



DELTA STEWARDSHIP COUNCIL
A California State Agency

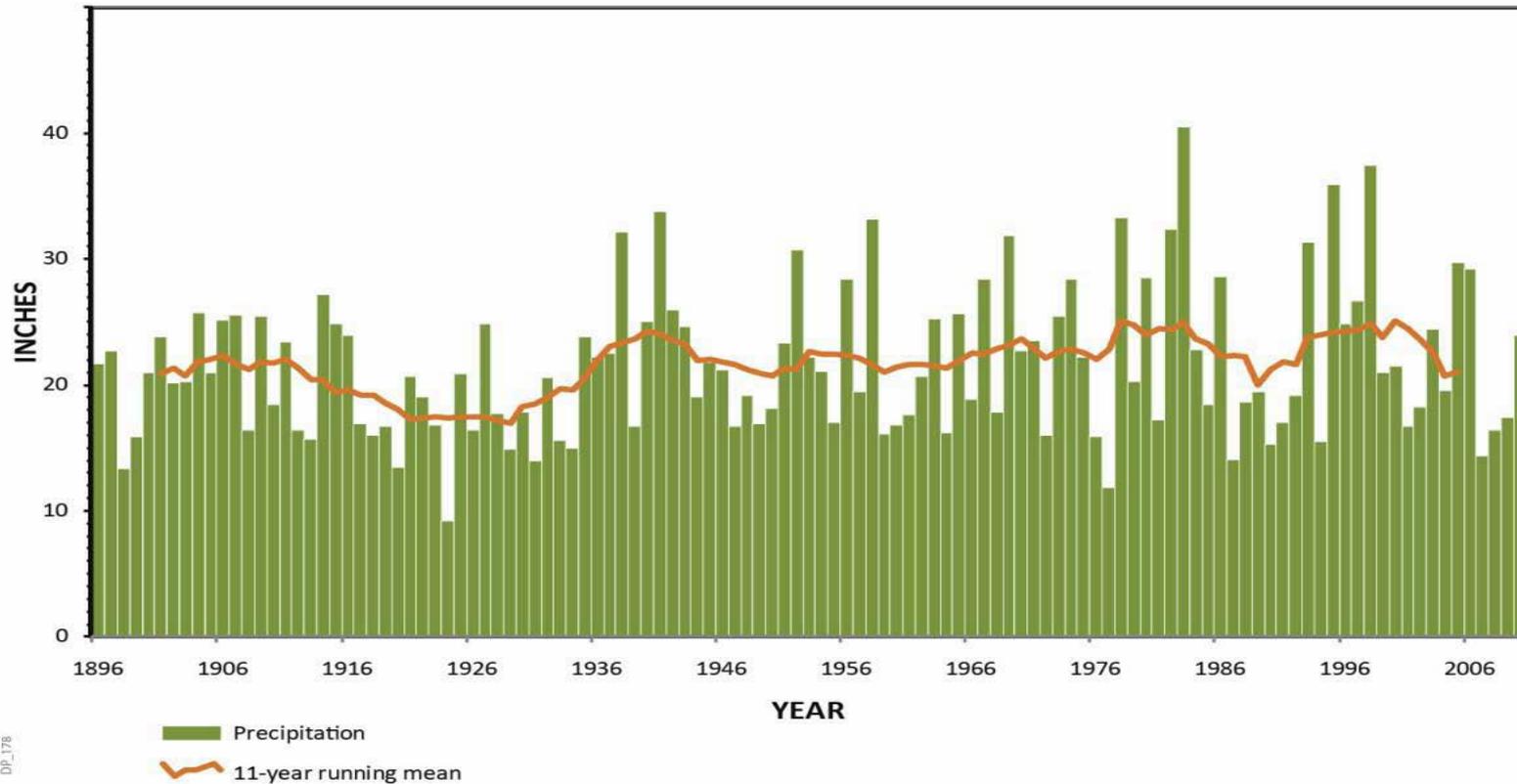
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**Presentation of Phil Isenberg, Chair
to VerdeXchange 2012
Los Angeles, CA - January 23, 2012**

"Coequal goals" means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place."

- CA Water Code §85054

Precipitation provides 97% of all water coming into California



DP_178

Figure 4-1
California's Variable Precipitation

On average, California receives about 200 million acre-feet per year, but in wet years precipitation can exceed 300 million acre-feet and in dry years it can be less than 100 million acre-feet. The unpredictability of the state's rainfall, and its history of multi-5 year droughts, makes the management of available water to reliably meet in-stream and human uses extremely challenging. 6
Source: DWR 2009; Western Regional Climate Center 2011a

*See 5th Draft Delta Plan pg. 72

The amount of water that is usable for human purposes is about 1/3 of the total

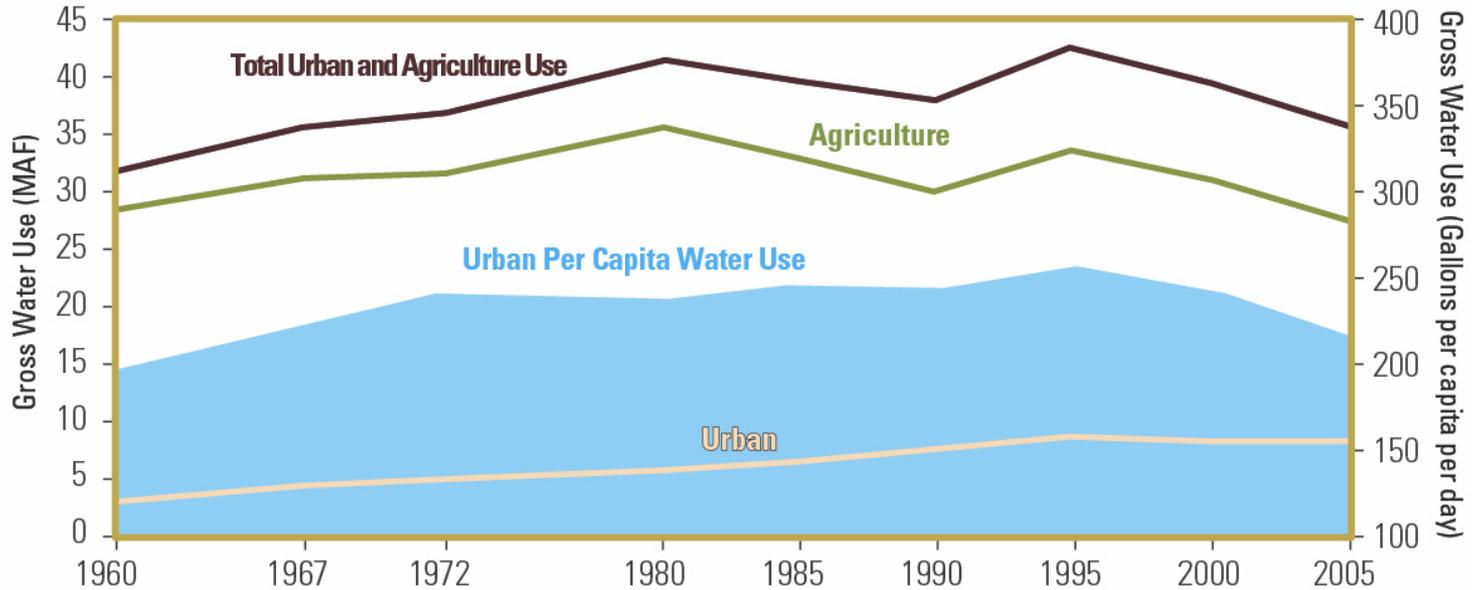
CALIFORNIA'S WATER SUPPLY AND DEMAND

	1998 (171% of normal) ^a	2000 (97% of normal) ^a	2001 (72% of normal) ^a
Total supply (precipitation & imports)	336.9	194.7	145.5
Total uses, outflows, & evaporation	331.5	200.4	159.9
Net storage changes in state	5.5	-5.7	-14.3
Distribution of dedicated supply (Includes reuse) to various applied water uses			
Urban uses	7.8 (8%)	8.9 (11%)	8.6 (13%)
Agricultural uses	27.3 (29%)	34.2 (41%)	33.7 (52%)
Environmental water ^b	59.4 (63%)	39.4 (48%)	22.5 (35%)
Total dedicated supply	94.5	82.5	64.8
maf = million acre-feet a. Percent of normal precipitation. Water year 1998 represents a wet year; 2000, average water year; 2001, drier water year. b. Environmental water includes instream flows, wild and scenic flows, required Delta outflow, and managed wetlands water use. Some environmental water is reused by agricultural and urban water users.			

Source: DWR. 2005. California Water Plan 2005. Sacramento, CA.

In dry years, urban and particularly, agricultural water use increases both in absolute numbers and as a proportion of the water available. Water allocated to the environment declines significantly in dry years as human use comes before environmental use.

Trends in California Water Use

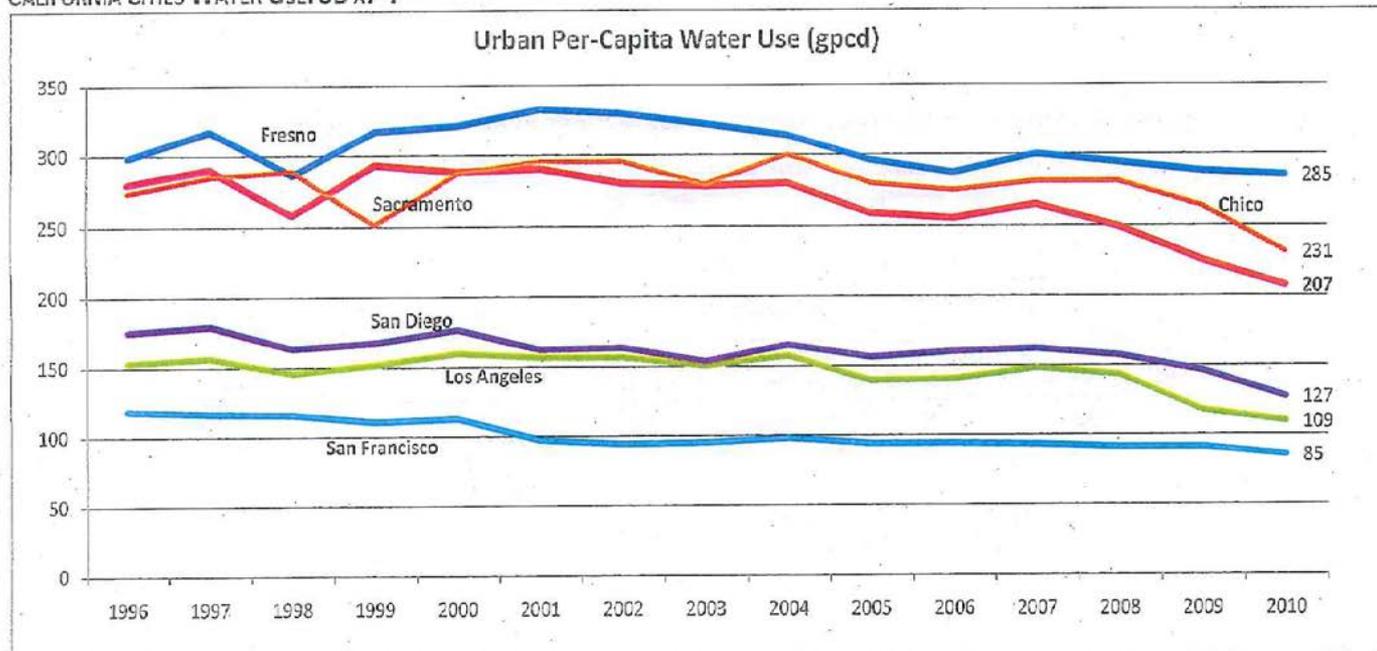


Over the last two decades, California's total water use has been declining. A majority of the reduction has occurred in the agricultural sector, where increased irrigation efficiency and some land retirements have shifted water use patterns. Urban water use is also becoming more efficient, and per capita water use has declined significantly. As a result, statewide urban water use has remained relatively flat over the last decade, despite substantial population growth. Some major cities, like the city of Los Angeles, are using the same amount today as they did over 30 years ago, even with the addition of over 5 million people to their population. California's experience mirrors national trends which show declining water use patterns, particularly in the urban sector.

Source: Hanak et al. 2011; adapted from DWR 2009

DEMAND

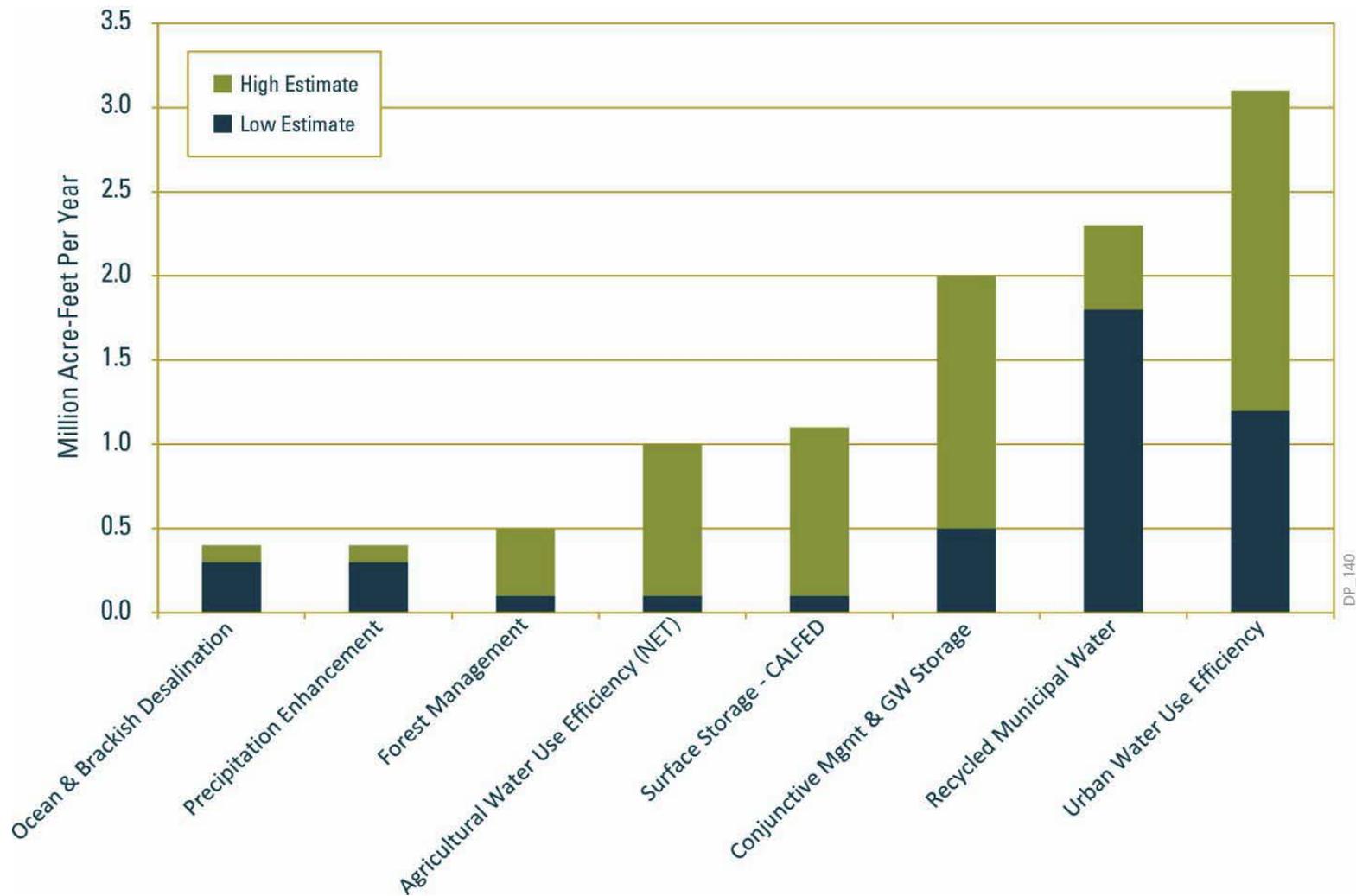
CALIFORNIA CITIES WATER USE: SB x7-7



Source: 2010 Urban Water Management Plans, San Francisco, Sacramento, San Diego, Fresno, Los Angeles, Chico

Southland and coastal cities have far lower per capita water use than cities in the Central Valley caused both by conservation and the benefit of living in a more temperate climate. Conservation is partly due to increased installation of low flow appliances/toilets and use of water meters, and voluntary conservation particularly in the commercial and industrial sector. Many urban areas have experienced significant short-term declines in water use with the recent recession, but over the longer term many local urban water systems will see a return to higher water use patterns.

* See DSC Mod New Dem Handout Dec 13, pg. 5



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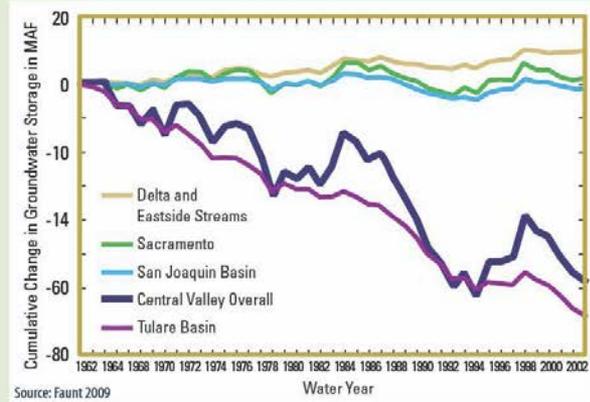
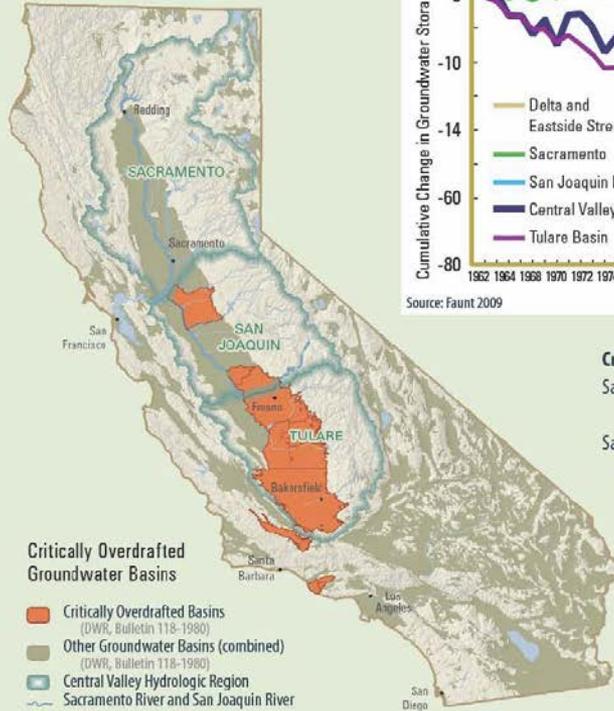
Figure 4-3
Strategies to Increase Water Supply and Reduce Demand

California has a wealth of additional water resources that can be developed. In 2009, the Department of Water Resources estimated that the state could further reduce water demand and increase water supplies in the range of 5 to 10 million acre-feet over the next 30 years through the use of existing technologies. Improved efficiency and the development of these supplies will reduce reliance on the Delta and greatly improve water supply reliability for California.

Source: DWR 2009 State Water Plan Update

*See 5th Draft Delta Plan pg. 79

Groundwater Overdraft Challenges



Critically Overdrafted Basins

Sacramento Hydrologic Region	Tulare Hydrologic Region
<i>None</i>	<i>Kings Basin</i>
San Joaquin Hydrologic Region	<i>Keweah Basin</i>
<i>Eastern San Joaquin County Basin</i>	<i>Tulare Lake Basin</i>
<i>Chowchilla Basin</i>	<i>Tule Basin</i>
<i>Madera Basin</i>	<i>Kern County Basin</i>
	Other Hydrologic Regions
	<i>Cuyama Valley Basin</i>
	<i>Oxnard Basin</i>
	<i>Las Posas Basin</i>
	<i>Valley Basin</i>

Groundwater is California's single largest source of water, providing about 35 percent of the state's supply.

Over 40 percent of Californian residents rely on groundwater for some portion of their supply, while many small to moderate sized communities are entirely dependent on groundwater for their drinking water systems.

Groundwater overdraft is a critical problem facing specific regions of California. Overdraft is a condition in which the amount of water withdrawn from a basin by pumping exceeds the amount of water that recharges a basin over the long term, resulting in permanent loss of storage capacity, water quality degradation, and environmental impacts. It is estimated that the San Joaquin Valley has lost about 60 MAF of groundwater storage in the past 50 years, and subsidence impacts over half of this region.

Various types of water rights or permits granted by government exceed the annual flows of the waters of California

State Water Resources Control Board

http://www.waterboards.ca.gov/about_us/performance_report_1011/al...

Home → About Us → Performance Report 1011 → Allocate

The California Water Boards' Annual Performance Report - Fiscal Year 2010-11

ALLOCATE: WATER RIGHTS ALLOCATIONS

PERFORMANCE REPORT
FEEDBACK

GROUP: WATER RIGHTS ALLOCATIONS	MEASURE: NUMBER OF PERMITS NUMBER OF LICENSES ACRE-FEET OF WATER ALLOCATED NEW APPLICATIONS RECEIVED										
MESSAGE: <i>Although the number of actions processed reflects less than 5% of total water right holders, it requires a significant level of effort.</i>	<table border="1"> <thead> <tr> <th colspan="2">KEY STATISTICS FOR FY 2010-11</th> </tr> </thead> <tbody> <tr> <td>Acre Feet of Water Allocated:</td> <td>420,816,292</td> </tr> <tr> <td>Number of New Permits:</td> <td>18</td> </tr> <tr> <td>Number of New Licenses:</td> <td>25</td> </tr> <tr> <td>Applications Resolved:</td> <td>71</td> </tr> </tbody> </table>	KEY STATISTICS FOR FY 2010-11		Acre Feet of Water Allocated:	420,816,292	Number of New Permits:	18	Number of New Licenses:	25	Applications Resolved:	71
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MEASUREMENTS - Data Last Updated on: 09-26-2011 (11:33 am)

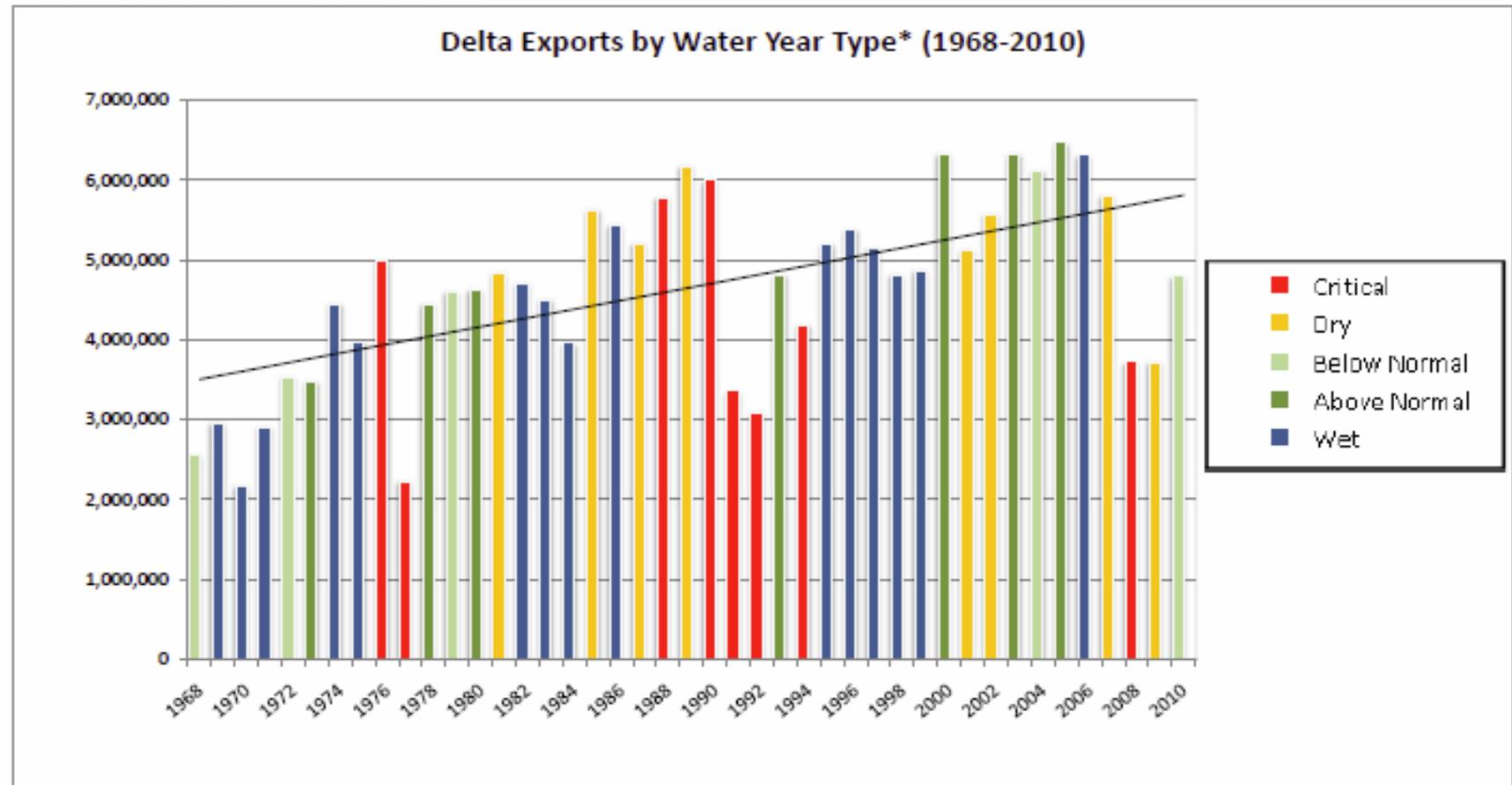
Type of Water Right Allocation	Number of Water Right Holders	Number Issued in FY 10-11	Number Revoked in 10-11	Amount of Water Rights (Acre-Feet)	Number of New Water Right Applications	Total Pending (as of 06/30/2011)	Received in FY 10-11	Closed or Resolved
Permits	1,503	18	8	216,001,017	New Applications	406	54	71
Licenses	10,899	25	38	88,331,540				
Statements of Water Diversion and Use	10,137	1,473	47	116,371,260				
Other Water Rights	14,108	100	122	112,475				
TOTAL	36,647	1,616	215	420,816,292				

* See State Water Resources Control Board

http://www.waterboards.ca.gov/about_us/performance_report_1011/allocate/61111_wr_alloc_permits.shtml

IMPACTS ON DELTA AND ECOSYSTEM

CALIFORNIA'S WATER SYSTEM: DELTA EXPORTS



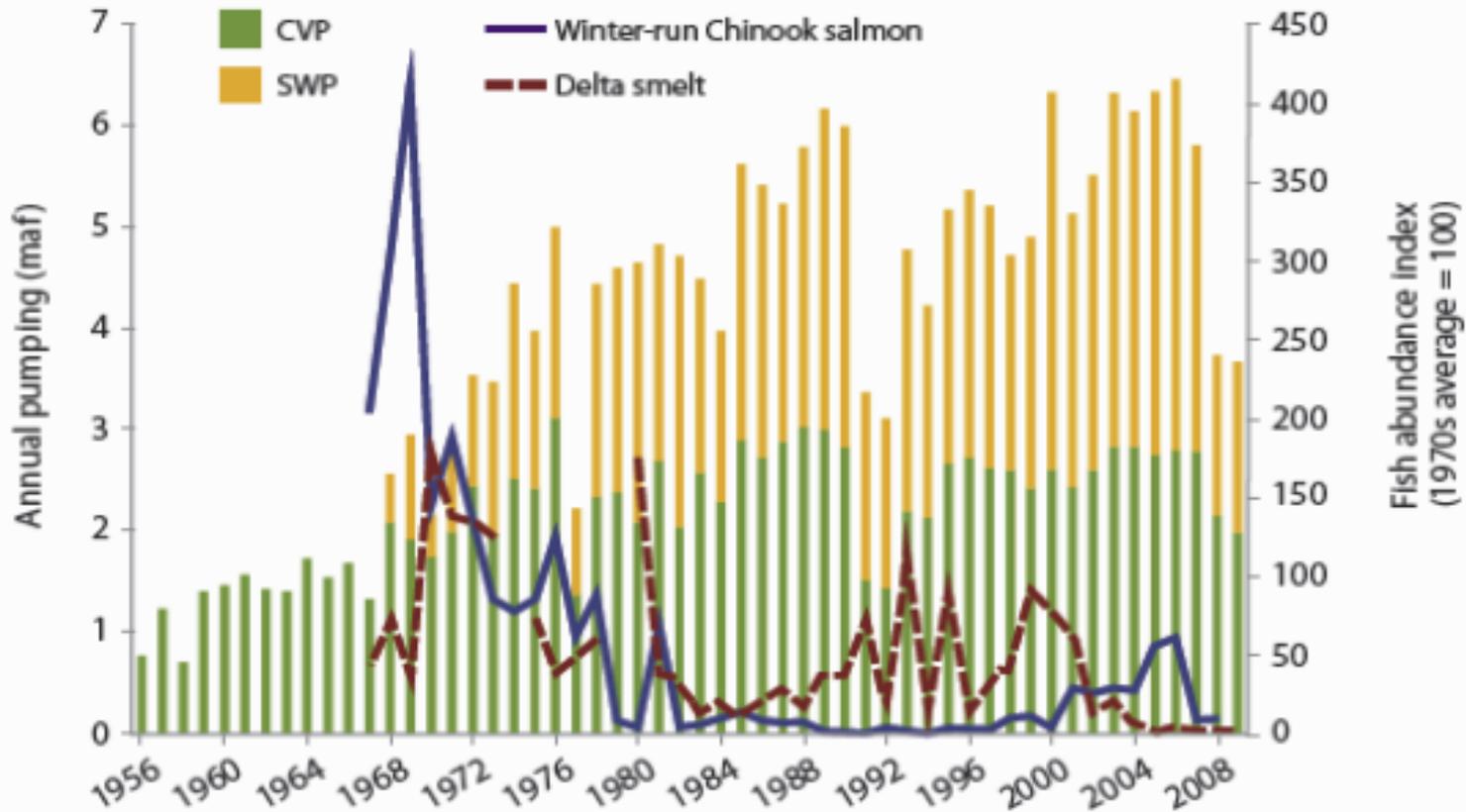
Source: Delta Stewardship Council. 2011. Adapted from DWR Dayflow Program and California Data Exchange Center (DWR)

Exports from the Delta have been rising over the past four decades. Historically, California has exported more of the water available during dry years than wet years. Increasingly, science is showing that this may have severe environmental consequences.

* See DSC Mod New Dem Handout Dec 13. pg 8

IMPACTS ON DELTA AND FISH SPECIES

THE DECLINE IN THE DELTA ECOSYSTEM



Source: Hanak, E., J. Lund, A. Dinar, B. Gray, R. Howitt, J. Mount, P. Moyle, and B. Thompson. 2011. *Managing California's Water From Conflict to Reconciliation*. San Francisco, CA. Public Policy Institute of California. Adapted from DWR Dayflow Data and Department of Fish and Game surveys.

Water exports are one stressor, but there are others. However, as exports have risen, fish populations have suffered.

* See DSC Mod New Dem Handout Dec. 13, pg. 12