and updated data collection in order to bring about operational flexibility while moving forward on new water storage in the State. The bill also directs federal agencies to maximize the amount of water pumped south of the Delta during drought and for two subsequent normal water years.³⁵

Discussions and efforts in late 2015 failed to resolve House Republican and Senate Democratic differences over this measure. However, U.S. Senator Dianne Feinstein (D-CA) recently introduced a bill³⁶ that the Senate could take up later this year. House Majority Leader Rep. Kevin McCarthy (R-CA) responded to Feinstein's bill introduction:

“The House passed legislation last July to take advantage of El Nino storms and help Californians get the water we desperately need. I look forward to Senator Feinstein working to ensure this latest bill moves through the Senate so the House and Senate can go to conference on California water legislation. We are finally seeing rain in California, but we are losing – and not capturing – water to the ocean. My colleagues and I stand ready to work together to meet the challenge our state faces.”³⁷

³³ <http://www.sfchronicle.com/drought/article/Floodgates-open-for-adding-dams-to-battle-6471813.php>

³⁴ <http://www.sacbee.com/news/state/california/water-and-drought/article60419396.html>

³⁵ <http://thomas.loc.gov/cgi-bin/query/D?c114:4:./temp/~c114qUokv0::>

³⁶ <http://thomas.loc.gov/cgi-bin/bdquery/D?d114:45:./temp/~bdlc95:./bss/>

³⁷ <https://kevinmccarthy.house.gov/media-center/press-releases/mccarthy-statement-on-senator-feinstein-s-water-bill>