From: William Jennings [mailto:deltakeep@me.com]
Sent: Wednesday, June 17, 2015 3:36 PM
To: Satkowski, Rich@Waterboards
Cc: Mizell, James@DWR; Amy Aufdemberge; pfujitani@usbr.gov; Carr, Chris@Waterboards; Mike Jackson; Chris Shutes; crenshaw@cal.net; Denise Zitnik; Tccannon@comcast.net; Mike Lozeau; Andrew Packard; Rebecca Davis; Megan Truxillo; Carolee Krieger; Barbara Vlamis; Barbara Barrigan; Tim Stroshan; Tom Stokely; ngmplcs@pacbell.net; Herrick, John @aol.com; Meserve, Osha@semlawyers.com; Tom Keeling; Richard McHenry
Subject: CSPA, et al: Objection to DWR/USBR Request for Temporary Urgency Change

Hi Rich,

Attached is an Objection respectfully submitted by the California Sportfishing Protection Alliance, California Water Impact Network and AquAlliance regarding the 8 June 2015 Notice of Request Filed by the California Department of Water Resources and the United States Bureau of Reclamation to modify and renew a Temporary Urgency Change Order regarding permits and license of the State Water Project and the Central Valley Project.

We would appreciate a receipt of timely submission.

If you have questions, please don't hesitate to contact me. Thank you.

Bill Jennings
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California Sportfishing Protection Alliance
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State of California
State Water Resources Control Board
DIVISION OF WATER RIGHTS
P.O. Box 2000, Sacramento, CA 95812-2000
Info: (916) 341-5300, FAX: (916) 341-5400
Web: http://www.waterboards.ca.gov/waterrights
Rich.Satkowski@waterboards.ca.gov

PROTEST – (Petitions)
OBJECTION
PETITION FOR HEARING

Temporary Urgency Change Petition for
Permits 16478, 16479, 16481, 16482 and 16483 (Applications 5630, 14443, 14445A, 17512 and 17514A, respectively) of the Department of Water Resources for the State Water Project and License 1986 and Permits 11315, 11316, 11885, 11886, 11887, 11967, 11968, 11969, 11970, 11971, 11972, 11973, 12364, 12721, 12722, 12723, 12725, 12726, 12727, 12860, 15735, 16597, 20245, and 16600 (Applications 23, 234, 1465, 5638, 13370, 13371, 5628, 15374, 15375, 15376, 16767, 16768, 17374, 17376, 5626, 9363, 9364, 9366, 9367, 9368, 15764, 22316, 14858A, 14858B, and 19304, respectively) of the United States Bureau of Reclamation for the Central Valley Project.

We, Bill Jennings, Executive Director, California Sportfishing Protection Alliance (CSPA), 3536 Rainier Ave, Stockton CA 95204, deltakeep@me.com, (209) 464-5067; Chris Shutes, Water Rights Advocate, CSPA, 1608 Francisco St., Berkeley, CA 94703, blancapaloma@msn.com, (510) 421-2405; Barbara Vlamis, Executive Director, AquAlliance, P.O. Box 4024, Chico, CA 95927, barbarav@aqualliance.net, (530) 895-9420; Carolee Krieger, Executive Director, California Water Impact Network (CWIN), 808 Romero Canyon Rd., Santa Barbara, CA 93108, caroleekrieger7@gmail.com, (805) 969-0824; and Michael Jackson, counsel to CSPA, CWIN and AquAlliance, P.O. Box 207, 429 W. Main St., Quincy, CA 95971, mjatty@sbcglobal.net, (530) 283-0712 (Protestants)

have read carefully an 8 June 2015 notice relative to a petition for Temporary Urgency Change (TUCP) of the Department of Water Resources (DWR) and the Bureau of Reclamation (Bureau), dated 21 May 2015. The 21 May TUCP request replaces a request made on 24 March 2015 for the 1 July through 30 November period that was not yet acted upon.

The proposed TUCP will:

- Not be within the State Water Resources Control Board's (SWRCB) jurisdiction,
- Not best serve the public interest,
- Be contrary to law, and
- Have an adverse environmental impact.

We object to the TUCP and petition for a public hearing for the reasons described below.

State facts, which support the foregoing allegations:

We incorporate by reference the:

A. 17 May 2015 Objection to the 21 May 2015 TUCP submitted the Restore the Delta;
B. 6 May 2015 Protest, Objection, Petition for Hearing and Petition for Reconsideration submitted by CSPA et al. regarding the 24 March 2015 TUCP and 6 April 2015 SWRCB Order;
C. 5 May 2015 Protest submitted by Restore the Delta regarding the 6 April 2015 TUCP and Order;
D. Presentation and exhibits presented by CSPA, CWIN, AquAlliance, Restore the Delta, NRDC and the Bay Institute at the 20 May 2015 SWRCB workshop on the March TUCP and April SWRCB Order.
E. 13 February 2015 Protest, Objection, Petition for Reconsideration, Petition for Public Hearing and exhibits submitted the CSPA et al. regarding 3 February 2015 SWRCB Order;
F. 12 February Protest and petition submitted by South and Central Delta Water Agencies of the 23 January 2015 TUCP and 3 February 2015 Order;
G. 13 February 2015 Protest and Objection submitted by the Bay Institute regarding 3 February 2015 SWRCB Order;
H. Presentation and exhibits presented by Bill Jennings, Chris Shutes and Tom Cannon representing CSPA et al. at the 18 February 2015 SWRCB workshop on the TUCP;
I. Presentation and exhibits presented by Gary Bobker and Jonathan Rosenfield representing the Bay Institute at the 18 February 2015 workshop on the TUCP;
J. 26 February 2015 letter from Bill Jennings of CSPA regarding the economic impacts of drought in reference t o the TUCP;
K. 26 February 2015 letter from Bill Jennings of CSPA to Tom Howard regarding the 20 February 2015 letter by the State Water Contractors;
L. 26 February 2015 letter from Chris Shutes of CSPA regarding clarification of oral comments made at the 18 February 2015 workshop;
M. 30 March 2015 Protest and Objections submitted by the Natural Resources Defense Council and Bay Institute regarding the 24 March 2015 TUCP filed by the Department of Water Resources and U.S. Bureau of Reclamation;
N. 2 March 2015 supplemental comments submitted by Gary Bobker of the Bay Institute regarding responses to 1/23/15 TUCP and 3/2/15 Executive Director's Order;
O. 31 March email from John Herrick, with exhibit, to Diane Riddle regarding how changes to Vernalis standard will affect the 0.7 EC standard in the south Delta; and
P. 24 April 2015 request for public hearing or workshop on proposed 2015 Shasta operations and associated exhibits submitted by Kate Poole on behalf of NRDC, Bay Institute, Defenders of Wildlife and Golden Gate Salmon Association in so far as the comments are consistent with this protest.
Q. We also incorporate the Protests, Objections and Petitions for Reconsideration and Public Hearing, including exhibits, submitted by CSPA et al. on 3 March 2014, 28 April 2014 and 13 May 2014.

The SWRCB's 8 June 2015 TUCP Notice stated, "In order to be fully considered before the State Water Board takes action on the TUCP, objections filed in response to this notice should be submitted by 17 June 2015. Objections submitted after that date will be accepted, but should be received by the State Water Board no later than Monday, July 6, 2015." Nine days is an unreasonably inadequate period for the public to be able to provide comments on a matter as important as the TUCP before the SWRCB takes action. In the interest of providing comments prior to the SWRCB taking action on the TUCP, CSPA et al. submits these comments, under protest. We reserve the right to submit additional comments by 6 July 2015.

Summary of Temporary Urgency Change Petitions and Orders 2015

The Department of Water Resources (DWR) and U.S. Bureau of Reclamation (USBR) filed a Temporary Urgency Change Petition (TUCP) on 27 January 2015 to change water right conditions requiring the state and federal water projects to meet Bay-Delta flow and water quality objectives during February and March of this year. On 3 February 2015, the Executive Director of the SWRCB issued an order temporarily weakening Bay-Delta objectives; he modified the 3 February order on 5 March 2015. DWR and USBR submitted another TUCP on 24 March 2015 requesting approval of additional changes to flow and water quality requirements through September 2015. The Executive Director issued a modified Order on 6 April 2015 based on this request that approved changes through June. The 6 April 2015 Order included a requirement that USBR submit and, upon approval, implement a Temperature Management Plan for the Sacramento River to provide for reasonable protection of winter-run and other salmonids and also a requirement that USBR submit and, upon approval, implement a plan for operations of New Melones Reservoir that reasonably protects fish and wildlife on the Stanislaus River. The Executive Director has provisionally approved preliminary drafts of both the Sacramento and Stanislaus River plans but, on 29 May 2015, suspended his approval of the Sacramento River Temperature Management Plan pending further discussion.

The 21 May 2015 TUCP includes modifications to D-1641 that, if approved, will: (1) change the minimum Net Delta Outflow Index (NDOI) to a monthly average of 3,000 cfs for July, with a seven-day running average of no less than 2,000 cfs; (2) change the minimum Sacramento River Flow requirements at Rio Vista for the months of September, October, and November to a monthly average of no less than 2,500 cfs on average, with a seven-day running average of no less than 2,000 cfs; and (3) extend the change of the Western Delta agricultural salinity requirement at Emmaton to a compliance location at Threemile Slough on the Sacramento River through August 15.

Central Valley Pelagic and Anadromous Fisheries are in a State of Collapse

The precipitous collapse of the Central Valley's pelagic and anadromous fish populations since construction of the State Water Project (SWP) in 1967 has been documented at considerable length. Since the SWP began exporting water from the Delta, the Department of Fish and Wildlife's (DFW) Fall Midwater Trawl indices for striped bass, Delta smelt, longfin smelt, American shad, splittail and threadfin shad have declined by 99.7, 97.8, 99.9, 91.9, 98.5 and 97.8 percent, respectively. The U.S. Fish & Wildlife Service's (USFWS) Anadromous Fisheries Restoration Program (AFRP) documents that, since 1967, in-river natural production of

Sacramento winter-run Chinook salmon and spring-run Chinook salmon have decline by 98.2 and 99.3 percent, respectively, and are only at 5.5 and 1.2 percent, respectively, of doubling levels mandated by the Central Valley Project Improvement Act, California Water Code and California Fish & Game Code. Numerous species have been listed pursuant to state and federal endangered species acts.[1]

The SWRCB's failure to enforce water quality standards during the present drought and its waiver of compliance with these standards has greatly exacerbated conditions. Several fish species are now facing extinction. According to the 2014 Fall Midwater Trawl abundance indices (Figures 1-5), compiled from monthly trawls between September and December, abundance of Delta smelt, longfin smelt, striped bass, threadfin shad, American shad and splittail were the lowest, second lowest, third lowest, sixth lowest, second lowest and lowest, respectively, since 1967.

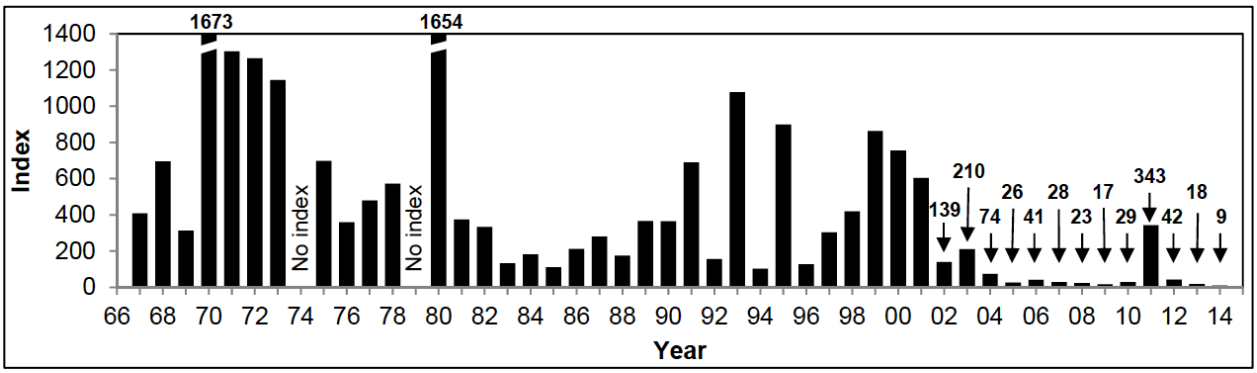
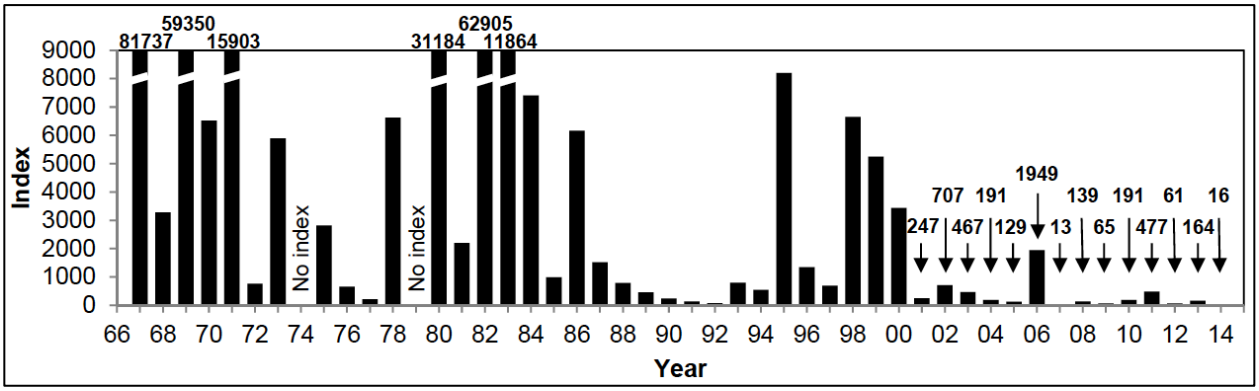


Figure 1, CDFW FMWT Delta Smelt annual abundance indices, 1967-2014.



[1] Southern DPS green sturgeon (*Acipenser medirostris*), federal threatened, candidate for federal endangered; Delta smelt (*Hypomesus transpacificus*), state endangered, federal threatened, Longfin smelt (*Spirinchus thaleichthys*), state threatened; Central Valley steelhead (Oncorhynchus mykiss), federal threatened; Sacramento winter-run Chinook salmon (Oncorhynchus tshawytscha), state endangered, federal endangered; Central Valley spring-run Chinook salmon (Oncorhynchus tshawytscha), state threatened, federal threatened; Central Valley fall/late-fall-run Chinook salmon (*Oncorhynchus tshawytscha*), federal species of concern, state species of special concern; Sacramento splittail (*Pogonichthys macrolepedotus*), state species of special concern; Pacific lamprey (*Entosphenus tridentate*), federal species of concern and river lamprey (*Lampetra ayresi*), state species of special concern. The Project also has potential to adversely affect Killer whales or Orcas (Southern Resident DPS) (*Orcinus orca*), federal listed as endangered because they are dependent upon Chinook salmon for 70% of diet and reduced quantity and quality of diet is one of the major identified causes of their decline.

Figure 2, CDFW FMWT Longfin Smelt annual abundance indices, 1967-2014.

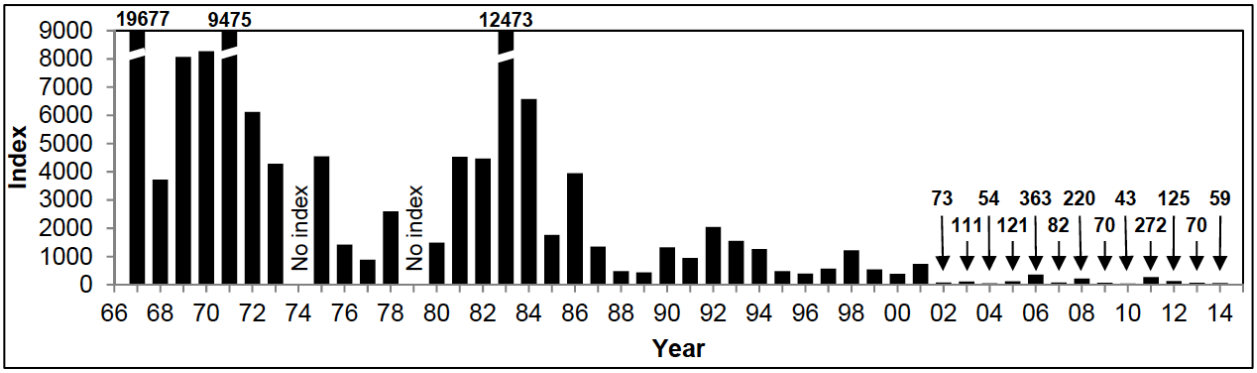


Figure 3, CDFW FMWT Striped Bass annual abundance indices, 1967-2014.

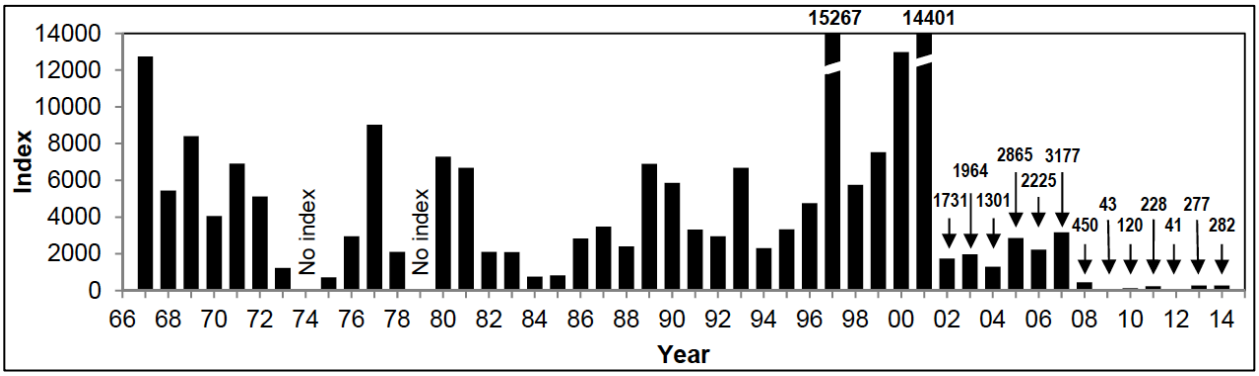


Figure 4, CDFW FMWT Threadfin Shad annual abundance indices, 1967-2014.

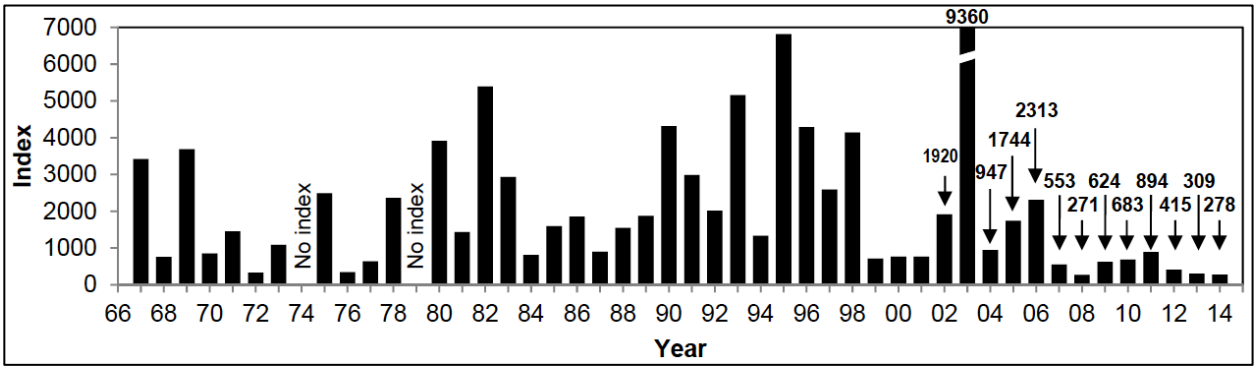


Figure 5, CDFW FMWT American Shad annual abundance indices, 1967-2014.

Spring Kodiak Trawl

The 2015 abundance index of DFW's Kodiak Trawl for adult Delta smelt, which was initiated following the 2000-2004 Pelagic Species Decline, was the lowest in history and reflected an 86% decline from 2004. This was significantly lower than any previous trawl and led fisheries scientist Peter Moyle to declare impending extinction of Delta smelt.

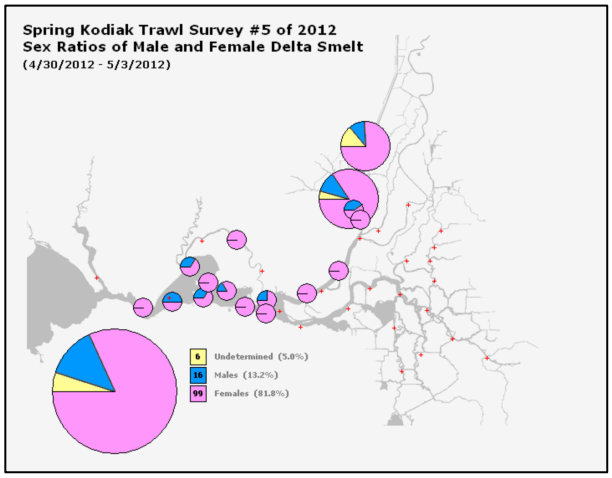


Figure 6, DFW Kodiak Trawl #5 Delta Smelt 2012.

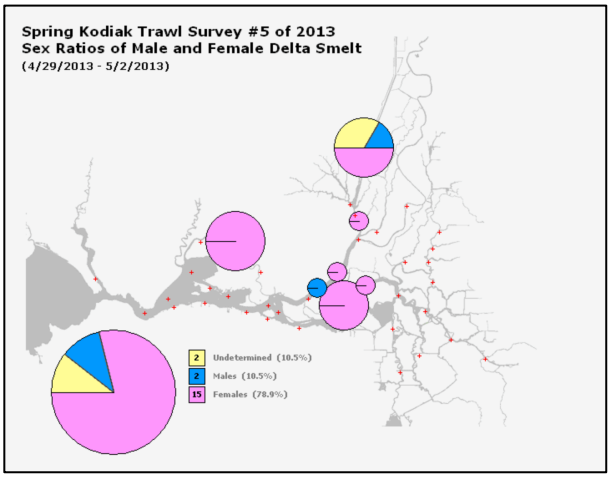


Figure 7, DFW Kodiak Trawl #5 Delta Smelt 2013.

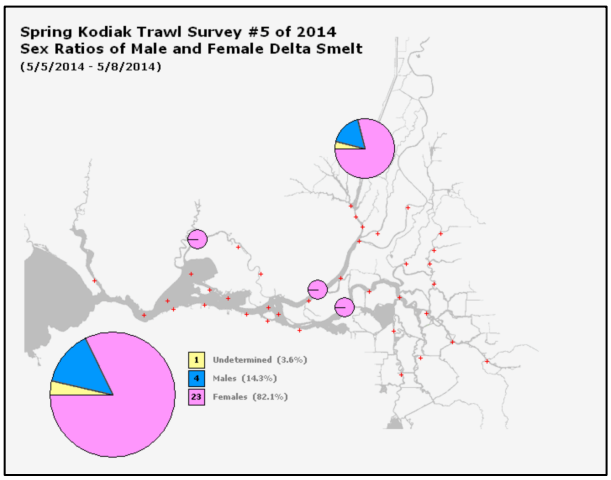


Figure 8, DFW Kodiak Trawl #5 Delta Smelt 2012.

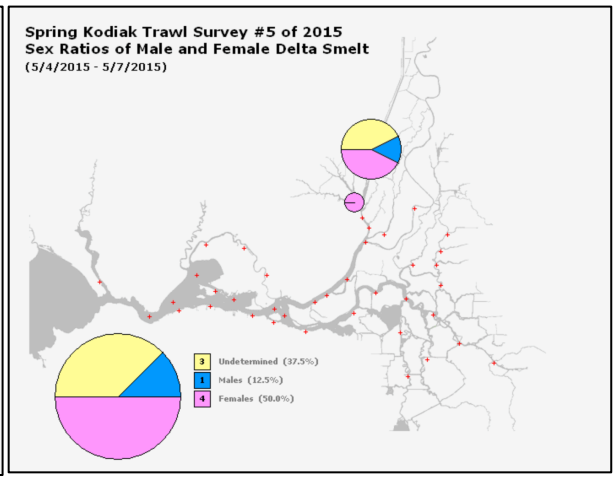


Figure 9, DFW Kodiak Trawl #5 Delta Smelt 2013.

Smelt Larva Survey

DFW's Smelt Larva Survey was initiated in 2009 to provide near real-time distribution data for longfin smelt and Delta smelt larvae in the Delta, Suisun Bay and Suisun Marsh. Survey #6 is conducted in late March. The total catch-per-unit-effort (CPUE) of the Smelt Larva Survey #6 for longfin smelt was 18,065.5 in 2013, 930.5 in 2014 and 606.3 in 2015; a 96.6% decline between 2013 and 2015. The total CPUE of the Smelt Larva Survey #6 for Delta smelt was 633.7 in 2013, 70.3 in 2014 and 25.4 in 2015; a 92.0% decline between 2013 and 2015.

Figures 10 through 13 below demonstrate the loss in range and numbers of larva Delta smelt over the last four years.

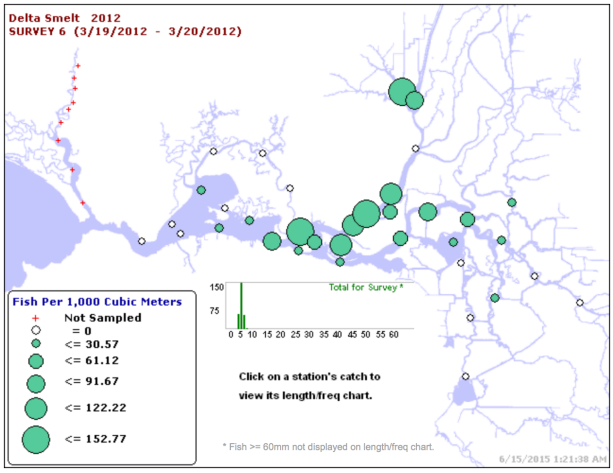


Figure 10, DFW Larva Survey #6 Delta Smelt 2012.

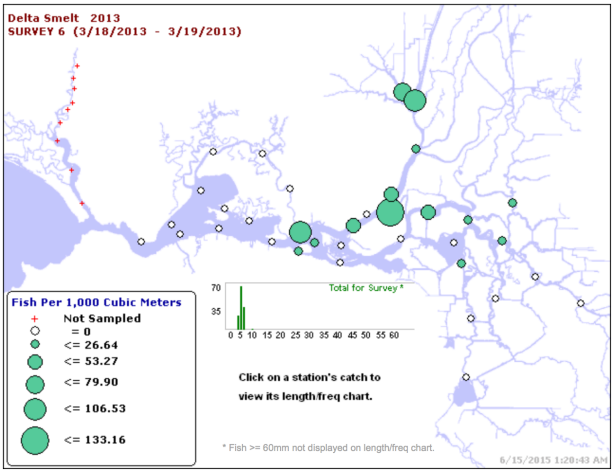


Figure 11, DFW Larva Survey #6 Delta Smelt 2013.

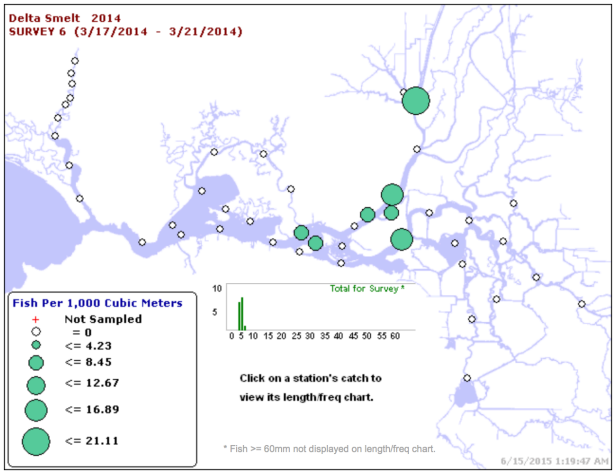


Figure 12, DFW Larva Survey #6 Delta Smelt 2014.

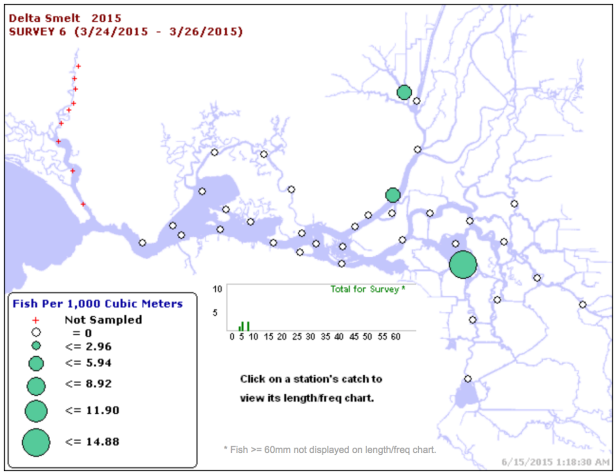


Figure 13, DFW Larva Survey #6 Delta Smelt 2015.

20 mm Survey for Delta Smelt

DFW's 20 mm Survey was initiated in 1995 to monitor postlarval-juvenile Delta smelt throughout their historical range. The 20 mm Survey #6 in late May of 2012 (Figure 14), 2013 (Figure 15), 2014 (Figure 16) and 2015 (Figure 17) demonstrates the progressive decline of Delta smelt during the present drought. In May of 2012 and 2013, smelt were collected throughout Suisun Marsh, Central Delta and Cache Slough/Sacramento Ship Channel. In May of 2014, reduced numbers of Delta smelt were identified in Cache Slough/Sacramento Ship Channel and only a few scattered smelt found in the Central Delta. In May 2015, fewer smelt were found in the Sacramento Ship Channel and none in the Central Delta. It should be remembered that DFW studies indicate that Delta smelt in the Sacramento Ship Channel are likely to perish should high summer temperatures de-stratify the channel. DFW's 2014 20mm abundance index was the second lowest in history. The 2015 index has not yet been released, but over the last few years, the index has been computed from Surveys 3 through 6 (April/May). However, the numbers of fish collected in Surveys 1-6 are the lowest in history.

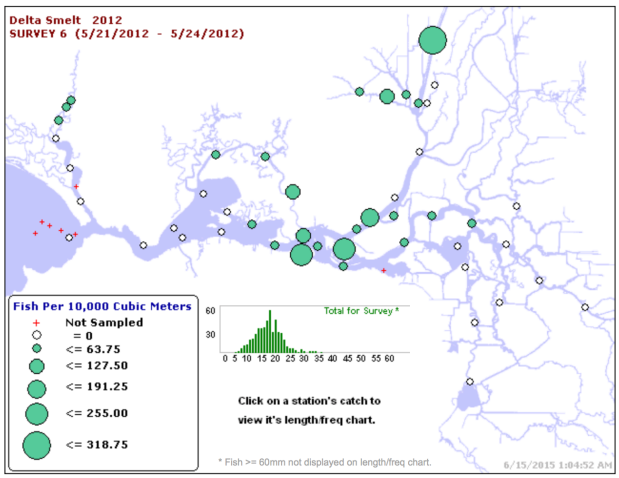


Figure 14, DFW 20mm Survey #6 Delta Smelt 2012.

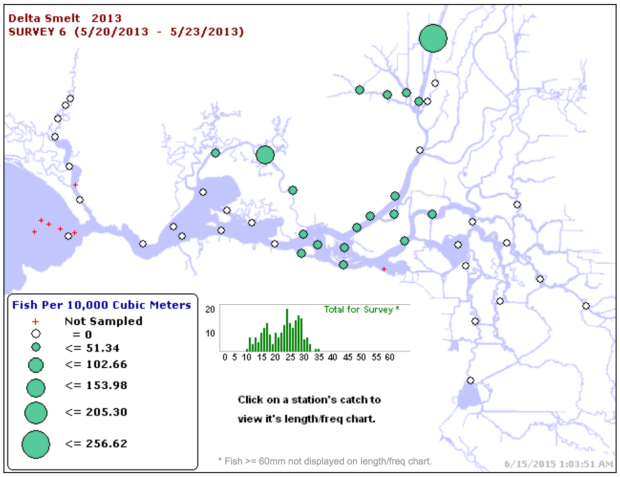


Figure 15, DFW 20mm Survey #6 Delta Smelt 2013.

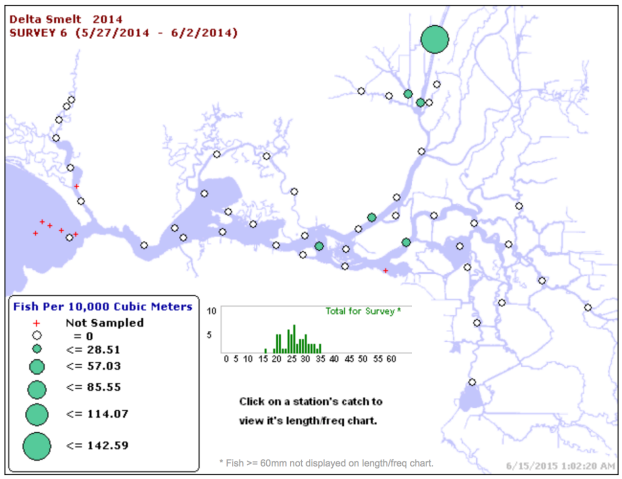


Figure 16, DFW 20mm Survey #6 Delta Smelt 2014.

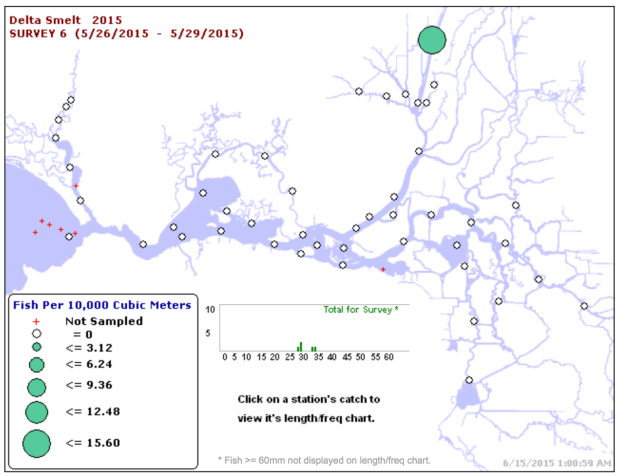


Figure 17, DFW 20mm Survey #6 Delta Smelt 2015.

Anadromous Fisheries

The Central Valley Project Improvement Act (CVPIA) was enacted in 1992 in response to declining salmon and steelhead fisheries in the Central Valley. The purposes of the Act included: protecting restoring and enhancing fish, wildlife and associated habitats in the Central Valley and Trinity River basins; addressing impacts of the Central Valley Project on fish, wildlife and associated habitats and improving the operational flexibility of the Central Valley Project; contributing to the State of California's interim and long-term efforts to protect the San Francisco Bay/Sacramento-San Joaquin Delta Estuary and achieving a reasonable balance among competing demands for use of Central Valley Project water.

Among the specific requirements of the Act was to develop and implement a program to double natural production of anadromous fish at levels twice the average levels attained between 1967-1991. The CVPIA's fish doubling requirement has been incorporated into the California Fish & Game Code and the Water Quality Control Plan for the Bay-Delta. Unfortunately, anadromous

fisheries have continued to decline, as evidenced by the USFWS's AFRP charts for the Sacramento River (Figures 18-20).

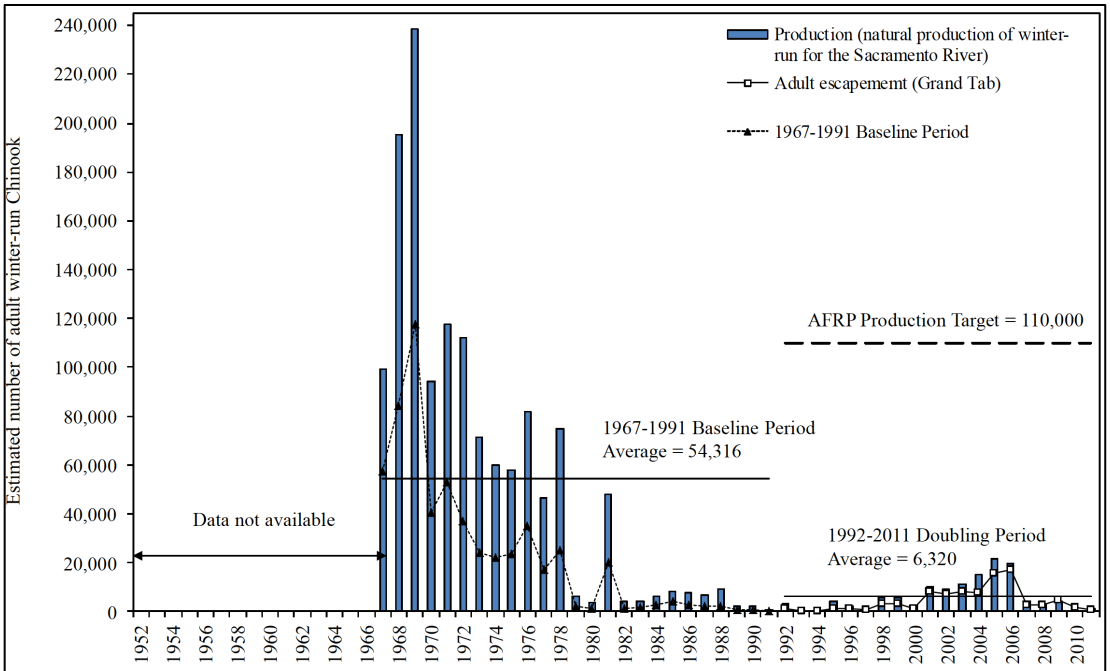


Figure 8. Estimated yearly adult natural production, and in river adult escapements for above RBDD mainstem Sacramento River winter-run Chinook salmon. 1992 - 2011 numbers are from CDFG Grand Tab (Apr 24, 2012). 1967-1991 Baseline Period numbers are from Mills and Fisher (CDFG, 1994).

Figure 18, CVPIA AFRP Doubling Goals, Sacramento River Natural Production of Winter-run Chinook Salmon.

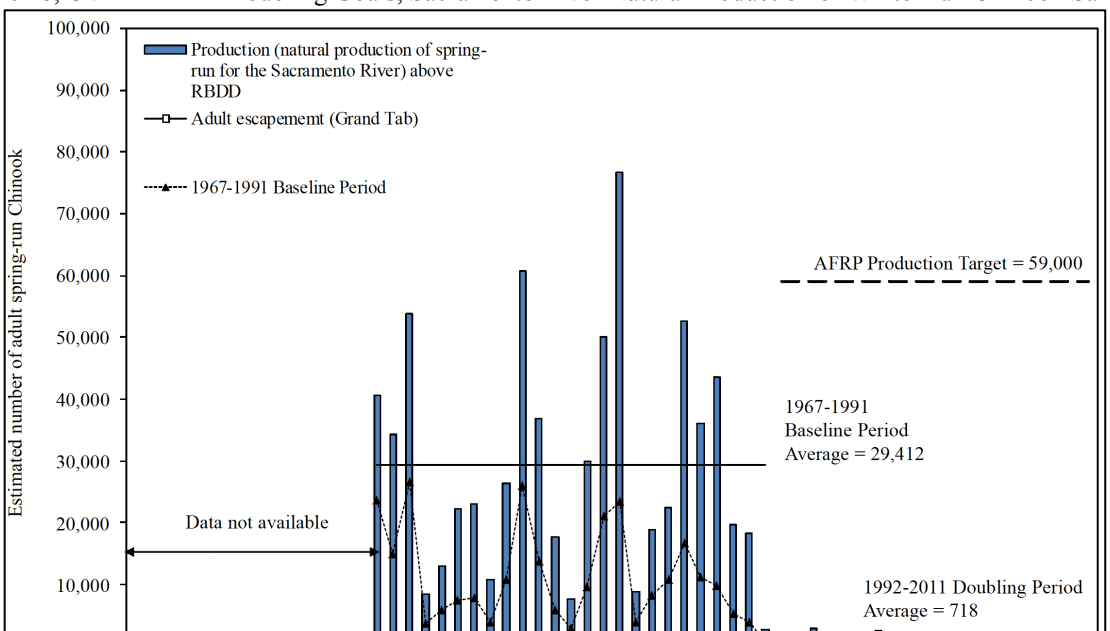


Figure 9. Estimated yearly adult natural production, and in river adult escapements for above RBDD mainstem Sacramento River spring-run Chinook salmon. 1992 - 2011 numbers are from CDFG Grand Tab (Apr 24, 2012). 1967-1991 Baseline Period numbers are from Mills and Fisher (CDFG, 1994).

Figure 19, CVPIA AFRP Doubling Goals, Sacramento River Natural Production of Spring-run Chinook Salmon.

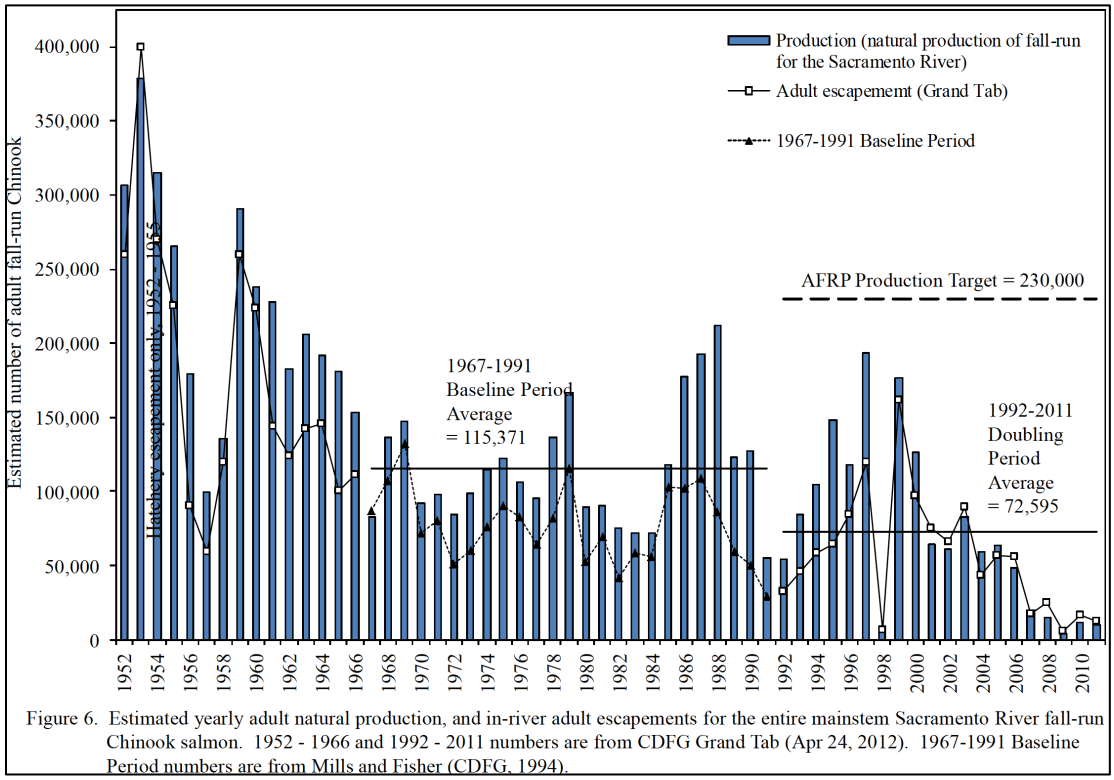


Figure 6. Estimated yearly adult natural production, and in-river adult escapements for the entire mainstem Sacramento River fall-run Chinook salmon. 1952 - 1966 and 1992 - 2011 numbers are from CDFG Grand Tab (Apr 24, 2012). 1967-1991 Baseline Period numbers are from Mills and Fisher (CDFG, 1994).

Figure 20, CVPIA AFRP Doubling Goals, Sacramento River Natural Production of Fall-run Chinook Salmon.

If anything, San Joaquin River fisheries are in worse shape. USFWS's AFRP documents that, since 1967, in-river natural production of fall-run Chinook salmon on the Stanislaus and Tuolumne Rivers have declined by 92.6 and 93.6 percent, respectively, and are 76.6 and 81.8 percent, respectively, below the doubling levels mandated by the Central Valley Project Improvement Act, California Water Code and California Fish & Game Code. According to DFW's Grand Tab Central Valley Chinook Population Database Report, escapement of fall-run Chinook salmon back to the Stanislaus and Tuolumne Rivers, between 1967 and 2014, declined by 74.3 and 93.6 percent, respectively. During the present drought, the SWRCB has allowed export pumping to exceed San Joaquin River flow during the spring migration period. Consequently, the vast majority of fish migrating out of the San Joaquin River have been drawn to the export pumps and few, if any, have reached San Francisco Bay.

Fisheries Endure Super Critical Drought Conditions 50% of the Time

Fishery resources have been disproportionally impacted by drought because of increased consumptive use of water and the failure of the SWRCB to adjudicate water right claims that exceed average unimpaired flow in the Delta and tributary streams fivefold. In fact, Fisheries dependent on Delta outflow have endured the functional flow equivalent of super critical drought conditions in half of all years since 1975.

In reality, Delta pelagic fisheries have suffered proportionally greater flow reductions than evidenced by the bottom row in Figure 21. While the unimpaired flow, as represented in the top

row is accurately gaged, the percent of unimpaired flow reaching San Francisco Bay is significantly less because Delta outflow is an inflated calculated guess.

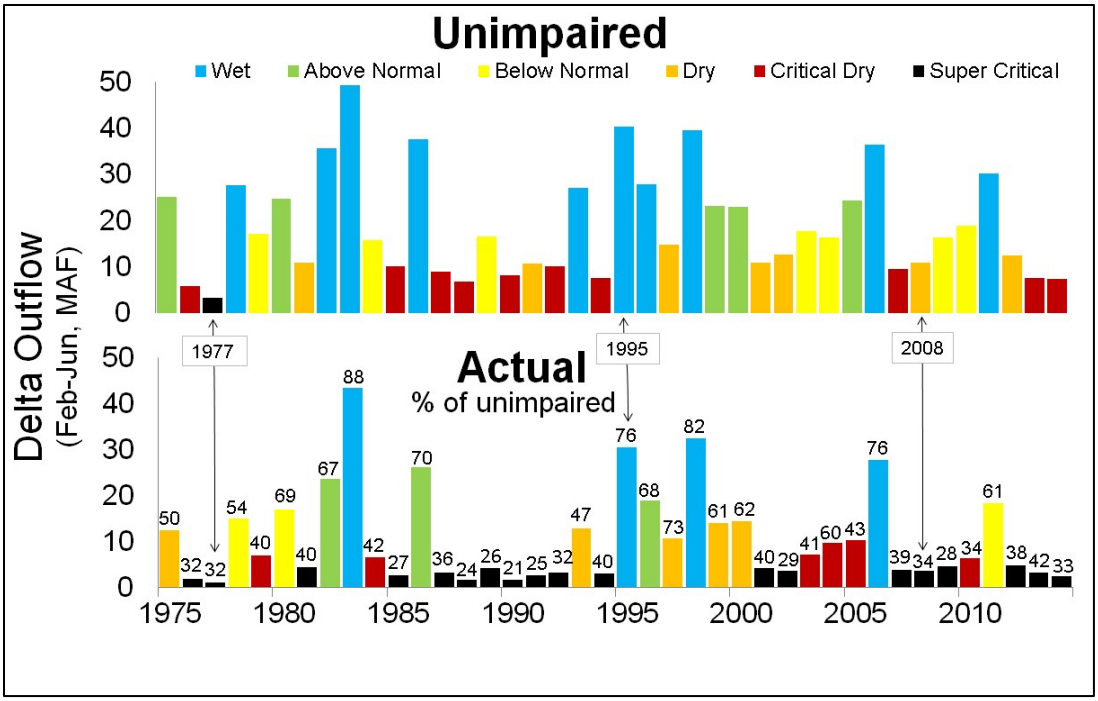


Figure 21, Actual Flow to the Bay vs. Unimpaired Flow. Bay Institute, 2015.

Actual Delta Outflows Are Less Than Reported

As discussed at greater length in our 6 May 2015 Protest, the Net Delta Outflow Index (NDOI) used by the SWRCB for Bay-Delta Plan water quality standards is based upon a number of estimates and assumptions and doesn't account for tides. The U.S. Geological Survey (USGS) maintains four state-of-the-art gages that capture all Delta outflow and accounts for tides. The spring and neap tides that regularly occur transport enormous quantities of water into and out of the Delta. Examination of the data reveals substantial differences between NDOI and the USGS gages during drier periods.

CSPA fishery consultant and biostatistician Thomas Cannon compared the differences between the SWRCB's NDOI with the USGS measured Net Delta Outflow (NDO) and discovered that the SWRCB is seriously overestimating actual Delta outflow. The measured NDO in July 2013 averaged 1,169 cfs instead of the estimated NDOI's 5,360 cfs and in May 2014 NDO averaged a minus 45 cfs while NDOI averaged 3,805 cfs.[2] Recently, he compared NDO with NDOI for March (Figure 22) and April 2015 (Figure 23). NDO for March 2015 was 3,523 cfs while calculated NDOI was 4,975 cfs; for April, NDO was 3,034 and NDOI was 5,362. The NDOI over estimated Delta outflow by 1,452 cfs March 2015 and 2,328 cfs in April 2015. That is a considerable difference for salinity dependent species.

[2] http://calsport.org/news/wp-content/uploads/CSPA-NDO-v-NDOI-2.pdf

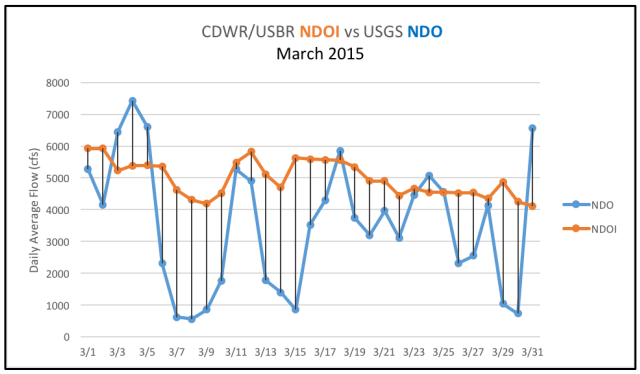


Figure 22, USGS vs. NDOI, March 2015.

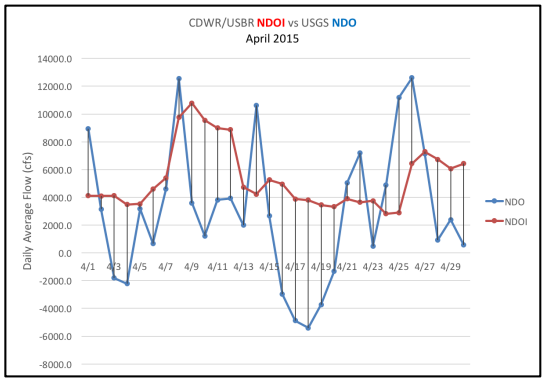


Figure 23, USGS vs. NDOI, April 2015.

If Approved, the TUCP Will Likely Result in the Extinction of One or More Species

Given the already depleted populations of Central Valley fisheries, the series of orders issued by the SWRCB's Executive Director over the last two years weakening Bay-Delta water quality standards and last year's grievously inadequate Temperature Management Plan for the Sacramento River have had a devastating impact on both pelagic and anadromous fisheries.

Delta smelt are facing impending extinction, with longfin smelt not far behind. Abundance levels of all of the Delta's native pelagic species are at or near historic lows and further population losses over the coming months have a high probability of sending one or more species into the abyss.

The 2013 brood year of Sacramento River winter-run, spring-run and fall-run Chinook salmon was hammered, the 2014 brood year of all three species was decimated and there is a real possibility that the 2015 brood year could experience similar losses if Upper Sacramento River water temperature cannot be maintained at 56 degrees Fahrenheit later this year. The loss of a third brood year would likely jeopardize the continued existence of these species.

A similar story is unfolding on the San Joaquin River. Approval of the proposed TUCP will aggravate existing conditions and compound existing problems facing species already facing a high risk of extirpation.

The proposed TUCP would modify D-1641 standards for July through November. Specifically, it would: reduce Delta outflow by 25% in July; reduce Sacramento River flows at Rio Vista during September, October and November by 17%, 17% and 29%, respectively (7-day running averages could be significantly less); and extend the change in the salinity compliance point from Emmaton upstream to Threemile Slough until 15 August. If approved, these changes would seriously worsen an already grave situation.

These changes to the existing critical-year standards in D-1641 will draw the low salinity zone (LSZ) into the Central Delta where Delta smelt will be exposed to higher and potentially lethal temperatures this summer. The center of the LSZ is X2 (two parts per thousand salinity or 2.64 ummhos/cm EC). Under D-1641 critical year standards of 7,00 cfs outflow, X2 would normally

be located in the vicinity of Collinsville. Under the existing TUCP, X2 has moved upstream between Emmaton and Threemile Slough.

Temperatures of 70-73°F are stressful to Delta smelt: temperatures of 73-77°F are highly stressful to lethal; and 77F is generally regarded as a lethal endpoint. Given the multiple stressors existing in the Delta, temperature tolerances developed in laboratory studies are optimistic.

Water temperatures at Emmaton and Threemile Slough in early June 2015, with Delta outflows averaging 4,500 cfs, have reached 73.3°F and 73.7°F, respectively. These temperatures will almost certainly be higher in July/August, especially considering that both the current NOAA one-month and three-month temperature probability predictions are for significant higher than normal temperatures. A reduction in outflow to 3,000 cfs, combined with the shift of the agricultural salinity compliance point to Threemile Slough, will move the LSZ and X2 further upstream where, based upon examination of temperature/salinity/flow data from previous years, temperatures are likely to reach lethal levels.

A conservative prediction based upon historical data is that the proposed reduction in outflow, coupled with the relocation of the salinity compliance point to Threemile Slough will likely lead to near-lethal or lethal temperatures in the Central Delta. This will further stress the small number of Delta smelt remaining in the Delta and jeopardize the existence of the species. We believe outflows should be significantly increased or, at the very minimum, be maintained at D-1641 critical year levels.

The situation facing Sacramento River Chinook salmon is equally dire. Despite the fact that it has long been known that USBR's temperature model is flawed and underestimates temperature impacts to salmon, the SWRCB Executive Director, with the concurrence of NMFS, USFWS and DFW approved USBR's 2014 Sacramento River Temperature Management Plan. That plan moved the 56°F temperature compliance point upstream from Red Bluff to Clear Creek thus eliminating much of the historical spawning habitat. Nonetheless, USBR still lost control of water temperature at Shasta Reservoir in the fall of 2014 led to the catastrophic loss of the majority of the brood year of winter-run, spring-run and fall-run Chinook salmon that spawned in the Sacramento River. In early 2015, the Executive Director acknowledged that a mistake was made.

In April, USBR submitted a proposed Temperature Management Plan for 2015. Projected releases from Shasta Reservoir far exceeded levels necessary for temperature control and were designed to accommodate the delivery of approximately 1.6 MAF of water to Sacramento River Settlement Contractors. CSPA, TBI, NRDC and others urged the SWRCB to reduce Shasta Reservoir water releases in April and May because excessive water deliveries would deplete cold-water storage in Shasta Reservoir and likely result in significant mortality of salmon in 2015. Nevertheless, the SWRCB Executive Director, again with the concurrence of the fishery agencies, approved the Temperature Management Plan on 14 May 2015.

USBR subsequently notified the Executive Director that it would be impossible to maintain temperatures at the 56°F temperature requirement throughout the temperature control season.

The Executive Director suspended his approval of the Temperature Management Plan and directed USBR to maintain Shasta Reservoir water releases at less than 7,500 cfs until further notice on 29 May 2015. A 56°F temperature requirement is not fully protective of salmon as it is on the upper limit of sublethal temperature impacts and results in significant indirect effects on juvenile salmon experiencing multiple stressors.

On 16 June 2015, the Executive Director notified USBR that the Temperature Management Plan remains suspended and, in the interim, USBR is required to maintain Keswick Reservoir (downstream of Shasta) base flow releases of 7,250 and target 57°F at Clear Creek, not to exceed 58°F. According to the U.S. Environmental Protection Agency, temperatures of 57-58°F cause direct mortality during salmon egg incubation and is detrimental to juvenile salmon. The SWRCB will continue to meet with USBR, DWR and the fishery agencies to determine future actions. As of this writing, the actual plan has not been released to the public or submitted to the fishery agencies for review and concurrence or consistency determinations with respect to endangered species acts.

The conundrum facing the SWRCB is apparent. If USBR delivers 1.6 MAF of water (of which, several hundred thousand acre-feet is destined to be transferred to south-of-delta agencies) in the summer/fall of 2015, there will insufficient storage in Shasta Reservoir to maintain temperature requirements to protect salmon.

However, the Sacramento Settlement Contractors exert substantial political power, as exemplified by delivery to them of 1.4, 1.6 and 1.2 MAF of water in the first three years of the present drought and allocation to them of 1.6 MAF in this fourth year of drought. Early June Shasta water releases are ranging between 7,000 and 7,100 cfs but flows reaching Wilkins Slough are only about 3,400 to 3,500 cfs, indicating that normally projected deliveries are being made to the Sacramento Settlement Contractors.

With temporarily reduce releases from Shasta, USBR is apparently making up the difference in water necessary for Delta outflow by increasing releases from other reservoirs. Water discharges in mid-June from Folsom Dam on the American River have increased to 2,000 cfs, thereby depleting Folsom Reservoir of storage necessary to protect American River salmon and steelhead and needed to supply Sacramento area communities. Water discharges from Oroville Reservoir on the Feather River in mid-June have increased to 3,200-3,400 cfs, with flows near Gridley above 1,750 cfs. Oroville Reservoir is in an even more precarious situation than Shasta, with storage at only 50% of historical average.

The SWRCB should limit Shasta releases in the summer to protect salmon and water savings should come from a fair-share reduction in deliveries to the Sacramento Settlement Contractors. A significant percentage of summer releases must be committed to meeting USBRs responsibility for Delta outflow to avoid redirecting impacts to other reservoirs. Relative to last year, flows should be increased in the fall in order to ensure temperature compliance. An ancillary benefit of reduced summer releases would be lower flows when salmon spawn thereby eliminating the huge spawning redd dewatering that occurred last year when flows were dramatically reduced following the end of the irrigation season.

Considering the loss of the 2014 brood year and substantially reduce natural production in 2013, the loss of the 2015 brood year of winter-run and spring-run Chinook salmon would be devastating to the fisheries and would bring these species to the brink of extinction. It must not be allowed to occur.

The San Joaquin River is simply a disaster and fisheries are being devastated. In April, the SWRCB Executive Director reduced June flows in the river by more than 70% (200 cfs monthly average, 7-day running average no more than 20% below the minimum). In early June, flows declined to a low of 151 cfs at Vernalis, temperature reached 86°F and EC was 857.26 uS/cm. As of this writing, it is unknown what decisions will be made regarding October flows.

A Few Words About South Delta Salinity

As noted above, flows declined to a low of 151 cfs at Vernalis on the San Joaquin River, temperature reached 86°F and EC was 857.26 uS/cm in early June. Upstream of the Merced River confluence with the San Joaquin, flow was 21 cfs and EC reached 3,386.0 uS/cm at Newman. Thirty-day EC compliance standards are presently being violated at Brandt Bridge, Old River Near Tracy and Old River Near Middle River. Given depleted storage in New Melones (Stanislaus) and Exchequer (Merced) and low flows in the Tuolumne River, it is likely that EC at Vernalis will be violated this summer.

The Bureau and DWR have failed to comply with requirements in SWRCB Cease & Desist Order WR 2006-0006, yet the TUCPs and resulting Orders have remained silent on violations of south Delta salinity standards. Given the inability of the water boards to control salinity discharges from the west side of the San Joaquin Valley into the San Joaquin River, the SWRCB has apparently written off south Delta agriculture.

The Present Drought Crisis and Impending Extinction of Species Have Been Exacerbated by Mismanagement of the State and Federal Water Projects

Droughts are a routine occurrence in California's Mediterranean climate. According to DWR, there have been ten multi-year droughts of large-scale extent in the last 100 years spanning 41 years, including 1918-20, 1923-26, 1928-35, 1947-50, 1959-62, 1976-77, 1987-92, 2000-02, 2007-09, and 2012-15. Below normal water years occur more than half the time, and natural ecosystems have evolved and adjusted to periodic droughts.

The inevitability of drought was extensively discussed during the numerous workshops and evidentiary hearings before the SWRCB over the last four decades during development the various iterations of Bay-Delta Plans and implementing water rights orders. It was discussed in the evidentiary proceeding leading up to D-1641. In D-1641, explicit provision was made for critically dry years, which included substantially less stringent, and consequently less protective, water quality and flow objectives. However, the SWRCB has ignored or weakened those criteria in each of the last three years.

Over the last several years, in workshop and protests, CSPA et al. have described the prevalence of drought in California and pointed out that the state and federal projects continue to operate

and deliver water as if there is no tomorrow. The pattern and practice of the projects is to draw down reservoir water under the assumption that the coming year will be wet, leaving little reserve storage in the event they're wrong. And in the event of another dry year, they again endeavor to maximize deliveries, without a margin of safety, in the hope that rains will return.

DWR summed up the prevailing attitude in a 1976 report in the midst of the extreme 1976-1977 drought:[3]

> The usual strategy described in discussions with Central Valley surface water project operators who are experiencing a below-normal supply is to serve all the water possible on demand of the users, carrying little or no water over to guard against a dry 1977…. This strategy is based on the belief that a good crop this year is desirable, since next year will probably be a near-normal or better water supply.

1976-1977 Drought

The fall/winter/spring of 1975/76 was exceptionally dry: the third lowest in more than a 100 years of record. Yet the SWP and CVP drained their reservoirs to export a then record high 4.95 MAF from the Delta. Indeed, DWR opted to provide 600 TAF of "surplus" water from Oroville to Kern County contractors for $2.95 per acre-foot. The following year was the driest year in the state's record history. With depleted storage, the projects exported 2.2 MAF from the Delta and delivered 75% of contracted supplies to Sacramento River and Exchange Contractors. Shasta storage fell to almost 500 TAF (Figure 24) and Oroville (Figure 25) went below 1 MAF. Fisheries were devastated by low flows.

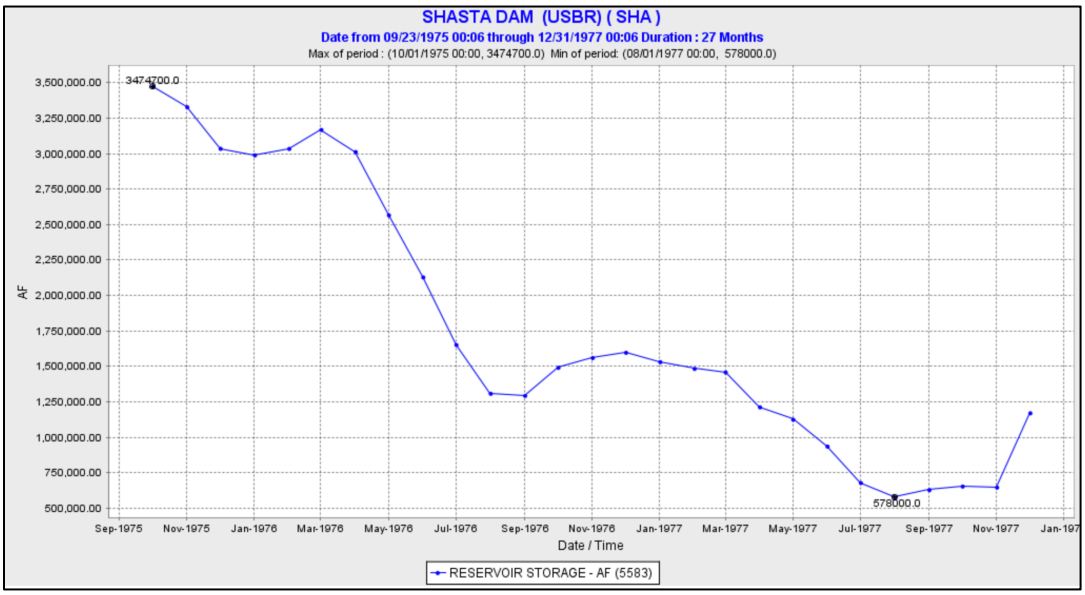


Figure 24, Shasta Dam Storage and Drawdown, 1976-1977.

[3] California Department of Water Resources, *The California Drought – 1976*, May 1976. http://www.water.ca.gov/waterconditions/docs/11_drought-1976.pdf

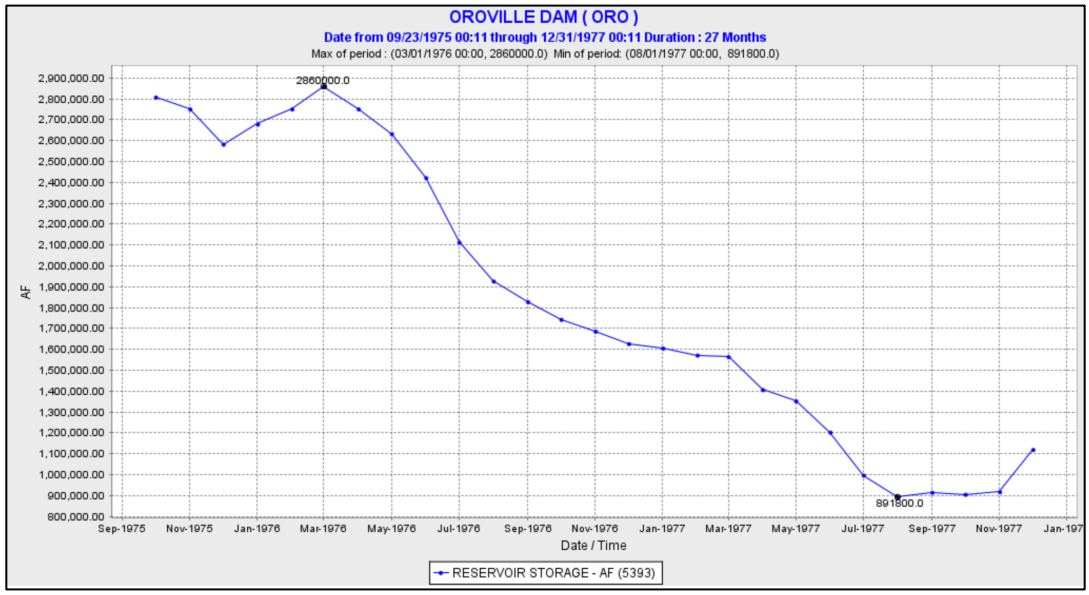


Figure 25, Oroville Dam Storage and Drawdown, 1976-1977.

1987-1992 Drought

The pattern and practice was repeated in the six-year drought between 1987 and 1992. Delta exports were maintained during the first four years of the drought. In 1987, 1988, 1987 and 1990 Delta exports were 5.2, 5.7, 6.1 and 5.96 MAF, respectively, as reservoirs were increasingly depleted. Sacramento River and Exchange Contractors received 100% of contract water. As reservoir storage plunged, the Projects still exported 3.3 MAF in 1991 and 3.1 MAF in 1992.

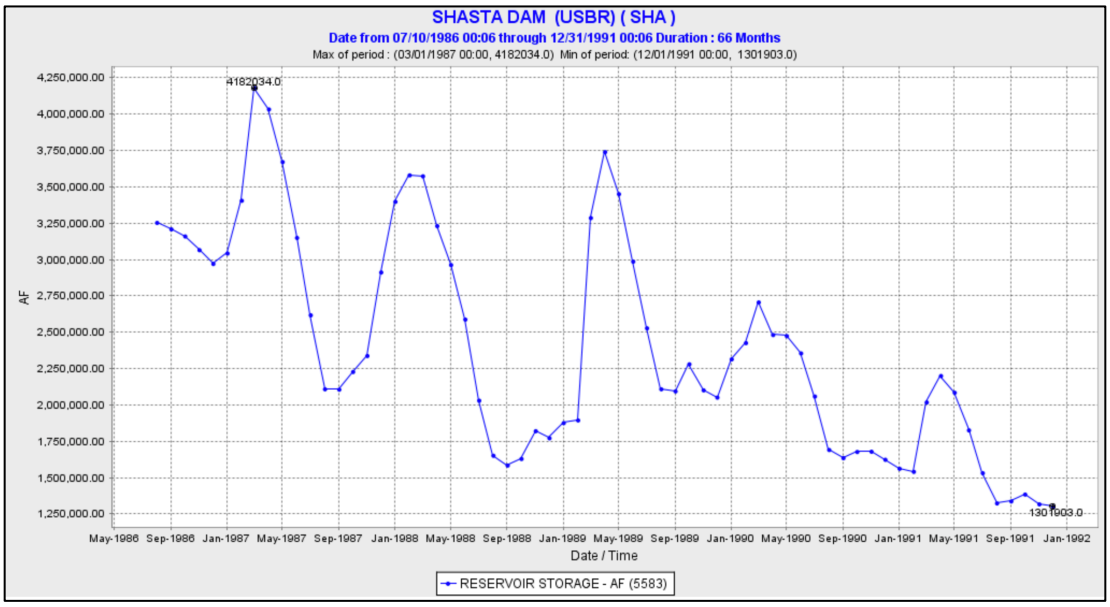


Figure 26, Shasta Dam Storage and Drawdown, 1987-1992.

Facing depleted storage, the SWRCB agreed to relax water quality requirements and subsequently announced that it wouldn't take enforcement action for hundreds of days of

violations of standards established to protect water quality and fisheries. Fisheries suffered. Both Delta smelt and winter-run Chinook salmon were listed pursuant to the Endangered Species Act, and invasive species, like the overbite clam, expanded their range and became entrenched in the estuary.

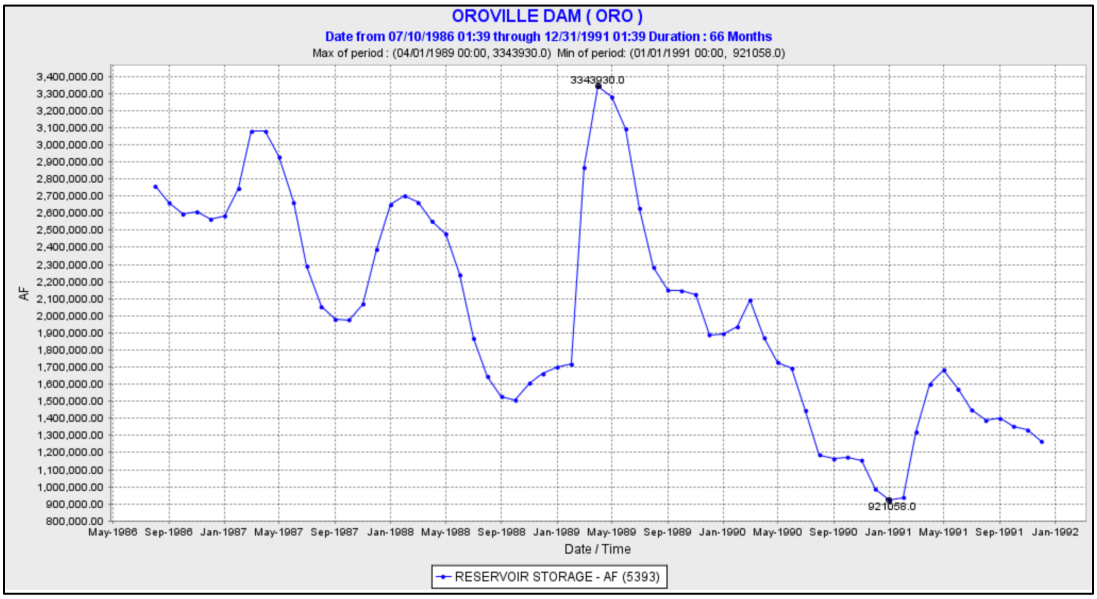


Figure 27, Oroville Dam Storage and Drawdown, 1987-1992.

2007-2009 Drought

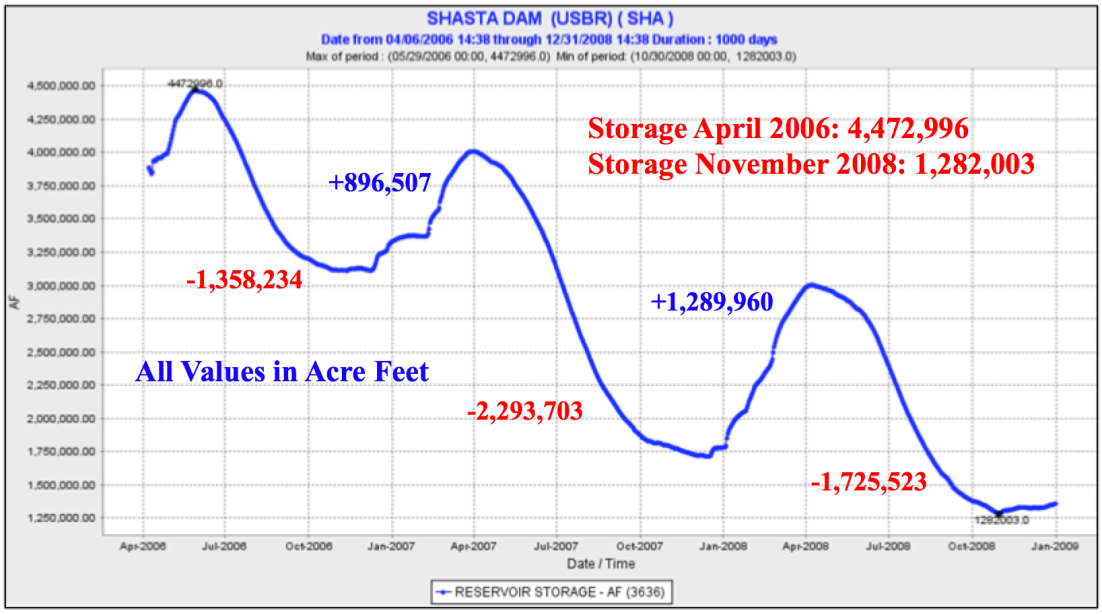


Figure 28, Shasta Dam Storage and Drawdown, 2007-2009.

The pattern and practice continued during the 2007-2009 drought. Despite an extremely dry winter, the projects exported 5.8 MAF of water in 2007 and another 3.7 MAF in 2008. Sacramento River and Exchange Contractors received 100% of contracted supplies. Populations

of pelagic and anadromous fisheries continued to decline. A crisis comparable to this year would have occurred during 2007-2009 but for a March Miracle that occurred in the late spring of 2009.

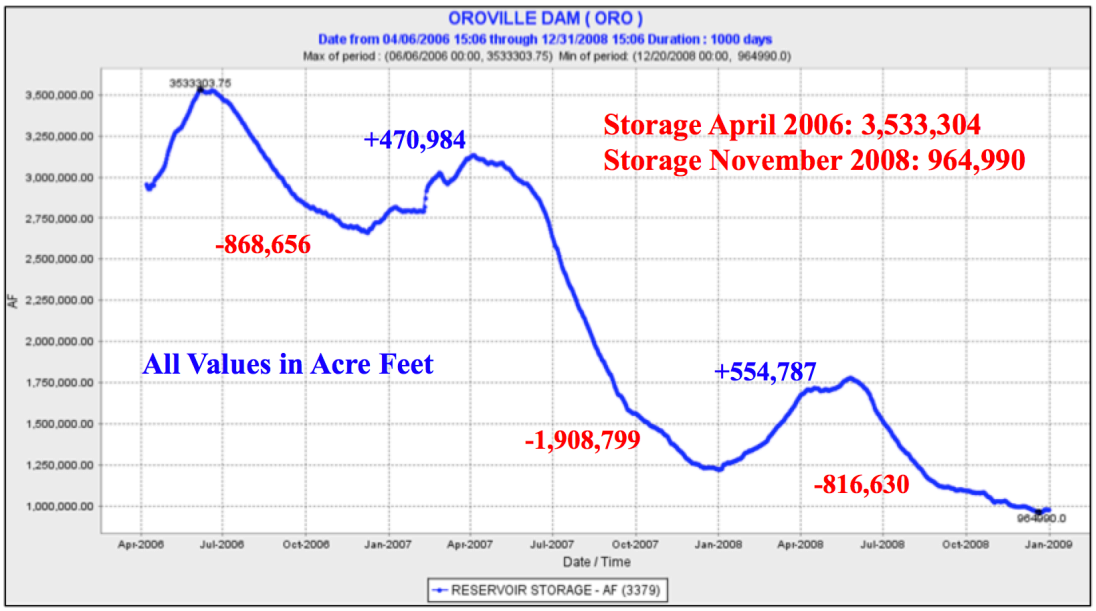


Figure 29, Oroville Dam Storage and Drawdown, 2007-2009.

2012-2015 Drought

The 2012-2015 drought is exceptional only in the sense that the SWRCB moved rapidly to weaken crucial standards established to protect water quality and fisheries.

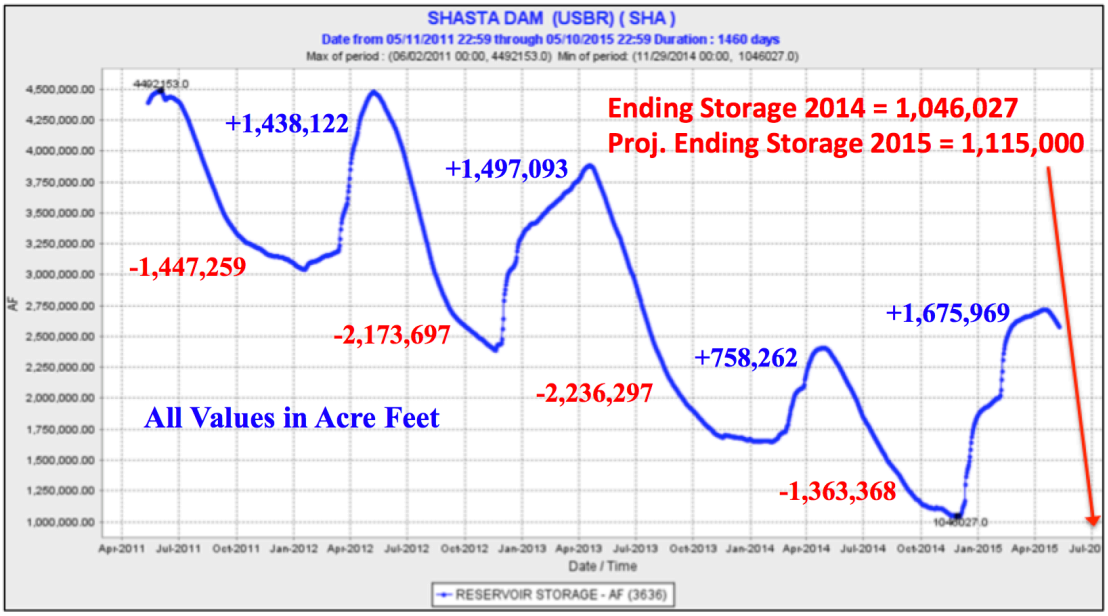


Figure 30, Oroville Dam Storage and Drawdown, 2012-2015.

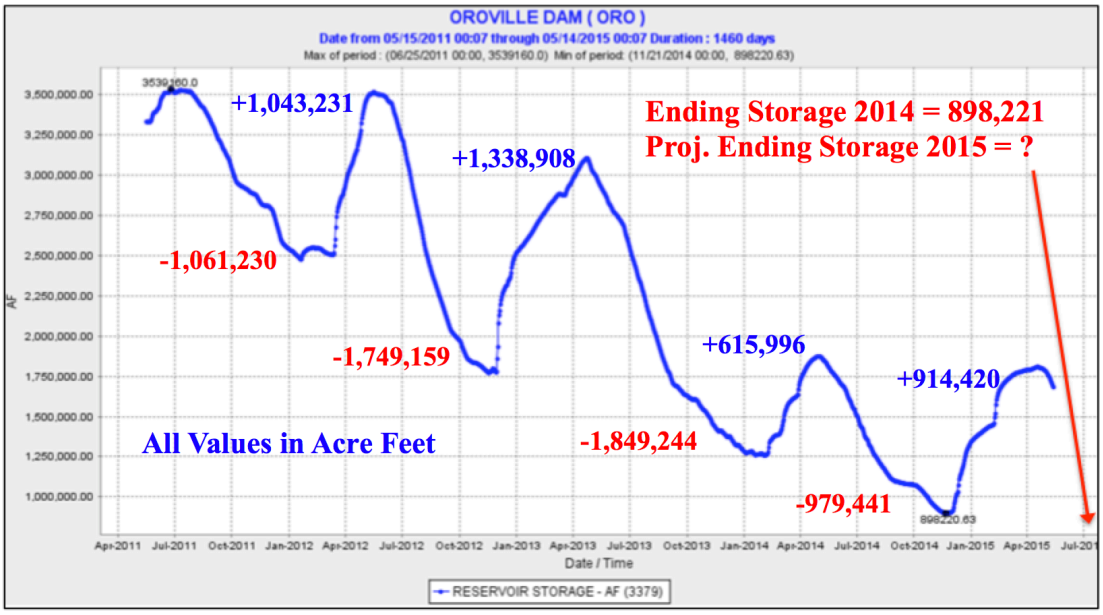


Figure 31, Oroville Dam Storage and Drawdown, 2012-2015.

Following a below normal year in the Sacramento River Basin and a dry year in the San Joaquin River Basin, the SWP and CVP exported 4.97 MAF of water in 2012. The Sacramento River and Settlement Contractors received 100% of contracted supplies and agricultural contracts in the San Joaquin Valley received 40%.

2013 was a dry year in the Sacramento River Basin and a critically dry year in the San Joaquin River Basin. CVP and SWP exports were 4.3 MAF in 2013 and the Sacramento River Contractors and Exchange Contractors received 100% of contracted water. Despite 2013 being classified as a "dry" year, the SWRCB informed the DWR and USBR that it would not take enforcement action if the Projects operated to critical-year water quality standards.

2014 was a critically dry year in both the Sacramento and San Joaquin basins. The CVP and SWP deliveries were reduced to 4.2 MAF of water and the Sacramento River Settlement Contractors and Exchange Contractors received 75% and 65% of contracted water, respectively. In response to a series of TUCP requests, the SWRCB Executive Director issued a number of orders weakening Delta water quality standards. Because storage in Shasta Reservoir had been drawn down in the first two drought years, the Executive Director agreed to a temperature management plan on the Sacramento River that compressed available spawning habitat to a few miles above Clear Creek in Redding. As expected, populations of Delta pelagic species plummeted and the inability to maintain sufficient cold water in Shasta Reservoir led to the loss of 95 % of Sacramento winter-run Chinook salmon, virtually the entire year class of in-river spawning Sacramento River spring-run Chinook salmon and 98 % of Sacramento fall-run Chinook.

As we discussed more fully in our 6 May 2015 Protest of the SWRCB's 24 April 2015 TUCP Order, reservoir operations and depletions of Shasta and Shasta Reservoirs mirror operations and depletions in other reservoirs throughout the Central Valley. In fact, present storage, as a

percentage of historical average, in Folsom, New Melones and Exchequer Reservoirs is much less than Shasta and Oroville and those reservoirs may reach dead pool later this year.

2015 is another critically dry year in both the Sacramento River and San Joaquin River Basins. The CVP and SWP have already exported approximately 1.5 MAF of water and expect to export a total of more than 2 MAF. Sacramento Valley and Exchange Contractors will receive about 75% of contracted water. The SWRCB Executive Director has issued a series of TUCP Orders that have relaxed water quality standards and is expected to issue more in the near future.

Prudence, common sense and a decent respect for the environment and public trust resources would dictate that water agencies, in a state that faces below normal water years more than 50% the time and experiences drought sequences more than 40% of the time, would not deliver full contract demands in a summer following a dry or critically dry winter. They would not attempt to maximize deliveries in the second and third years of a drought until reservoir storage reserves shrink to critically low levels. Finally, they would not then attempt to escape the consequences of their actions by insisting that minimal flows reserved for the environment, water quality and already depleted fisheries be drastically reduced so they could again maximize water deliveries. But that is exactly what happens in droughts.

This pattern and practice has repeated itself for decades: 1976-1977, 1986-1992, 2001-2002, 2007-2009 and 2012-2015. DWR and USBR have refused to adjust to California's Mediterranean climate and over-subscribed system because they count on the SWRCB to bail them out during droughts by weakening water quality and flow criteria. And they've been right: the SWRCB has continued to bail them out by relaxing criteria and encouraging them to continue to operate on the edge of crisis. DWR and USBR also count on DFW, USFWS and NMFS to bail them out during droughts by agreeing that their proposals to weaken standards do not contravene the respective biological opinions. And they've been right: the fishery agencies have continued to provide quick concurrence memos, while the Valley's pelagic and salmonid fisheries continue their inexorable march toward extinction. It is always the Delta's fisheries and beneficial uses that pay the price.

Figures 32 and 33 provide an illustrative example of how successfully water agencies have been in persuading the SWRCB to externalize the adverse impacts arising from mismanagement by the water agencies on to the beneficial uses of the Delta and California's public trust resources. These charts were taken from the SWRCB staff presentation at the 20 May 2015 workshop on the drought. In 2014 (Figure 32), regulatory outflow protecting fisheries and Delta farmers was cut by 43% so that Delta exports could be increased from 14% to 17% of total watershed water use. The agencies apparently will receive greater benefits in 2015 (Figure 33), as regulatory outflow is projected to be slashed almost 78% so that Delta exports can be increased from 13% to 19% of watershed use. It should be noted that salinity control in the charts is water required to maintain the 1.0 ummhos/cm EC standard at the export pumping facilities before Delta water exports (red sector) are permitted. While there are some ancillary benefits to the environment from this water (green sector), it does not represent the flows needed to protect Delta farmers and fish faced with extinction (blue sector).

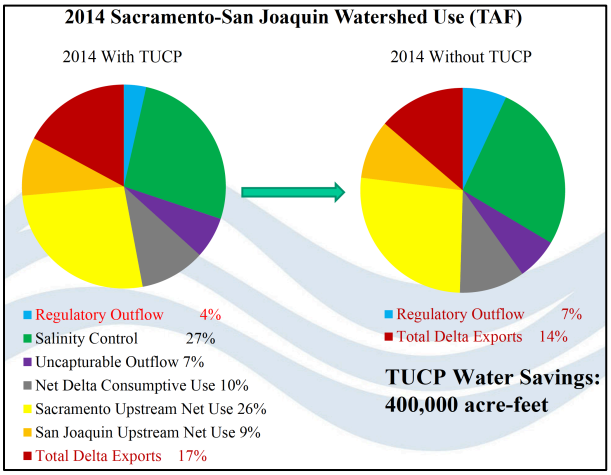


Figure 32, SWRCB, TUCP Effects 2014.

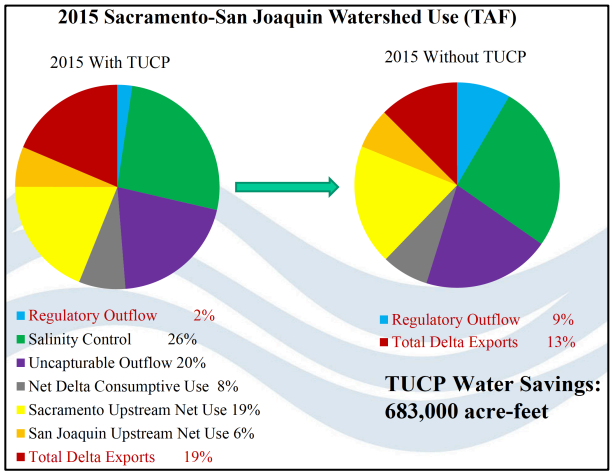


Figure 33, SWRCB, TUCP Effects 2015.

Fisheries Have Suffered Disproportionate Harm During the Present Drought

The various TUCPs and SWRCB responding orders over the last two years have addressed impacts to irrigated agriculture, which comprises approximately 2% of the state's economy but consumes upwards of 70-80% of the state's developed water supplies. However, it is the state's fisheries that have suffered the greatest harm. Agriculture has been remarkably resilient.

As described more fully in our Protest of the 24 March 2015 TUCP Order and our presentation at the 20 May 2015 SWRCB workshop, agricultural production (Figure 34) and farm employment (Figure 35), based on official statistics from the California Department of Agriculture and California Economic Development Department, actually increased in both California and the Central Valley during the first three years of the present drought.

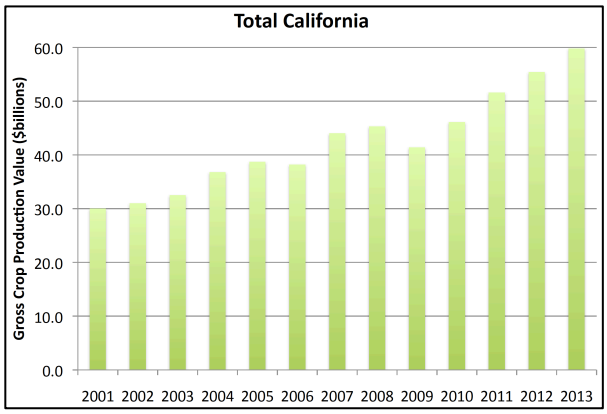


Figure 34, Ca. Agricultural Production 2001-2013.

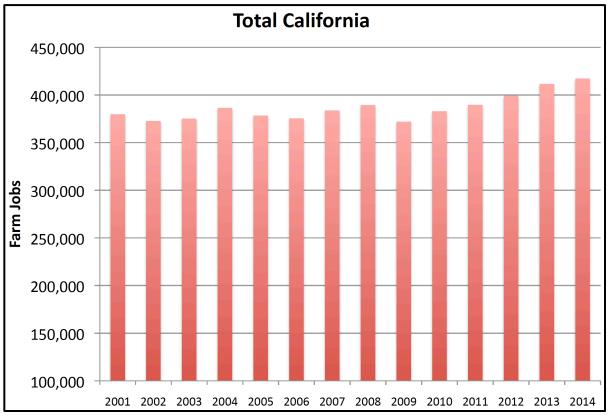


Figure 35, Ca. Farm Employment 2001-2014.

Crops that tend to produce the highest revenue and most jobs tend to require the least water. According to a U.C. Davis Center for Watershed Sciences report, vegetables, horticulture, no-tree fruits, deciduous fruits, cucurbits (melons, squash, cucumbers, watermelon, zucchini, etc.), tomatoes, vine (wine and table grapes), onions, potatoes, etc. require only 27.1% of irrigated acreage and 21.5% of the water but generate 62.7% of agricultural revenue and 81.8% of farm jobs. By contrast, irrigated pasture, alfalfa, corn, almonds, pistachios and cotton require 42.9%

of irrigated acreage and use 53.7% of the water but generate only 19.6% of revenue and 13.9% of farm jobs.

The SWRCB is a Poster-Child of a Captured Regulatory Agency

Regulatory capture occurs when a regulatory agency, formed to act in the public interest, eventually acts in ways that benefit the industries, agencies and organizations it is supposed to regulate, rather than the public. The SWRCB has shaped its decisions primarily to benefit water agencies and politically powerful special interests at the expense of the public and the public interest.

For decades, the SWRCB has passively watched the disintegration of the Bay-Delta ecosystem and its fisheries without taking affirmative action to reverse the decline. The present condition of those fisheries, tottering on the brink of extinction, and the fact that virtually every significant Central Valley waterway is listed as impaired by multiple pollutants is an indictment of a blatant failure to comply with statutory mandates.

The SWRCB has refused repeated pleas to undertake a formal balancing of Public Trust resources with competing uses of water or to respond to petitions to adjudicate the fivefold over appropriation of water in the Central Valley or to hold requested evidentiary hearings on changes to water quality standards. It has failed to regularly update its Bay-Delta Plan despite increasing evidence that the Plan is not protective of fisheries and other beneficial uses. It has chaperoned the increasing pollution of Central Valley waterways and refused to enforce violations of Bay-Delta water quality standards. It has acquiesced as DWR and USBR have recklessly operated SWP and CVP reservoirs without providing a margin-of-safety to protect the citizens and public trust resources from droughts that occur more than 40% of the time. And when inevitable drought has occurred, the SWRCB has quickly acceded to demands of Project operators to externalize the consequences of their mismanagement on to the backs of beleaguered fisheries and Delta water quality.

The current drought proceedings are a scathing example. The rapidity of the decision-making process to weaken water quality criteria is breathtaking. The process from a TUCP through agency concurrence memos to the TUCP Order takes but a few days. It is accomplished in secret, the public is always excluded and there is never an evidentiary proceeding that might raise embarrassing questions or reveal inconvenient facts. Occasionally, the SWRCB will schedule a meaningless workshop to placate an increasingly exasperated public. It cannot be claimed that an emergency exists because the scenario has replicated itself multiple times in previous droughts and over the last three years.

The evidence indicates that the SWRCB, as well as DFW, USFWS and NMFS, have become captive agencies to politically powerful interests and incapable of independent action to protect public trust assets. They could not do more damage to the environment if they were subsidiaries of the state and federal water contractors.

Chronic Relaxation of Promulgated Standards Because Water Agencies Refuse to Pursue Reasonable Measures to Address Drought Emergencies that Occur 40% of the Time Cannot Serve the Public Interest

The SWRCB's weakening of water quality standards over the last several years has brought winter-run and spring-run Chinook salmon, Delta smelt and longfin smelt to the brink of extinction. These species and frankly, all native pelagic and anadromous species in the Central Valley are public trust assets belonging to all of the people of the state and nation. The SWRCB ignored the Public Trust and failed to even attempt to balance competing beneficial uses of water in adopting the various TUCP Orders.

It cannot be in the public interest to send species that evolved and prospered over millennia into extinction simply to service politically powerful special interests. As discussed above, Central Valley agricultural production and farm employment have fared far better during the drought that the pelagic and salmonid species of the Valley. The public interest demands that these species be prevented from tumbling into the dark abyss of extinction.

The TUCP is Contrary to Law if Approved

The TUCP contravenes Public Trust Doctrine by failing to protect trust assets and failing to balance a relatively healthy Central Valley agricultural sector that represents somewhat less than 2% of the state's gross domestic product with critically depressed public trust resources hovering on the brink of extinction. Extinction cannot be balanced! It contravenes the federal Clean Water Act by arbitrarily weakening criteria without following mandated procedures and ignoring federally promulgated water quality criteria. It violates the due process of those who have been excluded from the backroom deal cutting. It contravenes the Delta Protection Act of 1959 by failing to control salinity in the Delta to the detriment of Delta agriculture and urban water supply beneficial uses and by failing to make required findings that no water is being exported that belongs to Delta users under watershed protection and area of origin statutes. Notwithstanding the letters of concurrence or consistency, it violates state and federal endangered species statutes because the record clearly demonstrates that the agencies charged with implementing those acts have chaperoned the collapse of Delta fisheries, have grievously failed to protect endangered species from impending extinction, and have essentially become captive agencies to special interests.

For all of the reasons herein, we believe the evidence demonstrates that the proposed TUCP, and the Order, to the degree that it grants the measures requested in the TUCP, violates state and federal laws, including but not limited to:

Public Trust Doctrine and California Case Law

The Public Trust Doctrine protects many values including fish and wildlife (*see Marks v. Whitney, 6 Cal 3d 251; National Audubon Society v. Superior Court 33 Cal 3d 419.)* The State of California has sovereign fee ownership of public trust easements in California Rivers and streams and of the fish and wildlife that live in them. Those rights cannot be arbitrarily and

capriciously waived by Governor Brown's suspension of regulations that require compliance with water quality standards under the guise of a self-proclaimed emergency.

The SWRCB retains its "affirmative duty" under Audubon to continually reevaluate the uses of water by the export projects in this and other droughts to come. The Governor does not have the authority to declare an emergency and destroy the Public Trust. The SWRCB cannot find that the TUCP has no "unreasonable" effect on fish and wildlife by the granting of a TUCP and a Temperature Management Plan that could eliminate salmon, smelt and other fish, which are Public Trust assets.

In November 2009, the State Legislature passed Water Code § 85086 as part of the Delta Reform Act of 2009. The Act required the SWRCB to develop new flow criteria to protect Public Trust resources of the Delta. Following extensive testimony, the SWRCB issued the 2010 Delta Flow Criteria Report, which identified flow criteria necessary to support Public Trust resources. The report, titled *Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem,* found that Delta flows are insufficient to support native Delta fishes and recommended significant increases in inflow to the Delta and outflow to the Bay.

The Delta Reform Act also directed DFW to identify quantifiable biological objectives and flow criteria for he species of concern in the Delta. Following a lengthy proceeding, DFW issued a 2010 report titled *Quantifiable Biological Objectives and Flow Criteria for Aquatic and Terrestrial Species of Concern Dependent on the Delta*.

Unfortunately, since the issuance of those reports, both the SWRCB and DFW have acted as if the reports and the Public Trust didn't exist. There has been virtually no attempt to balance the flows required to protect public trust resources with other beneficial uses as was done at Mono Lake. Despite native fisheries facing extinction, the SWRCB failed to consider or balance the Public Trust with competing beneficial uses as they adopted the TUCP Orders. DFW failed to consider the Public Trust and its Delta biological objectives and flow criteria in quickly endorsing the TUCPs and in finding them to be consistent with the California Endangered Species Act (CESA).

Article 10, Section 2 of the California Constitution

"The right to water or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall reasonably be required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion of water."

Considering the conditions of drought which are described in the "drought emergency" declared by Governor Brown - the curtailments of water rights, the waiver of D-1641 standards to protect fish and wildlife and water quality in the Delta watershed - it is time for the SWRCB to declare flood irrigation by agriculture during the drought emergency a waste and unreasonable use until the emergency is over.

If the SWRCB can require urban conservation, it can also require conservation in agriculture. Flood irrigation in the Sacramento Valley in particular is unreasonable when the endangered salmon are facing extirpation. Increased evaporation from spreading water on the ground alone likely uses more stored water than that needed to save the fishery.

Alfalfa and irrigated pasture alone consumes 8.6 MAF of water in California and provides low net revenue and few jobs. The SWRCB can and must reduce the quantity of water allocated to irrigated pasture and low-value crops like alfalfa that use prodigious amounts of water during the drought emergency. To continue this use is unreasonable and a waste of water and must be stopped or reduced until the drought emergency is declared over.

The continued killing of threatened and endangered species by obsolete and non-protective export pumping facilities simply because the state and federal water contractors refuse to pay for new state-of-the-art fish screens is an unreasonable method of diversion. This is especially true when water diverted through those facilities deprives listed species of water necessary for survival. The SWRCB can and must curtail south Delta exports during the drought emergency until D-1641 water quality standards are met.

The California Endangered Species Act

Native Salmon, smelt and other fish are listed under the California Endangered Species Act (CESA). The proposed TUCP does not provide these fish the protection provided by the law. Professor Moyle has been widely quoted that present conditions are likely to result in the extinction of the Delta smelt with as many as five more protected fish in line to follow. The SWRCB cannot waive Bay-Delta water quality standards and approve the TUCP because there is no rational basis to believe that there will not be an "unreasonable effect" on fish and wildlife from the approval.

Section 5937 of the California Fish and Game Code

The requested TUCP and USBR's Temperature Management Plan on the Sacramento River will not keep fish below Shasta, Oroville, Folsom, New Melones, Friant, and Trinity Dams "in good condition" as required by Section 5937 of the California Fish and Game Code. Each of these rivers contain fish and other creatures that need water to survive this drought and present forecasts of water and temperature conditions have indicated how close a question survival has become because of USBR's failure to preserve necessary water in reservoirs under their control.

Section 7 of the Federal Endangered Species Act

The USFWS' Delta Native Fish Recovery Plan goals include: to establish self-sustaining populations of species of concern that will persist indefinitely … The basic strategy for recovery is to manage the estuary in such a way that it is better habitat for aquatic life in general and for fish species of concern in particular. The goal of the NMPS management plans for the listed salmonids on the Sacramento River is their survival and the protection of their habitat for their recovery. The TUCP is not likely to provide protection and will cause increased jeopardy for the

listed species. Obviously, no State Governor has the authority to waive federal species protection laws.

The Federal Clean Water Act

The federal Clean Water Act (CWA) requires the adoption of water quality standards consisting of the designated uses of navigable waters and the water quality criteria for such waters based upon such uses. Water quality standards must protect and restore the designated fish, wildlife and recreational uses of the Bay-Delta. Implementation plans that do not comply with the designated use of the waters do not comply with applicable water quality standards.

Despite claims to the contrary, the sequential actions of the SWRCB over the last two years in weakening the implementation of promulgated water quality standards contained in the Bay-Delta Plan amount to a de facto change in standards. The SWRCB has changed standards without public hearing and in violation of mandated requirements for establishing water quality standards and protecting designated uses.

The SWRCB has failed to comply with state and federal antidegradation requirements in lowering water quality. At a minimum, antidegradation requirements require that water quality standards must protect "fishable" beneficial uses. There is no analysis in the TUCP or responding Orders analyzing impacts to beneficial uses and the trade offs or costs between a temporary loss of water to state and federal water contractors and the decline of fisheries and likely extinction of species. Nor is there any analysis of the relative benefits of weakening water quality standards in order to provide water to state and federal water contractors at the cost of depriving Delta farmers of water and water quality.

There is disagreement between the SWRCB and U.S. Environmental Protection Agency (USEPA) over whether the CWA regulates flow. However, flow and constituent concentration are flip sides of the same coin. Reductions in flow increase the concentration of pollutants. The Suisun Bay water quality standards in the Bay-Delta Plan are narrative and require water quality conditions sufficient to support a natural gradient in species composition and wildlife habitat characteristic of a brackish marsh. While narrative in nature, it is pollutant concentration that determines whether it is met. The Eastern and Western Suisun Marsh salinity standards are expressed as concentration. The Delta outflow objectives are expressed both as flow and concentration but the impacts on pelagic species are determined by the concentration. Agricultural water quality standards in the Western, Interior and Southern Delta and Vernalis are established as concentration.

Federal regulations require states to revisit and revise water quality control plans every three years. The present Bay-Delta water quality standards were adopted twenty years ago in 1995, implemented five years later and briefly revisited in 2006 without change. A new proceeding is underway but has experienced long delays and it is unknown when it will be completed. The SWRCB has failed to comply with federal regulation in updating the Bay-Delta Plan.

The TUCP and resulting Orders violate the CWA by failing to comply with mandated water quality standards. The Governor cannot legally order state agencies to violate or refuse to

comply water quality standards. He clearly cannot exempt the USBR from complying with water quality standards.

Federal Water Quality Standards Promulgated for California at 40 CFR 131.37

Pursuant to a federal court order (*Golden Gate Audubon Society, et al. v. Browner, et al. [E.D. Calif. CIV-S-93 646 LKK PAN]*), USEPA was required to promulgate final federal water quality standards for the Bay-Delta. Those water quality standards are current, as of this writing, and can be found at 40 CFR §131.37. Those standards are significantly more protective than the subsequent state Bay-Delta water quality standards issued in late 1995. The SWRCB Orders weakening Bay-Delta standards are inconsistent with the federally promulgated water quality standards.

The CVPIA Doubling Standard for Salmon and Steelhead

One goal of the Central Valley Project Improvement Act (CVPIA) is to ensure that … natural production of anadromous fish in Central Valley rivers and streams will be sustainable, on a long term basis, at levels not less than twice the average levels attained during the period of 1967-1991 (Section 3406(b)(1)). The SWRCB's Bay-Delta Plan has a narrative salmon protection objective with a similar doubling goal that the Governor has purported to waive under emergency provisions. The USEPA's federally promulgated water quality standards, at 40 CFR 131.37, also incorporate the doubling goal.

Section 3406(b) of the CVPIA requires USBR to operate the Central Valley Project to meet all obligations under state and federal law. This includes compliance with water quality standards adopted pursuant to the federal CWA.

A state governor cannot waive federal law. The USBR must obey the CVPIA and refrain from requesting actions that lead to a violation of the doubling standard for salmon and striped bass contained in the CVPIA.

The California Water Code and Governor's Declaration of Drought Emergency

The Delta Protection Act of 1959 prohibits project exports from the Delta of water to which Delta users are "entitled" and water, which is needed for salinity control and, as adequate supply for Delta users. (Water Code § 12202, 12203, 12204)

The SWRCB, since D-1485 at page 9, has recognized that "The Delta Protection Act accords first priority to satisfaction of vested rights and public interest needs for water in the Delta and relegates to lesser priority all exports of water from the Delta to other areas for any purpose." The requested TUCP by the projects reverses this priority and eliminates the statutory protections for Delta agricultural water quality and estuarine protection in favor of water transfers from upstream of the Delta to secondary priorities outside of Bay-Delta watershed. There is nothing in the Governor's drought emergency declaration that authorizes the SWRCB to make such a drastic change in California water law by ignoring the Delta Protection Act, the Watershed of Origin Act and the Water Code sections effectuating them.

Under what conditions may this Objection be disregarded and dismissed?

First, the requested TUCP Order should be denied. In its place, the SWRCB should undertake the following measures to protect fish and wildlife for the remainder of 2015:

1. Given the imminent threats of extinction, the SWRCB should move to reinstate D-1641 critical year criteria. If D-1641 outflow criteria to protect fish and wildlife cannot be met, exports should be prohibited. Water needed to supply export health & safety needs have already been exported are presently in storage in San Luis Reservoir.
2. Proposed Keswick releases should be in the range of 7,000-7,500 cfs during the June-July winter-run Chinook salmon spawning period and reduced to no more than 6,000-6,500 cfs in September-October to ensure that redds will not be dewatered and sufficient cold-water reserves remain in Shasta Reservoir to protect spawning, incubation and emergence of salmon. It is unreasonable to supply Sacramento Settlement Contractors with 1.2 MAF of water within essentially a critical four-month window during a drought at the expense of the cold-water pool in Shasta.
3. The SWRCB should prohibit South of Delta water transfers and ensure that "surplus" transfer water be used to meet D-1641 criteria.
4. The Vernalis salinity standard should be maintained at 0.7 EC through the growing season. If the standard cannot be met, discharges of high salinity waters from the west side of the San Joaquin Valley should be prohibited.
5. Vernalis flow should be maintained to at least 200 cfs. Water needed to institute these flows should be apportioned among tributary users. End of October New Melones storage should be maintained at 200 TAF or greater.
6. To minimize potential impacts from another dry year, the SWRCB should begin to require DFW and USFWS to establish a program to ensure maximum production and survival of young salmon to the ocean through trucking or, preferably, barging hatchery-produced salmon and steelhead to the Bay. The USBR and DWR should be required to fund any added costs associated with these enhanced hatchery practices.
7. The SWRCB should require management of delta hydrology through EC and gauged outflow, not NDOI. EC recorders and USGS gauges located throughout the river, Delta, and Bay provide a better management tool than the estimated NDOI.
8. The SWRCB should require the RTDOMT to operate the Delta Cross Channel gates in real time to minimize export losses of smelt and San Joaquin salmonids during periods of high Delta inflows, to minimize negative OMR and improve positive QWEST flows. When salmon are present, gates should only be opened during daylight hours to minimize redirection into the central Delta.
9. The SWRCB should require DWR and the Bureau to adjust exports to the natural monthly tidal cycle to minimize negative effects on Delta hydrology and fish habitat and entrainment risk conditions.
10. The SWRCB must hold an evidentiary hearing on the requested TUCP and Order to consider necessary measures to protect gravely threatened fish species during current drought and depleted storage conditions.

The SWRCB should also undertake the following measures to protect fish and wildlife for the remainder of 2015 and for 2016 and prior to any future drought sequence:

1. Expedite development of the Water Quality Control Plan for the Bay-Delta.
2. Undertake a comprehensive balancing of Public Trust Resources identified in the SWRCB's 2010 Report titled Development of *Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem* with other identified beneficial uses of Central Valley waters.
3. Initiate an adjudication of over-appropriated water rights in the Central Valley.

The SWRCB should also use its authority during the remainder of 2015 and 2016 to re-regulate the state and federal export pumping facility to create better Bay-Delta ecosystem conditions by taking the following steps:

1. Determine Whether There Will Be Fish Passage at Central Valley Watershed Rim Dams.

There was very little spawning and rearing habitat for salmonids that existed below the locations of the lowest elevation water user dams on the edge of the Central Valley. Most estimates by government studies indicate that as much as 95% of the natural spawning and rearing habitat for the listed winter and spring run salmon and the Central Valley steelhead has been blocked by dams. There is presently no system of access for these fish to return to their native streams and to the upper elevation deep cold water that would allow the fish to survive on their own as they did before the dams. If access to this important habitat remains blocked, it will be necessary for the SWRCB to dedicate ever-increasing amounts of stored, cold water to fish and wildlife needs.

2. Dedicate Reservoir Storage for Endangered Fish Habitat.

Reservoirs are the only source for the cold water that salmon and steelhead depend on for habitat to survive below dams that restrict access of fish to historical habitat above these dams. If fish are to have any chance to survive expected future temperature increases resulting from climate change, reservoir storage must be dedicated to fish habitat and access for fish must be restored to higher elevation habitat with colder water. A program must be designed and executed to protect fish during this drought. The present state of cold-water reservoir reserve is insufficient and may result in salmonid extinction unless more of the winter's water run-off is dedicated to fish and wildlife in the Central Valley Rivers leading into the Bay-Delta estuary.

3. Modify Reservoir Flow Releases to Include a Margin of Safety.

Water flow is not only water supply for agriculture and urban California. Water flow is habitat for fish and other aquatic species. Because water users have eliminated much of the natural habitat for salmonids by building dams on Central Valley streams and rivers, salmon and steelhead are trapped in very small areas for spawning and rearing. This year's drought and the high volume water export since 2000 have nearly exhausted reservoir water available to provide habitat for fish and other aquatic species. The SWRCB should use its authorities under the Clean Water Act and the Water Code to prevent additional depletion of reservoir storage that risks extinction for salmon and steelhead.

4. Modify Reservoir Flow Releases to Ensure Protection of Coldwater Pools.

To the extent possible, water storage facilities should be managed to provide cold water for fish during the summer and early fall months. Since the salmon and steelhead are trapped below project dams, they are exposed to unnaturally high water temperatures that can have both lethal and chronic effects. For these fish, cold water is habitat. Without it, they die. The SWRCB must modify rim dam water rights permits to preserve cold water for water year 2016 and years following.

5. Establish Additional Cold-Water Reservoir Storage for Bay-Delta Ecosystem Purposes.

There are several reasons to expect that climate change will have negative long-term influences on pelagic habitat suitability for the POD fishes. First, there has been a trend toward more Sierra Nevada precipitation falling as rain earlier in the year. This increases the likelihood of winter floods and may have other effects on the hydrographs of Central Valley Rivers and Delta salinity. Altered hydrographs interfere with pelagic fish reproduction, which is usually tied to historical runoff patterns. Second, sea level is rising. Sea level rise will increase salinity intrusion unless sufficient freshwater resources are available to repel the seawater. This will shift fish distributions upstream and possibly further reduce habitat area for some species. Third, climate change models project warmer temperatures in central California. As stated above, water temperatures do not currently have a strong influence on POD fish distributions. However, summer water temperatures throughout the upper estuary are fairly high for delta smelt. Mean July water temperatures in the upper estuary are typically 21-24°C and the lethal temperature limit for delta smelt is about 25°C. Thus, if climate change resulted in summer temperatures in the upper estuary exceeding 25°C, delta smelt would have little chance of maintaining viable populations.

Water storage in Shasta and Oroville are approaching historic lows and will be at or below 1977 levels by fall 2015. The principal cause of this shortfall is the cannibalization of north-of-Delta storage over the last several years to supply south-of-Delta storage and use. Unless the approaching water year proves to be extremely wet, next years instream flows on the Feather, Sacramento and Yuba rivers are likely to approach record lows. These low flows will likely cause and contribute to reductions in spawning and rearing habitat, lethal temperatures and increases in pollutant concentration. Given the dramatic crash of pelagic species and the recent acceleration in the long-term decline in salmonid escapement, these expected low flows could trigger a catastrophic disaster to fisheries already hovering on the edge of extinction.

6. Improve Water Quality in Rivers Leading Into the Bay-Delta.

Concern over contaminants in the Delta is not new. There are long-standing concerns related to mercury and selenium in the watershed, Delta, and Bay. Phytoplankton growth rate may occasionally be inhibited by high concentrations of herbicides. New evidence indicates that phytoplankton growth rate may at times be inhibited by ammonium concentrations in and upstream of Suisun Bay. Toxicity to invertebrates has been noted in water and sediments from the Delta and associated watersheds. Undiluted drainwater from agricultural drains in the San Joaquin River watershed can be acutely toxic (quickly lethal) to fish and have chronic effects on

growth. Evidence for mortality of young striped bass due to discharge of agricultural drainage water containing rice herbicides into the Sacramento River led to new regulations for discharge of these waters. Bioassays using caged fish have revealed DNA strand breakage associated with runoff events in the watershed and Delta. Peak densities of larval and juvenile delta smelt sometimes coincided in time and space with elevated concentrations of dissolved pesticides in the spring. These periods of co-occurrence lasted for up to 2-3 weeks, but concentrations of individual pesticides were low and much less than would be expected to cause acute mortality. However, the effects of exposure to the complex mixtures of pesticides actually present are unknown.

7. Evaluate Biological Effects of Salt Input Into the Bay-Delta.

High levels of salt, as measured at Vernalis, has major potential to damage Bay-Delta agriculture and to cost water users substantial treatment costs at the place of use. The State Board assigned DWR and USBR the responsibility for meeting salinity objectives in the 1979 Delta Plan, D-1485, and the 1995 Delta Plan and D-1641. Salinity standards continue to be routinely violated. The San Joaquin River Salinity and Boron TMDL assigns responsibility for controlling salt delivered to the San Joaquin Valley from the Delta to USBR. USBR's salt load reductions are to be addressed through a joint Management Agency Agreement with the Central Valley Regional Water Quality Control Board (CVRWQCB). Unfortunately, the Bureau is claiming sovereign immunity and, while promising some level of cooperation, refuses to accept specific enforceable load limits that will actually lead to reductions in salt loading to the San Joaquin River.

8. Establish Origin of Salt Input Into the Bay-Delta.

The SJR Salt TMDL is a poster child for the failures of the TMDL program to secure improvements in water quality. Salinity problems on the river have been recognized for over a century. The long-delayed salt TMDL is the first 100-foot TMDL in the nation's history, only protecting a short stretch of river below the San Joaquin's confluence with the Stanislaus River. Water quality violations continue to occur upstream of the confluence and downstream below Vernalis: this despite the fact that EPA regulations and the CVRWQCB Basin Plan require that standards must apply throughout a waterbody, not simply at a single compliance point. While TMDL implementation plans must ensure attainment of water quality standards, the salt TMDL contemplates a 19% exceedance of standards in critical years and a 7% exceedance in dry years. The TMDL fails to reserve any assimilative capacity, thus depriving downstream farmers of the ability to irrigate and discharge return flows. Although the State Board has expressly directed the CVRWQCB to control salt loading from municipal and industrial dischargers, it is routinely allowing massive increases in salt loading in recently adopted NPDES permits. Indeed, the CVRWQCB, with SWRCB approval, recently issued a waiver exempting Delta municipalities from having to comply with salinity requirements contained in their respective NPDES permits. Both the 1995 Water Quality Control Plan for the Delta and D-1641 directed the CVRWQCB to move the salt compliance point upstream of Vernalis. Twenty years later, proposed upstream salinity objectives have not been released and the CVRWQCB is pursuing a CV Salts Plan that may provide results by mid-century.

9 Establish New Interim X2 Bay-Delta Fall Outflow Requirements for All Year Conditions.

Pelagic habitat quality in the San Francisco Estuary can be characterized by changes in X2 (Distance from the Golden Gate of the 2 psu isohaline). The abundance of numerous species increases in years when flows into the estuary are high and X2 is pushed seaward, implying that the quantity or suitability of estuarine habitat increases when outflows are high. The importance of salinity in this study was not surprising, given the relationships of population abundance indices with X2 for many species. Fall salinity has been relatively high during the POD years followed by drought years, with X2 positioned further upstream, even when there are moderate to high outflow conditions during the previous winter and spring. Recent increases in fall salinity could be due to a variety of anthropogenic factors. Initial results from 2007 POD studies have identified increased duration in the closure of the Delta Cross Channel, operations of salinity gates in Suisun Marsh, and changes in export/inflow ratios (i.e. Delta exports/reservoir releases) as contributing factors. The last two years of reduction of even the paltry critical year outflow requirements of D-1641 are clearly likely to extirpate the POD species.

Fall represents the time period when the delta smelt year class matures to adulthood. Hence, fall stressors have a direct effect on the delta smelt spawning population. The evidence to date indicates that habitat is a significant issue for delta smelt in fall. Delta smelt are strongly associated with low salinities and high turbidities, which can be used to index the "environmental quality" of habitat for the species. Numerous reports demonstrate that fall environmental quality has shown a long-term decline, which has resulted in the present drought causing numbers of pelagic species to decline far beyond the earlier POD "crash". There is statistical evidence that these changes have population-level effects. A multiple linear regression of fall environmental quality in combination with adult abundance provides statistically significant predictions of juvenile production the following year. Hence, both habitat and stock-recruit factors are important issues during the fall of 2015.

10. Determine the Biological Effects of Project Pumping.

It is important to keep in mind that river flows influence estuarine salinity gradients and water residence times. The residence time of water affects both habitat suitability for benthos and the transport of pelagic plankton. High tributary flow leads to lower residence time of water in the Delta, which generally results in lower plankton biomass, but also lower cumulative entrainment effects in the Delta. In contrast, higher residence times (a month or more), which result from low tributary flows, may result in higher plankton biomass. This can increase food availability for planktivorous fishes; however, much of this production may be lost to water diversions under low flow conditions. Under extreme low flow conditions, long water residence times may also promote high biological oxygen demand when abundant phytoplankton die and decompose. Recent particle tracking modeling results for the Delta show that residence times in the southern Delta are highly variable depending on Delta inflow, exports, and particle release location. Very high inflow leads to short residence time. The longest residence times occur in the San Joaquin River near Stockton under conditions of low inflow and low export flow.

Statistical analyses of the long-term Delta smelt trends confirm that there has been a rapid decline of Delta smelt since 2000. We suggest that changes in water project operations and adult abundance are contributing causes of this recent decline. Increased water project exports during winter resulted in higher losses of adult smelt, particularly early spawning fish (and their offspring) that may be proportionally more important to the population. Finally, it is likely that the population is now at such low levels that recovery is unlikely in a single year but will require several years of successful reproduction and recruitment.

11. Establish Effective Fish Screens at Project Pumping Facilities in the Bay-Delta.

Because large volumes of water are drawn from the estuary, water exports and inadvertent fish entrainment at the SWP and CVP export facilities are among the best-studied top-down effects in the San Francisco Estuary. The export facilities are known to entrain most species of fish in the upper Estuary and are of particular concern in dry years, when the distributions of young striped bass, delta smelt, and longfin smelt shift closer to the diversions. As an indication of the magnitude of the effects, approximately 110 million fish were salvaged at the SWP screens and returned to the Delta over a 15-year period. However, this number greatly underestimates the actual number of fish entrained. It does not include losses at the CVP. Even for the SWP alone, it does not account for mortality of fish in Clifton Court Forebay and the waterways leading to the diversion facilities, larvae < 20 mm FL are not collected by fish screens, and losses of fish > 20 mm FL are inefficiently removed by the louver system.

Larval entrainment is unknown because larvae are not sampled effectively at the fish screening facilities. However, a number of studies suggest that larval delta smelt entrainment losses could exceed 50% of the population under low flow and high export. Evidence that export diversions played a role in the POD is the substantial increases in winter CVP and SWP salvage that occurred contemporaneously with recent declines in each of the four primary fishes. Increased winter entrainment of delta smelt, longfin smelt and threadfin shad represents a loss of pre-spawning adults and all their potential progeny. Similar increases in the salvage of littoral species including centrarchids and inland silverside were observed during the same period.

12. Establish Inflow-Outflow Weekly Ratio for All Weeks of The Year.

Habitat for pelagic fishes is open water, largely away from shorelines and vegetated inshore areas except perhaps during spawning. This includes large embayments such as Suisun Bay and the deeper areas of many of the larger channels in the Delta. More specifically, pelagic fish habitat is water with suitable values for a variety of physical-chemical properties, including salinity, turbidity, and temperature, suitably low levels of contaminants, and suitably high levels of prey production to support growth. Thus, pelagic fish habitat suitability in the estuary can be strongly influenced by variation in freshwater flow.

A true copy of this objection has been served upon the petitioners by e-mail (see below).

Date: 17 June 2015

Bill Jennings, Executive Director

California Sportfishing Protection Alliance

Chris Shutes, Water Rights Advocate
California Sportfishing Protection Alliance

Barbara Vlamis, Executive Director
AquAlliance

Carolee Krieger, Executive Director
California Water Impact Network

Michael Jackson
Counsel to California Sportfishing Protection Alliance,
AquAlliance, and
California Water Impact Network

/s/ Michael Jackson

Pursuant to requirements that all protests must be served on the petitioner, we have filed this protest, objection, petition for reconsideration and petition for hearing via e-mail to: Rich.Satkowski@waterboards.ca.gov, Chris.Carr@waterboards.ca.gov; Department of Water Resources, James.Mizell@water.ca.gov; Regional Solicitor's Office, Amy.Aufdemberge@sol.doi.gov; U.S. Bureau of Reclamation, pfujitani@usbr.gov.