

Agenda Item 2

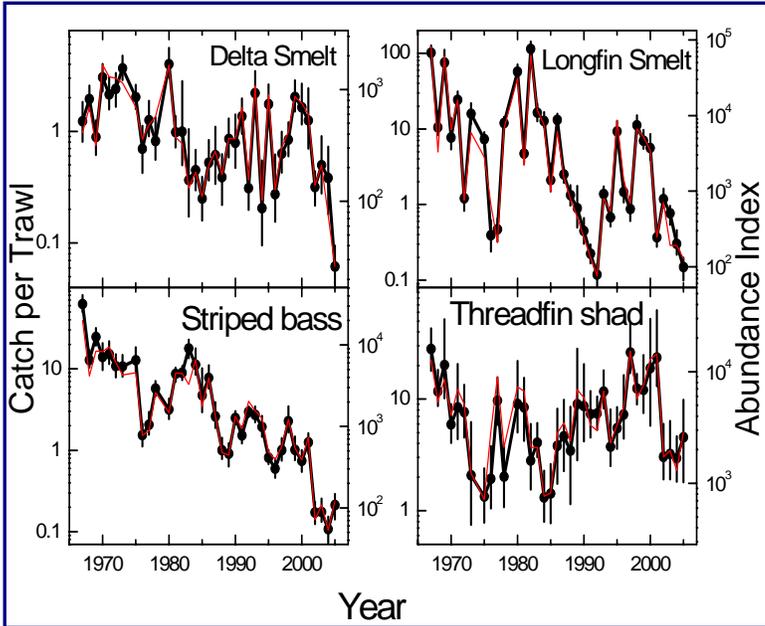
**Task Force Discussion on Water Uses, Water Quality, Conveyance,
Floods and Levees**

Supplemental Handout Materials

**Delta Vision Blue Ribbon Task Force
Friday, July 20, 2007**

Facts Associated with the June 2007 CVP/SWP Delta Pumping Curtailments

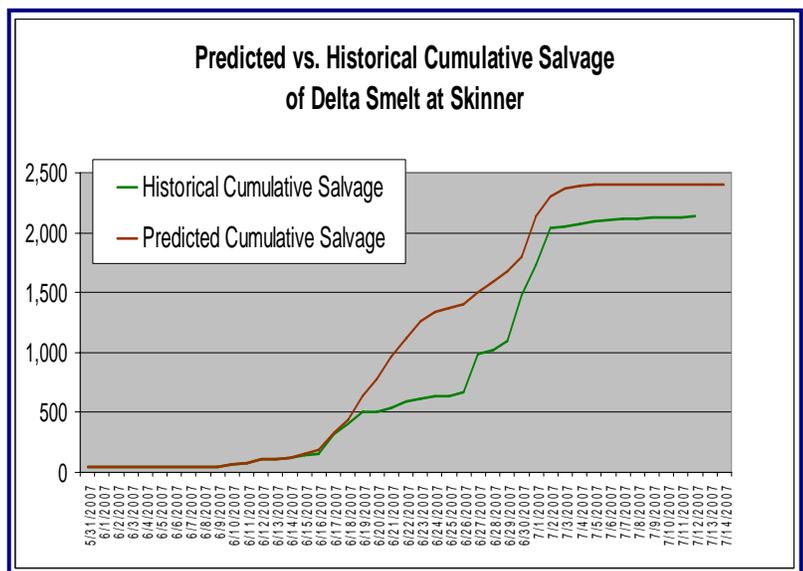
1. The Delta Smelt and other pelagic fish have shown an unexplained drop in abundance since about 2001. In 2007 adult abundance levels were a little better than 2006.

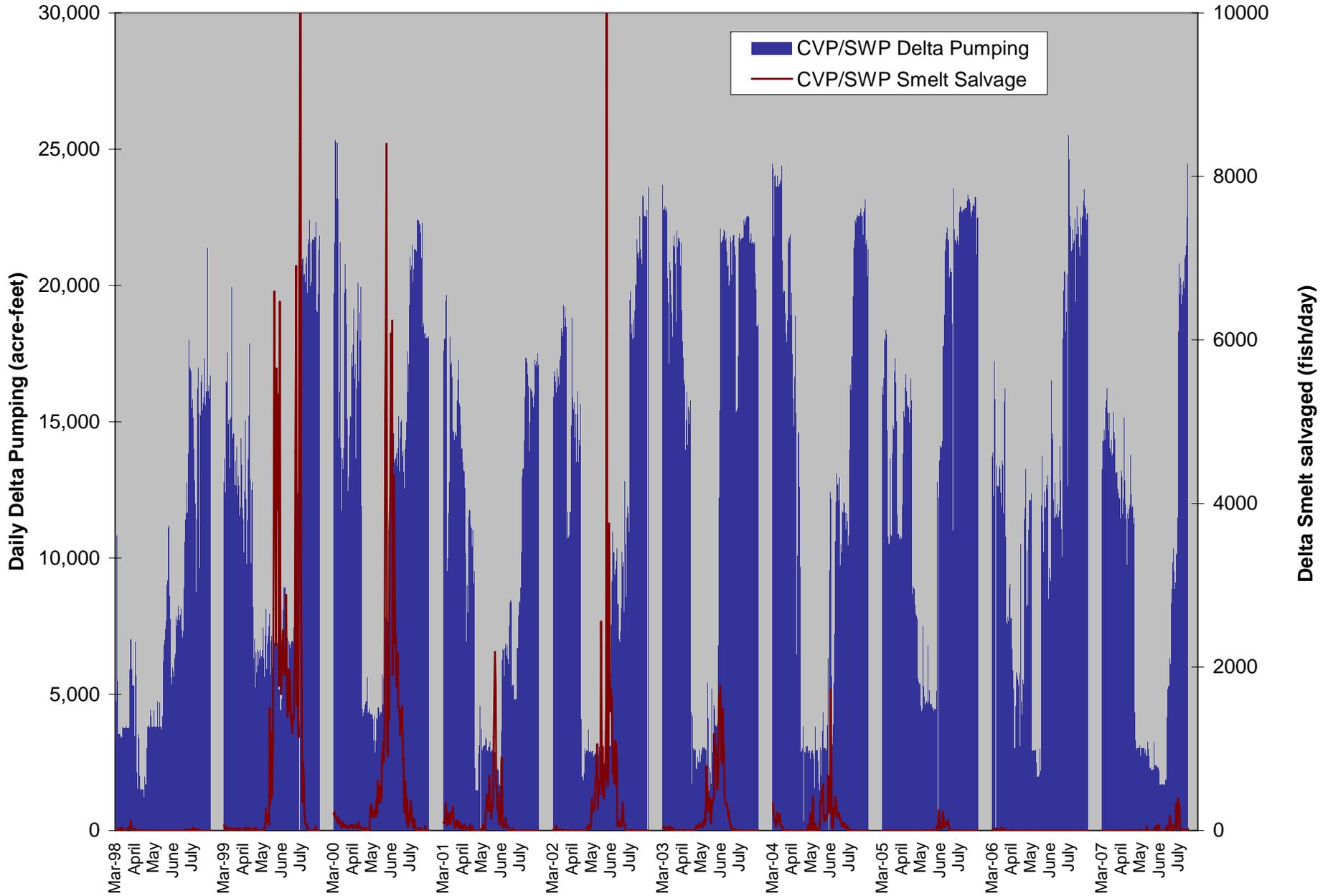


2. Water project operation actions were taken in January and February this year to help entice the Delta Smelt not to move into the interior delta where they would be more susceptible to the effects of water project operations. The Smelt conformed and stayed concentrated in the Sacramento part of the Delta System.
3. The 20 mm surveys of juvenile smelt in April and May were about 1/10 of those of last year and the lowest recorded to date. This drop in abundance occurred at the same time POD scientists recorded 4 toxic events in the same part of the Delta where delta smelt spawned this year during February through Mid-April. This drop in 20 mm smelt was a big concern to the fishery agencies.
4. The SWP had not salvaged any Delta Smelt from April 2006 through mid-May

2007. This was very unusual. In mid-May, the SWP began to salvage Delta Smelt.

5. As a result of trawl data and other information, the Delta Smelt Working Group (DSWG) recommended that the Water Operations Management Team (WOMT) alter the flows of Old and Middle Sacramento River to protect the smelt.
6. On May 31, 2007 DWR ceased pumping and Reclamation reduced pumping to minimum operating output of 850 cfs.
7. SWP pumping resumed on June 10 at a minimal level of 90 cfs and slowly ramped up to 5,000 cfs by July 1.
8. No smelt were taken between June 1 and June 9 by SWP or CVP.
9. CVP pumping increased to 2,000 cfs on June 13, and ramped up to over 4,000 cfs by June 22.
10. Since June 10, the SWP has salvaged over 2140 smelt
11. Since June 13, the CVP has salvaged 72 smelt.
12. Total Delta Smelt salvaged this year to date is ~2350 at SWP and ~348 at CVP.
13. Possibly, the Smelt salvaged at the SWP facilities since June 10 were already in Clifton Court Forebay and not from the Delta channels (*see Predictive v Historic Salvage graph*).





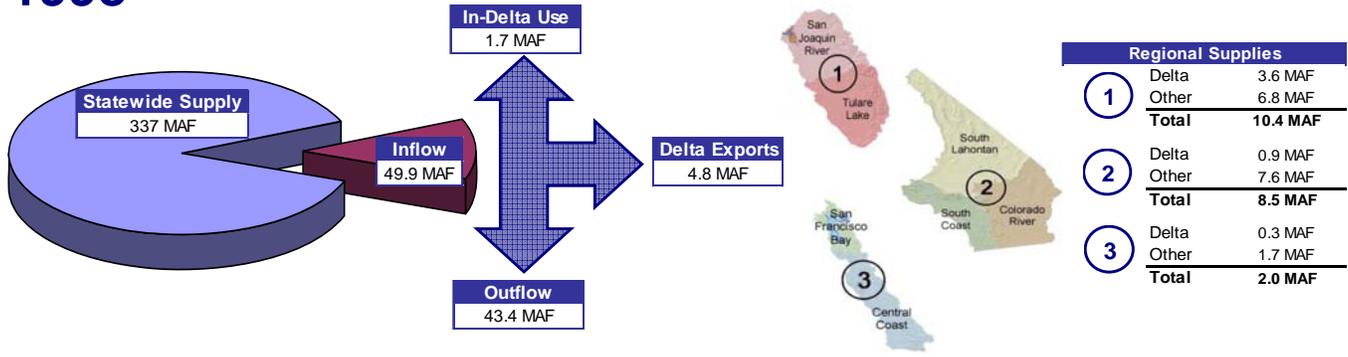
The following are examples of real implications that occurred between June 1 and June 10:

- ◆ During the pumping curtailments, Zone 7's two treatment plants connected to the SWP were reduced to 15 mgd respectively from a capacity of 36 mgd and 18 mgd. Only 15 mgd of SWP water was available for treatment. The remaining 15 mgd was pulled from Zone 7's 10 TAF storage supply held in Lake Del Valle. To make up the remaining deficit for its users, Zone 7 pumped groundwater. Zone 7 asked for a 20% voluntary water cutback and preliminary indications are that the voluntary cutback met the demand reduction goals.
- ◆ Agricultural CVP contractors that had the capability to use groundwater were asked to reduce CVP diversions so as to prevent San Luis Reservoir from exceeding its maximum drawdown of 2 feet per day (this drawdown rate prevents Sisk Dam from sloughing).
- ◆ SCVWD took measures to access alternative supplies that were part of their system. These measures included using stored supplies in Andersen Reservoir as well as turning to groundwater pumping to meet supply needs.
- ◆ End-of-June storage in San Luis Reservoir was more than 200 TAF less than projected during VAMP period, raising concerns by SCVWD of "low point" issues.
- ◆ Temporary barrier operations were suspended.
- ◆ Windows for cross-Delta water transfers have been removed/reduced to accommodate refilling of "hole" in San Luis Reservoir by SWP/CVP pumping. The lack of "excess" capacity constrains opportunities to exercise options for cross-Delta drought condition water supplies.
- ◆ Westlands Water District reported prices for an acre-foot of agricultural water went from \$100 to \$500 overnight, with price volatility on the spot market expected until this regulatory crisis is resolved (source: CFBF Ag Alert, June 6, 2007)
- ◆ Flows on the Sacramento measured at Freeport did not vary from conditions before and after the curtailments

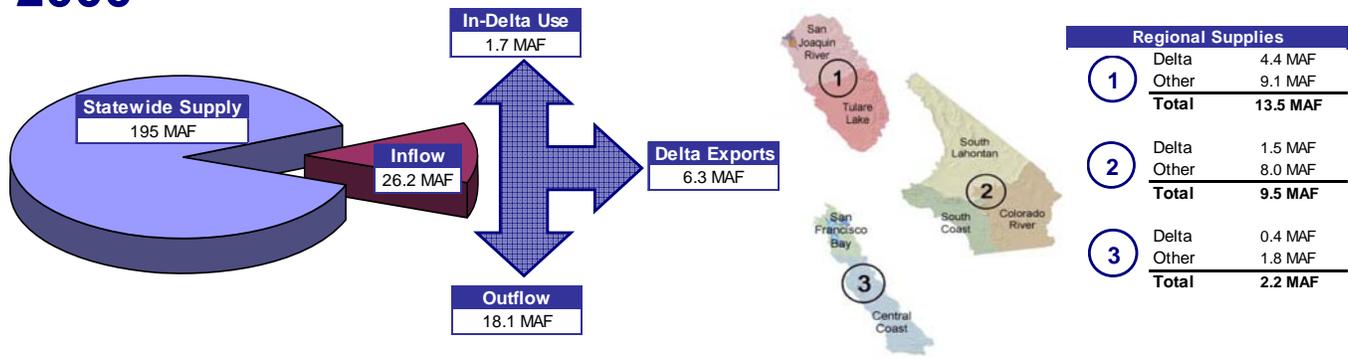
After Affects

- ◆ Ruling by Judge Wanger re: request for a Temp Restraining Order (July 3)
- ◆ FWS Delta Smelt Action Matrix for Water Year 2008
- ◆ Export area band-aid planning to manage for repeated curtailments

1998



2000



2001

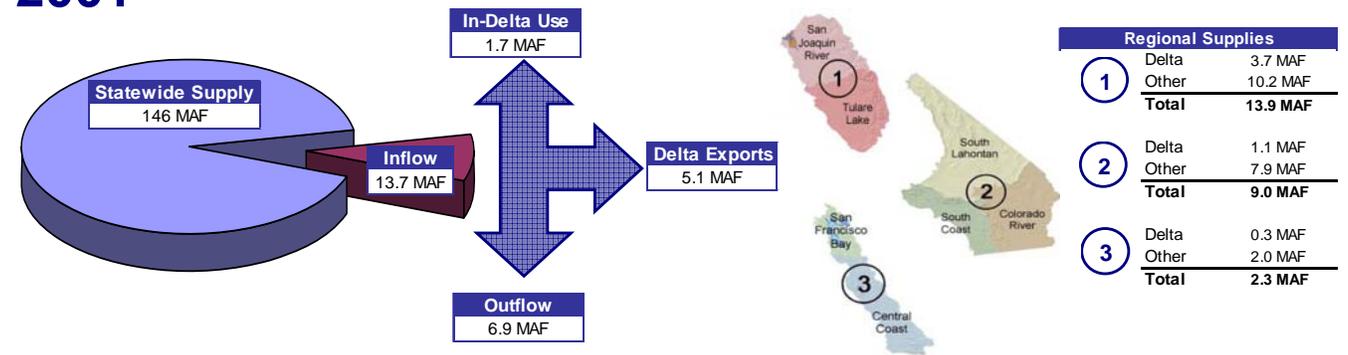


Figure 1 - Annual Stream Diversions from Central Valley Floor
(not including diversion into the Hetch-Hetchy, Mokelumne, Madera or Friant systems)

Source: derived with data from DWR's C2VSIM Model

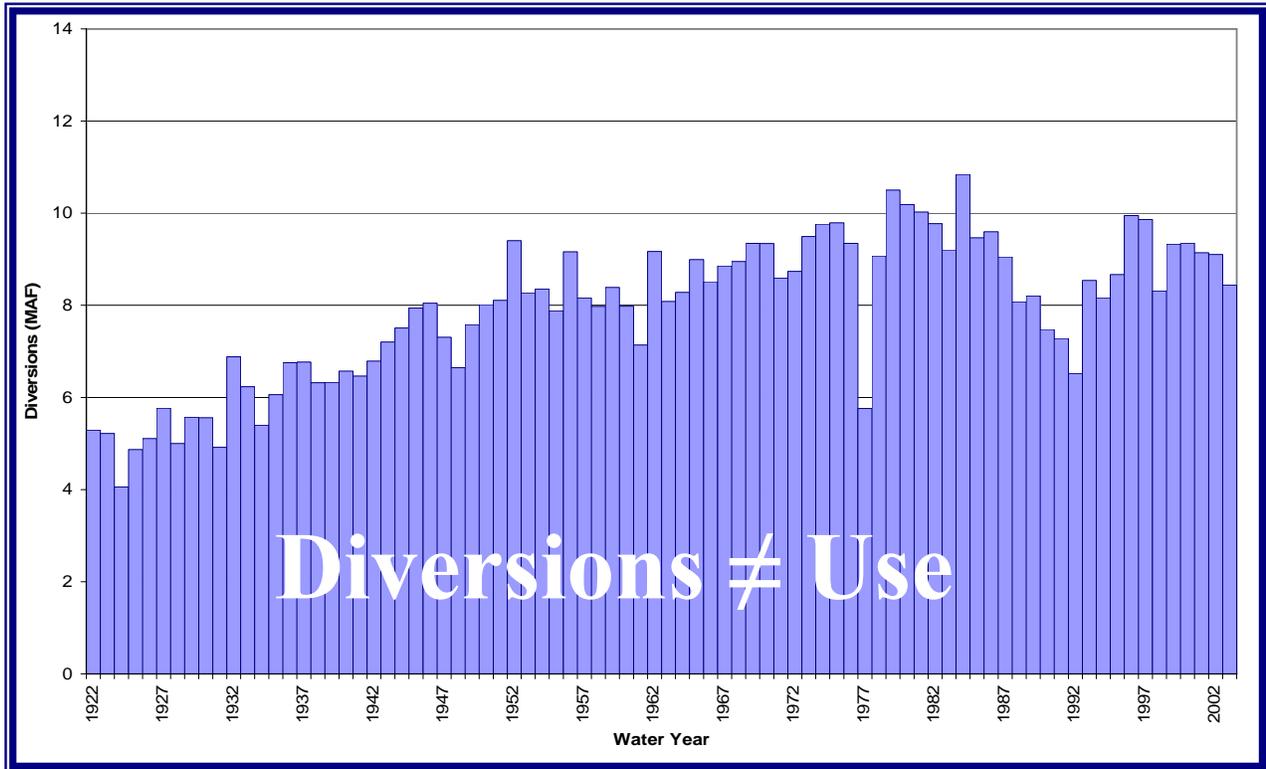
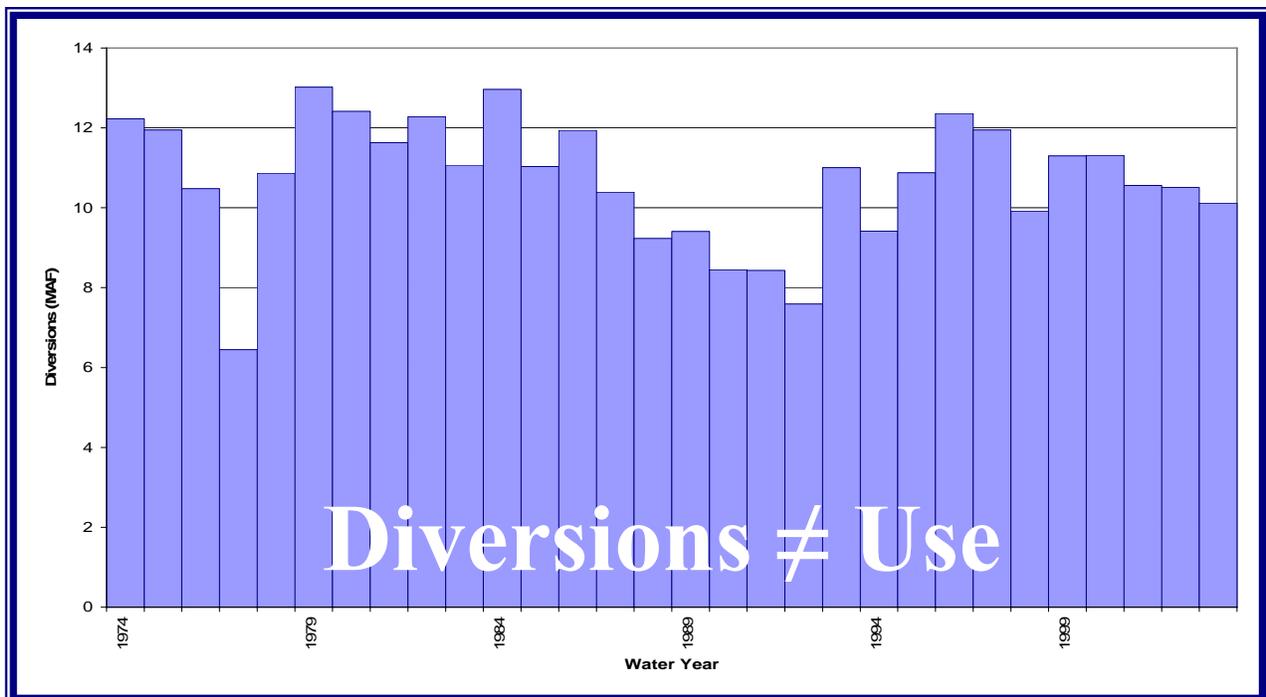
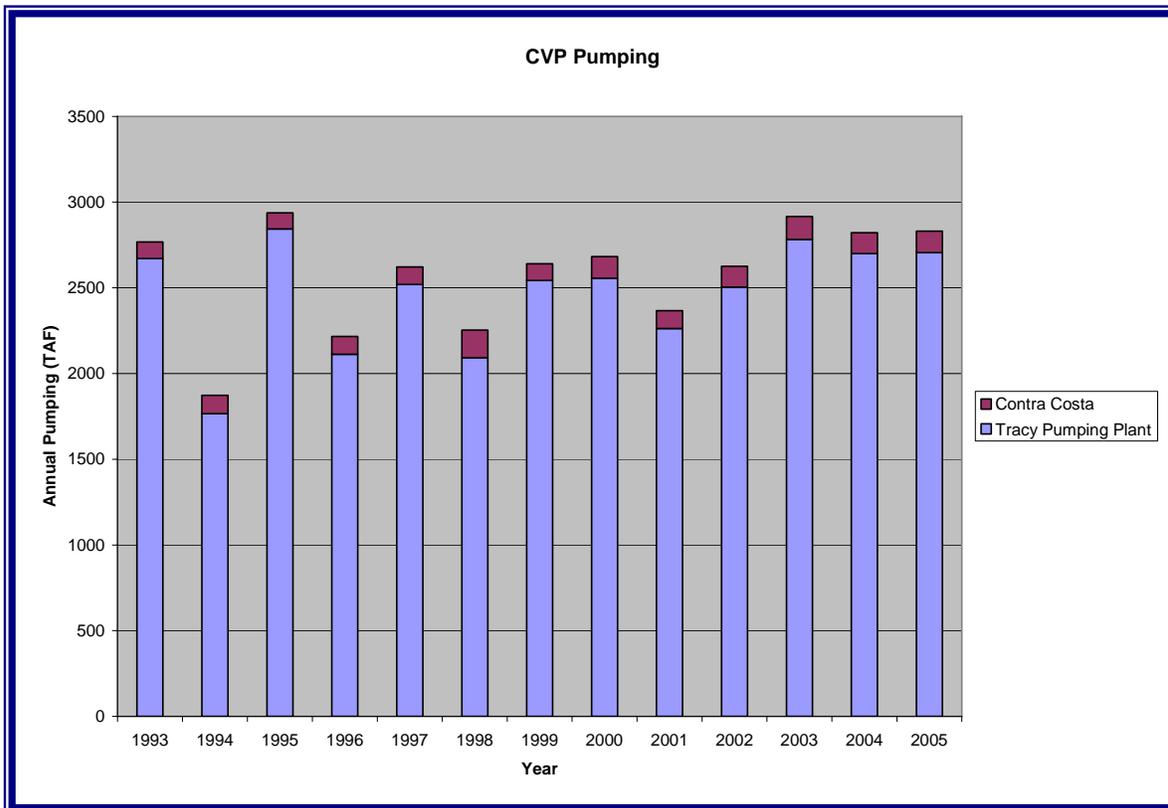
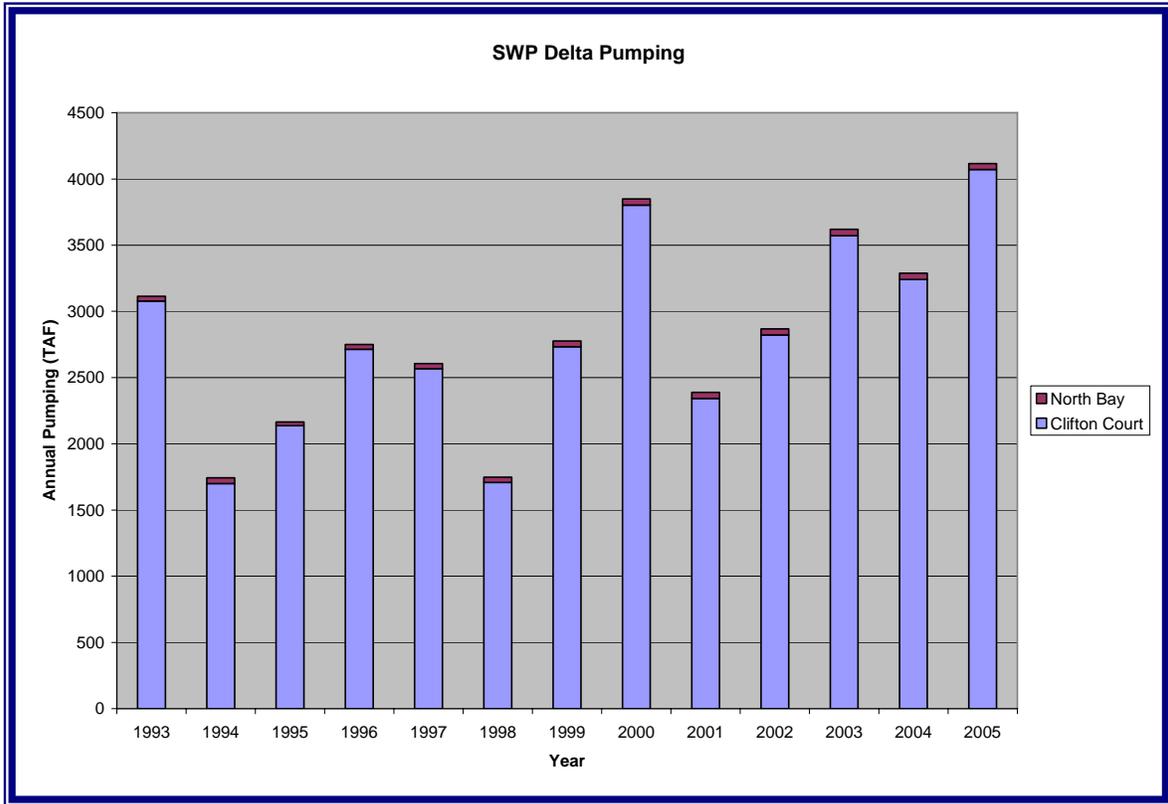


Figure 1 - Annual Stream Diversions from Central Valley Floor
(including diversion into the Hetch-Hetchy, Mokelumne, Madera or Friant systems)

Source: derived with data from DWR's C2VSIM and SANJASM Models, EBMUD, and USGS





Drinking Water Quality – Treatment of Delta Water

- ◆ Treating and disinfecting water produces a variety of disinfection byproducts (DBP) including trihalomethanes (THM), haloacetic acids (HAA), and bromate. Dissolved organic matter (organic carbon) and bromide in water contribute to the formation of disinfectant byproducts (DBPs). Water at the Banks pumping plant has relatively high concentrations of organic carbon and very high concentrations of bromide. Water at the other Delta municipal water supply intakes is also high in either or both of these DBP precursors.
- ◆ The majority of the regulated DBPs are considered probable or suspected human carcinogens but, based on animal studies, those containing bromine are the most potent. Public water systems using Delta water consistently meet, and many are well under¹, the DBP standards established by the EPA and the State of California. However, because cost, technological feasibility, and protection from pathogens must be taken into consideration, DBP standards are often set above the estimated one in a million to one in ten thousand (10^{-6} to 10^{-4}) cancer risk range targeted by the regulatory agencies. For example, the estimated lifetime 10^{-6} cancer risk level for bromate in drinking water is 0.05 µg/L and the 10^{-4} level is 5 µg/L but the current drinking water standard is set at 10 µg/L. Therefore, the standards are upper limits, and it is desirable from a public health standpoint to reduce DBP concentrations as much as possible.
- ◆ Eleven DBPs are currently regulated but many more have been identified. A recent study found approximately 600-700 in a search of the literature and investigated the occurrence of fifty of them in a nationwide study. Bromide and organic carbon in source water are also precursors for many of these unregulated DBPs.
- ◆ Although the formation of DBPs is also affected by treatment method, the type of disinfectant, and operation of the distribution system, it is always best to start with the best quality source water available. Securing and protecting the best available source water, good water treatment, and distribution system management are the three elements of the recommended multiple barriers approach to public health protection for drinking water systems. In California, the Delta is a key link in our source to tap drinking water system.
- ◆ Although there is considerable seasonal variation in the concentrations of the key DBP precursors, the following will give a general sense of Delta drinking water quality. These are median concentrations based on available data from 1990-2006.

Location	Total Organic Carbon (mg/L)	Bromide (µg/L)
Banks Pumping Plant	3.5	180
North Bay Aqueduct Intake	5.9	50
Sacramento River at Hood	1.9	10
San Joaquin River at Vernalis	5.5	240

¹ The data that we have analyzed so far shows that many systems using Delta water are “40/30 certified”, that is, they consistently produce water that is less than half the THM and HAA limits.

Annual Water Use (California Water Plan Update 2005)

- ◆ San Francisco Bay and South Coast Regions – 5 MAF (average of 1998, 2000 and 2001)
 - San Francisco Bay Region – 1.06 MAF
 - South Coast Region – 3.95 MAF

Conservation Potential

- ◆ 10 percent of water use in the San Francisco Bay and South Coast regions is 500 TAF
- ◆ According to several publications², potential conservation of urban water use in the San Francisco Bay and South Coast regions is between 700 TAF and 1.8 MAF

Recycled Water (CALFED Bay-Delta Program Water Use Efficiency Program, July 2000)

- ◆ Estimated existing use: 283 TAF
- ◆ Estimated potential additional water recycling by 2020: 1 MAF

Desalination

- ◆ Currently less than 9,000 acre-feet per year of desalinated water comes from ocean water.
- ◆ 200,000 acre-feet per year of desalinated water will come from desalinated ocean water by 2030 (California Water Plan Update 2005)

Agricultural Water Conservation³

- ◆ Conservation potential of 42 TAF
- ◆ Conservation potential of up to 1.4 MAF if cost is not a consideration

² Publications include: “Waste Not, Want Not: The Potential for Urban Water Conservation in California” (Pacific Institute, November 2003); California Water Plan Update 2005 (DWR, December 2005); Water Use Efficiency Comprehensive Evaluation (California Bay Delta Authority, August 2006).

³ Water Use Efficiency Comprehensive Evaluation (CALFED Bay-Delta Program, August 2006)