



Association
of California
Water Agencies

Since 1910

Leadership • Advocacy
Information • Service



2015 Drought: Four Years and Counting

WESTCAS 2015 ANNUAL CONFERENCE
June 17, 2015 • David Bolland, ACWA Special Projects Manager

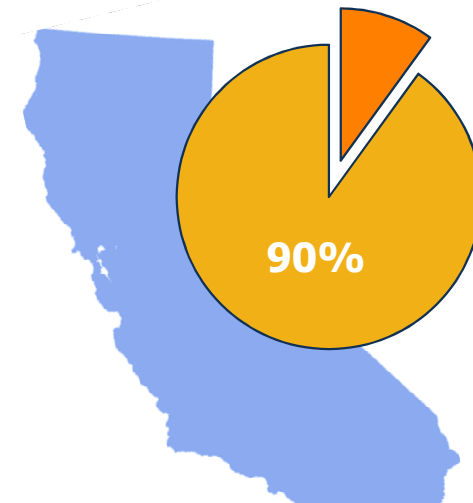
About ACWA

Who We Represent . . .

- + ACWA members responsible for 90% of the state's distributed water

Water Sources & Services

- + Federal, state and local projects
- + Surface and groundwater
- + Agricultural, urban, industrial customers
- + Wholesale, retail



Presentation Overview

Drought conditions

Impacts and
Response

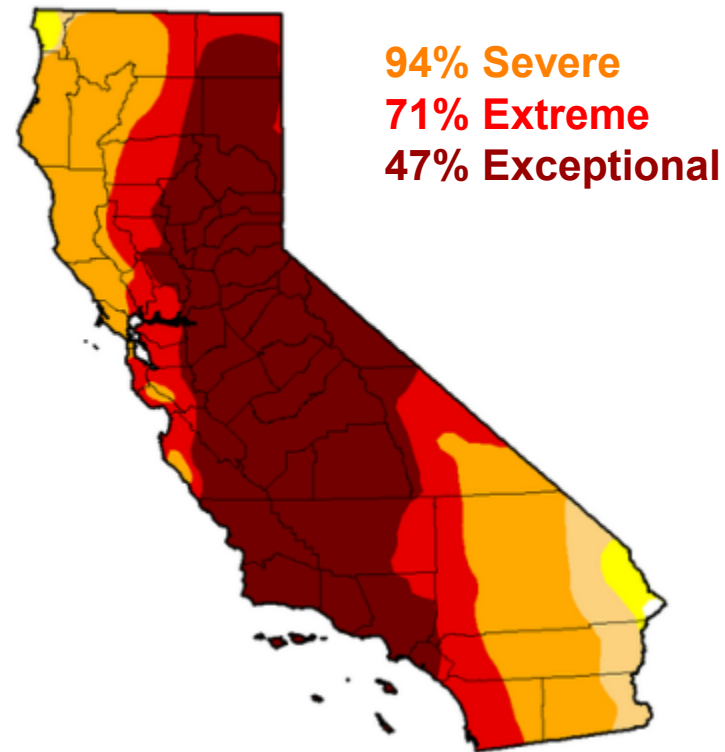
Near-Term
Actions

Longer-
Term
Strategy

2015 Drought: Four Years and Counting

- + Record breaking conditions in 2014; 2015 on track to be hotter (but not drier)
- + 2015 statewide snowpack at historic lows
- + Recent storms provided little lasting relief
- + Australian-style “Millennium Drought” possible

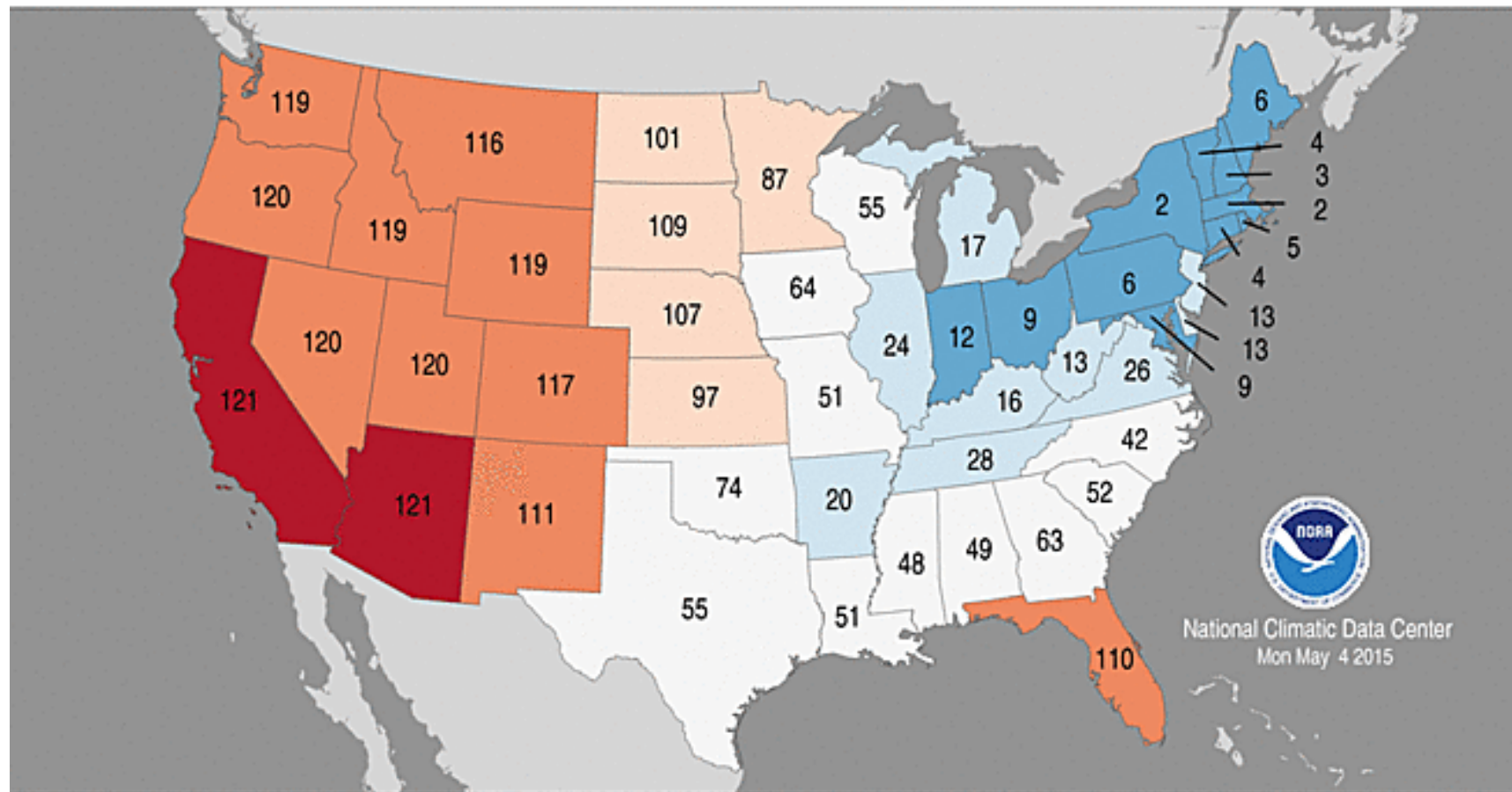
U.S. Drought Monitor – June 9, 2015



Statewide Average Temperature Ranks

January–April 2015

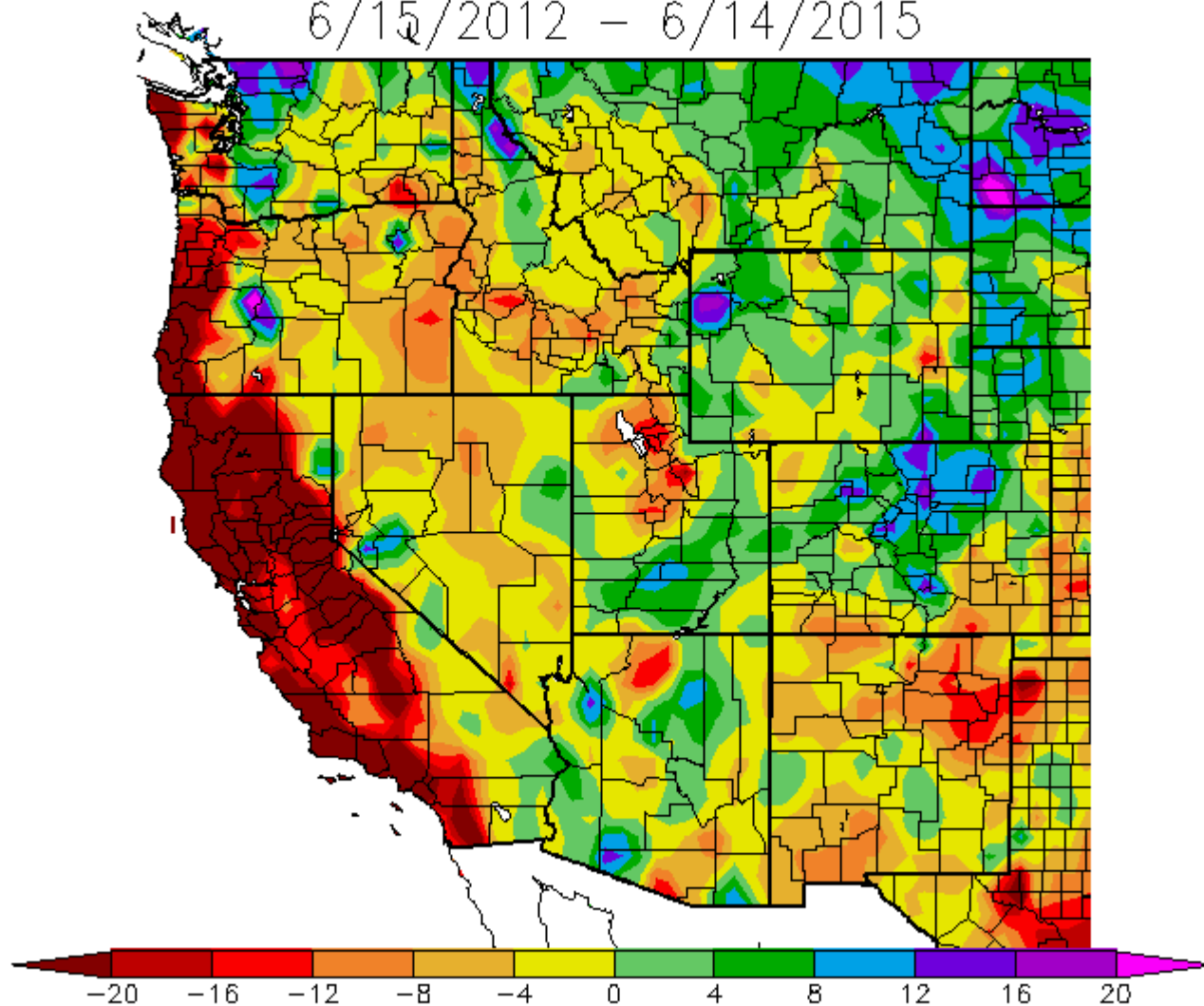
Period: 1895–2015



National Climatic Data Center
Mon May 4 2015

Source: NOAA

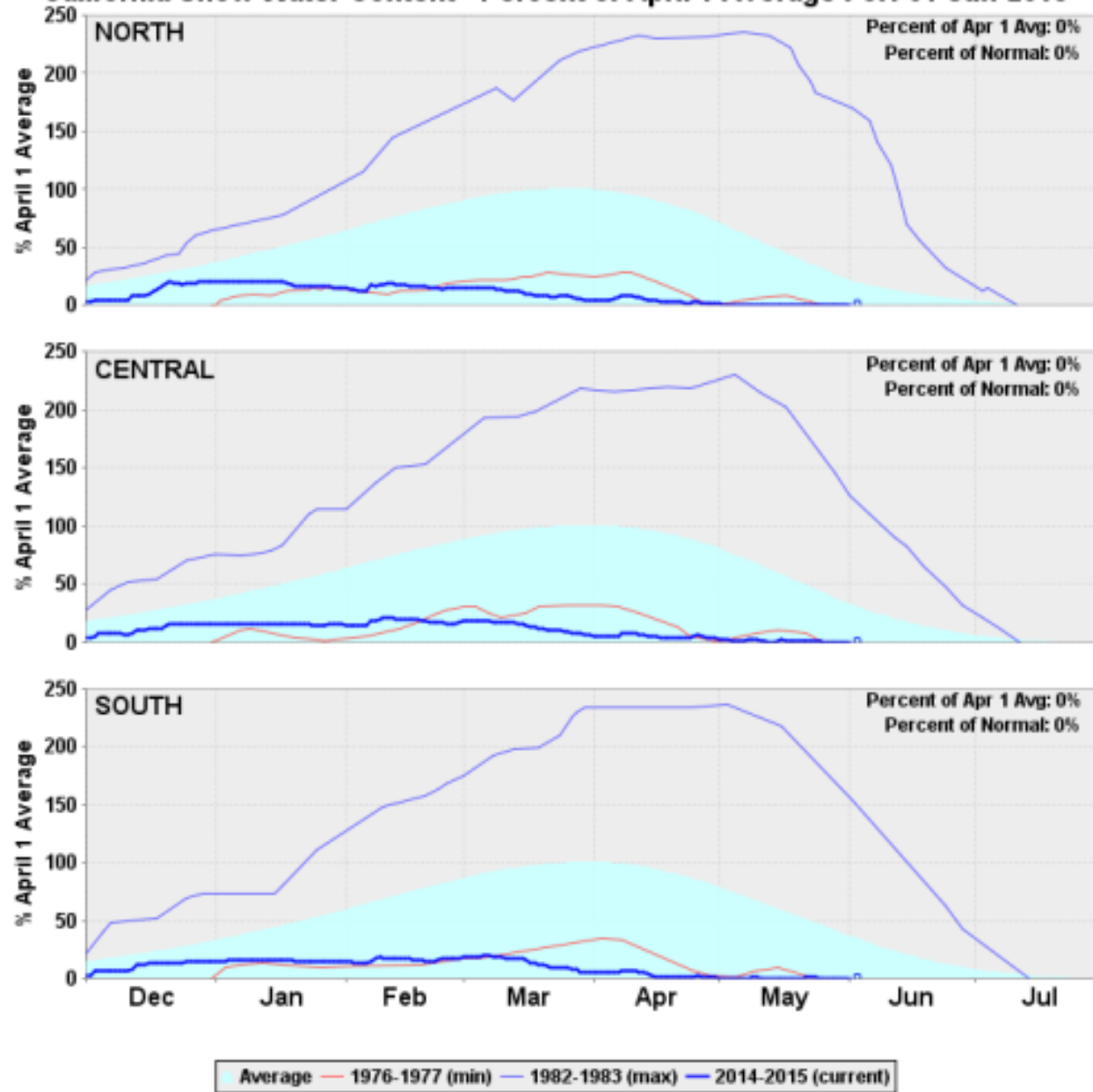
Precipitation Departure from Average (in.)
6/15/2012 – 6/14/2015



Generated 6/15/2015 at WRCC using provisional data.
NOAA Regional Climate Centers

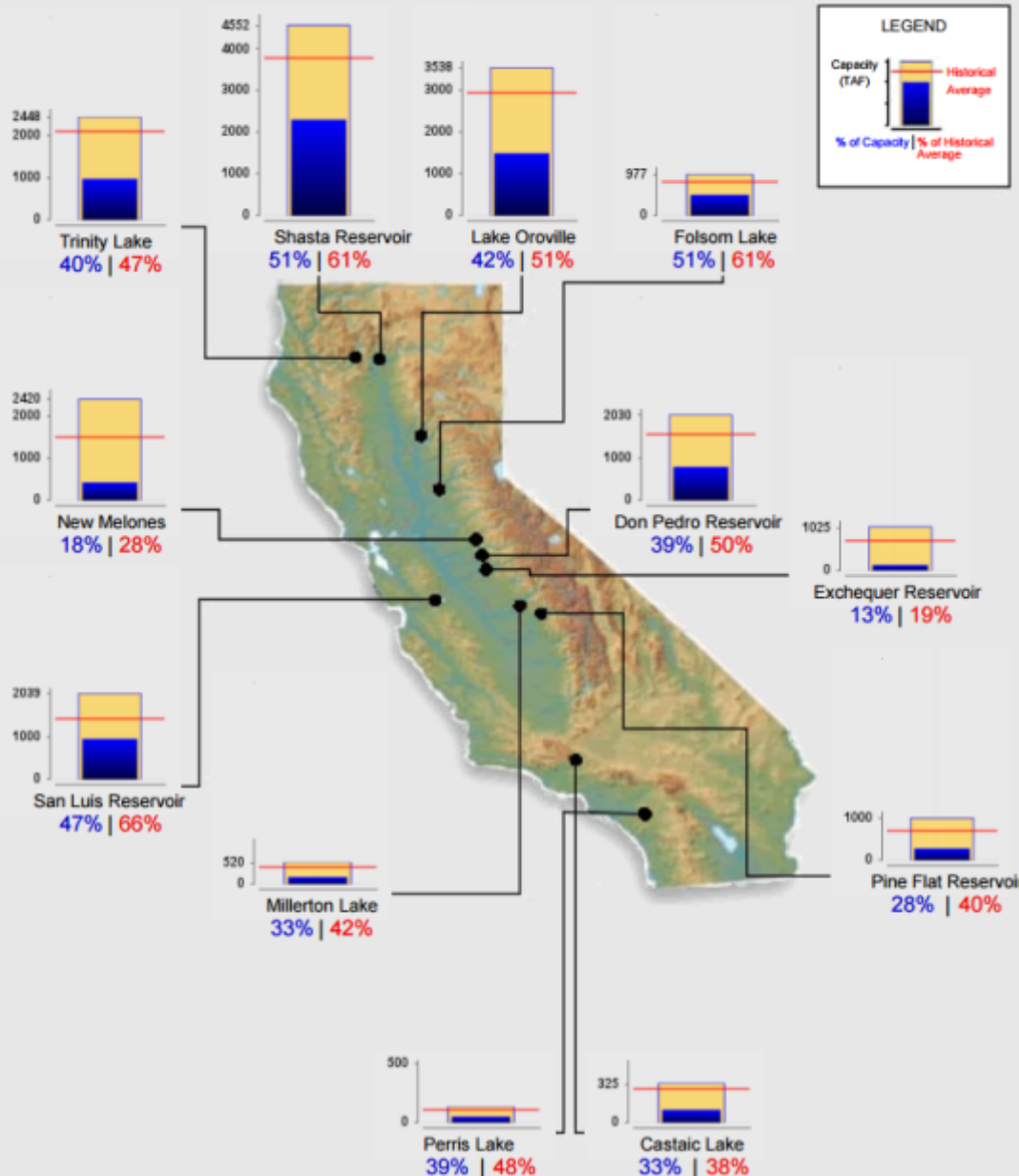
Source: NOAA

California Snow Water Content - Percent of April 1 Average For: 01-Jun-2015



Source: DWR

CURRENT RESERVOIR CONDITIONS

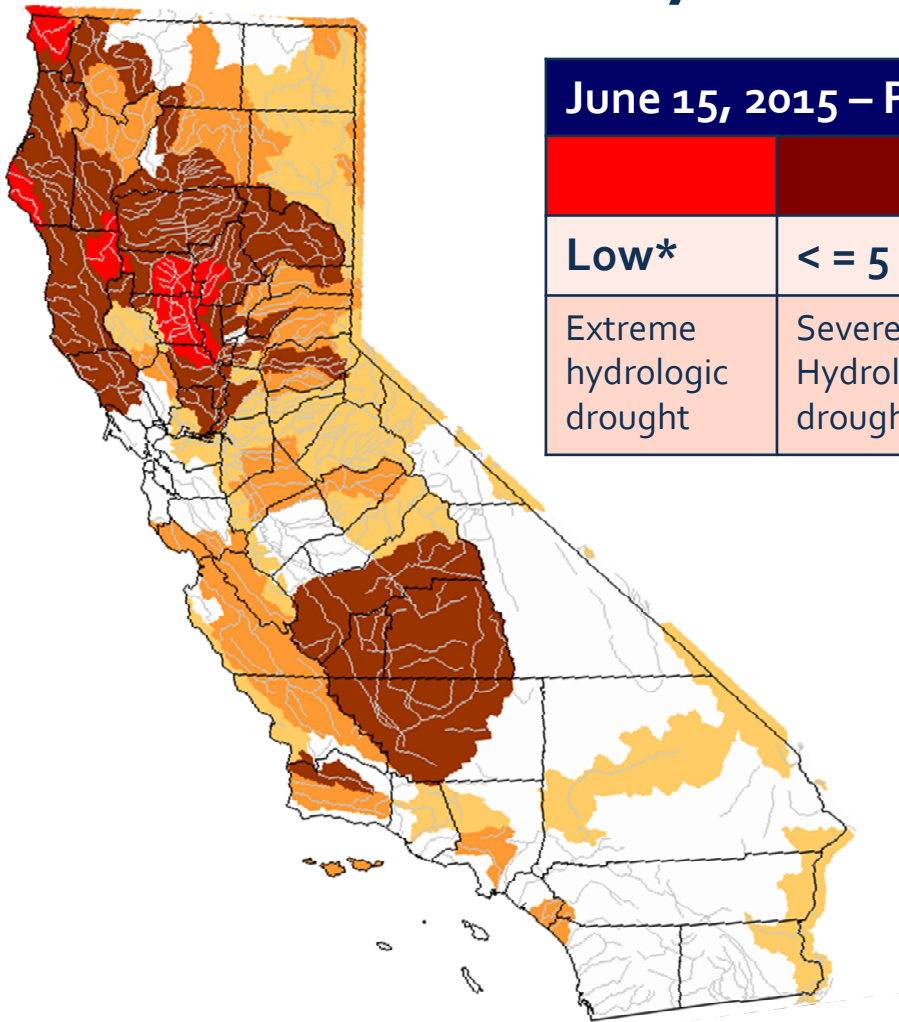


Department of Water Resources CALIFORNIA DATA EXCHANGE CENTER

Major Reservoir conditions as of June 15, 2015 (% historical average):

- Shasta: 61%
- Folsom: 61%
- San Luis: 66%
- Lake Oroville: 51%
- Don Pedro: 50%
- New Melones: 28%

USGS 7-day average streamflow conditions in hydrologic units

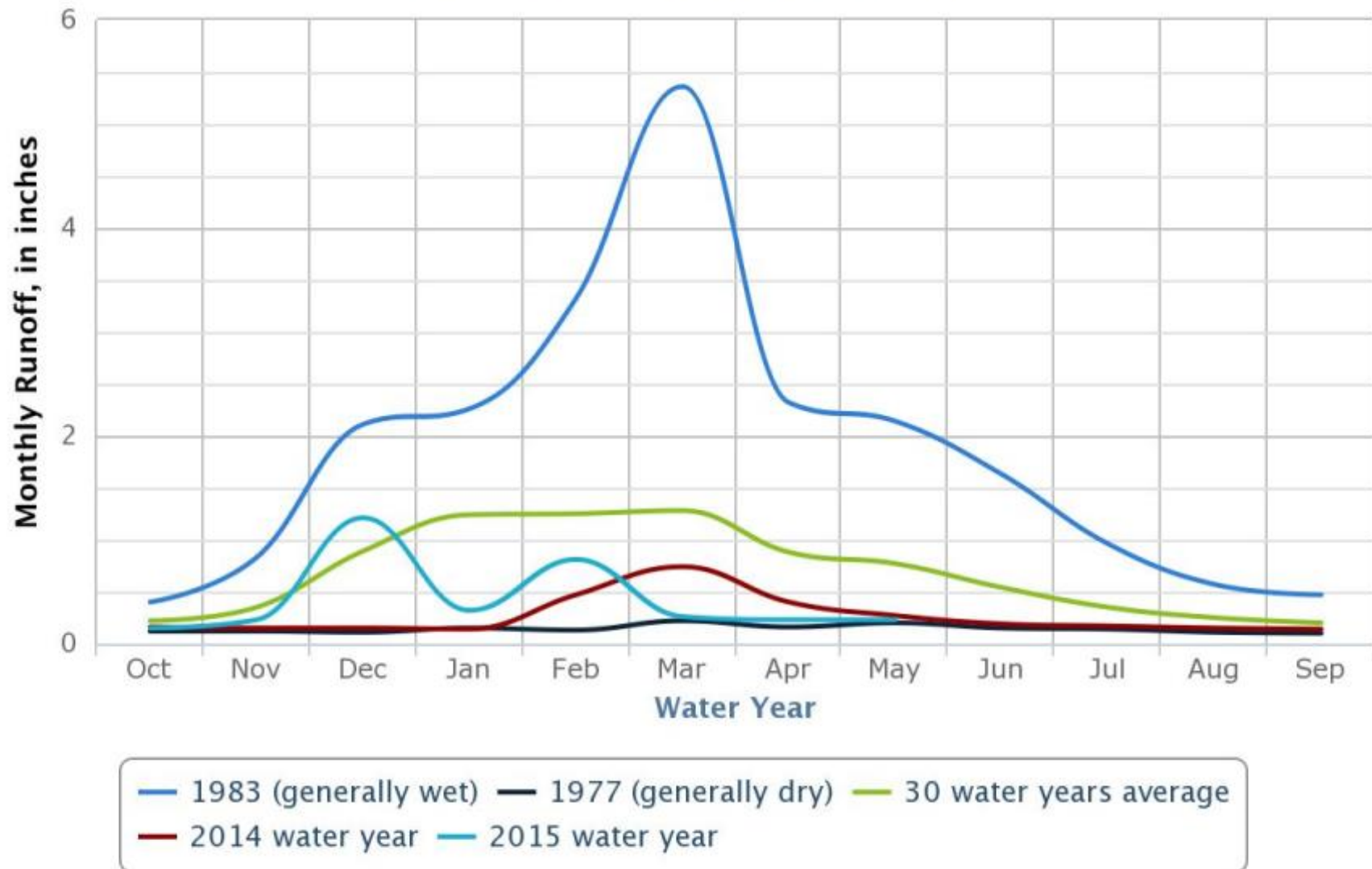


June 15, 2015 – Percentile classes

Low*	≤ 5	6-9	10-24	Insufficient data for hydrologic region
Extreme hydrologic drought	Severe Hydrologic drought	Moderate hydrologic drought	Below normal	

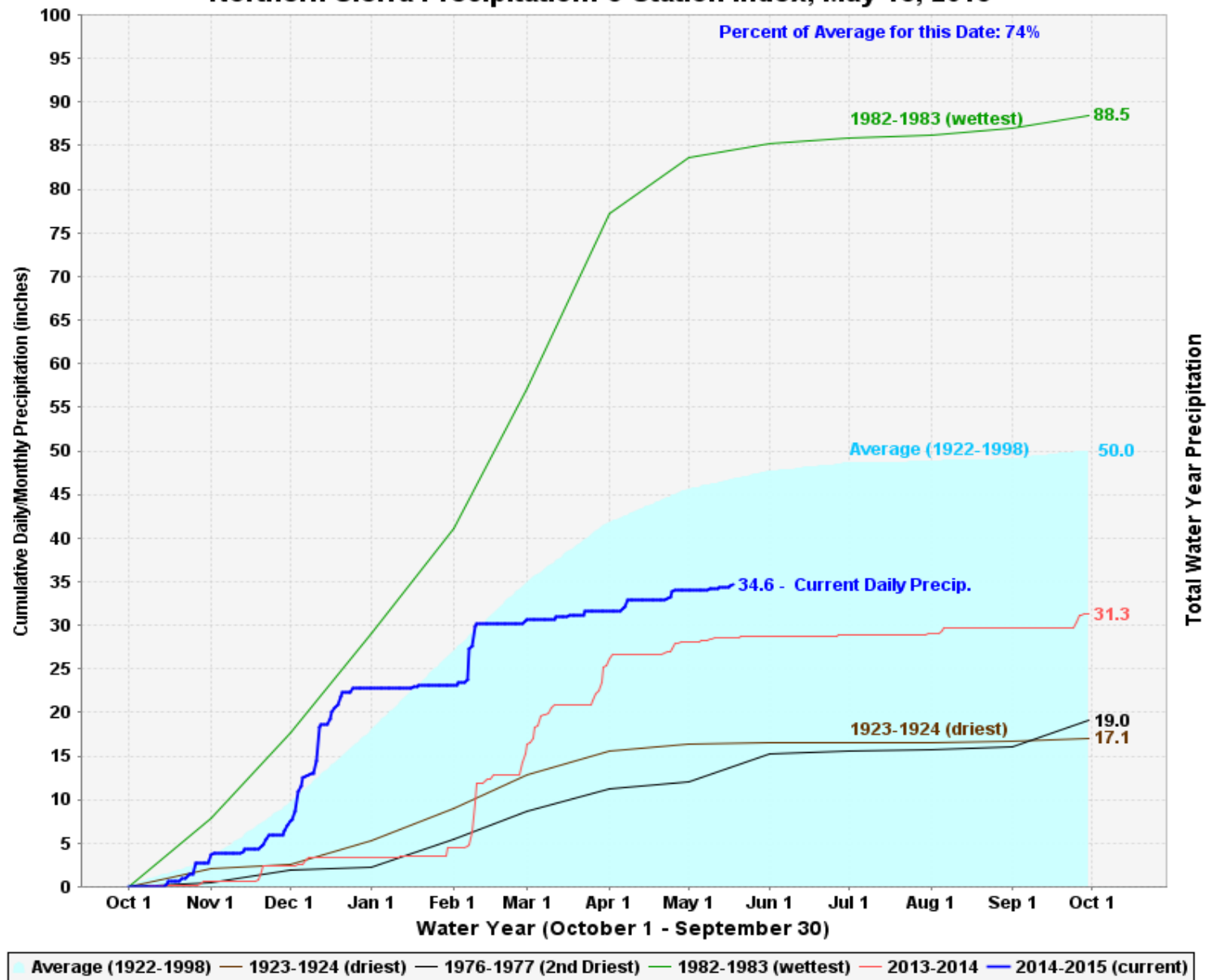
*Low indicates that the estimated streamflow is a new record low for this day of the year

Monthly Runoff for California



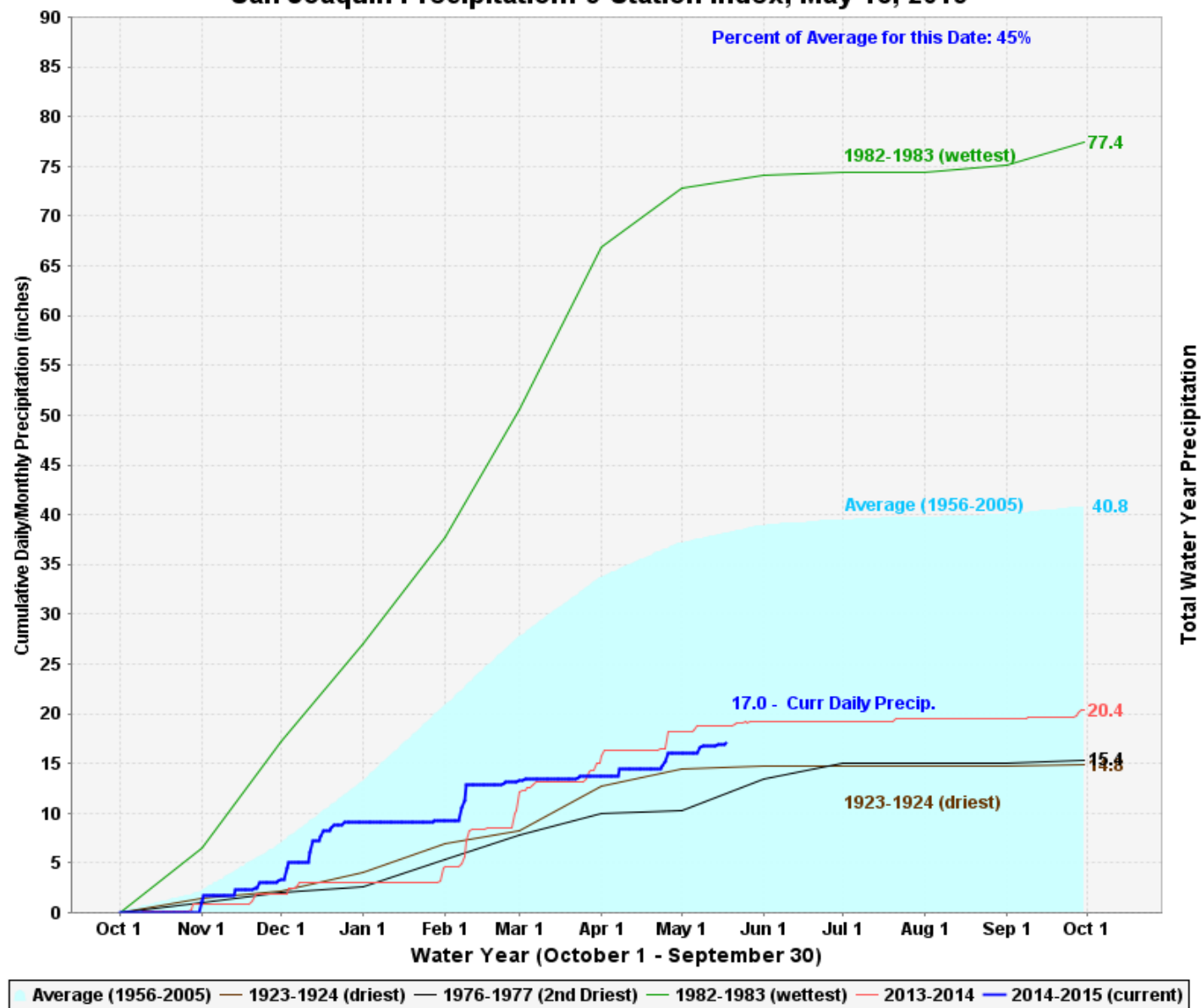
Source: USGS

Northern Sierra Precipitation: 8-Station Index, May 18, 2015



Source: DWR

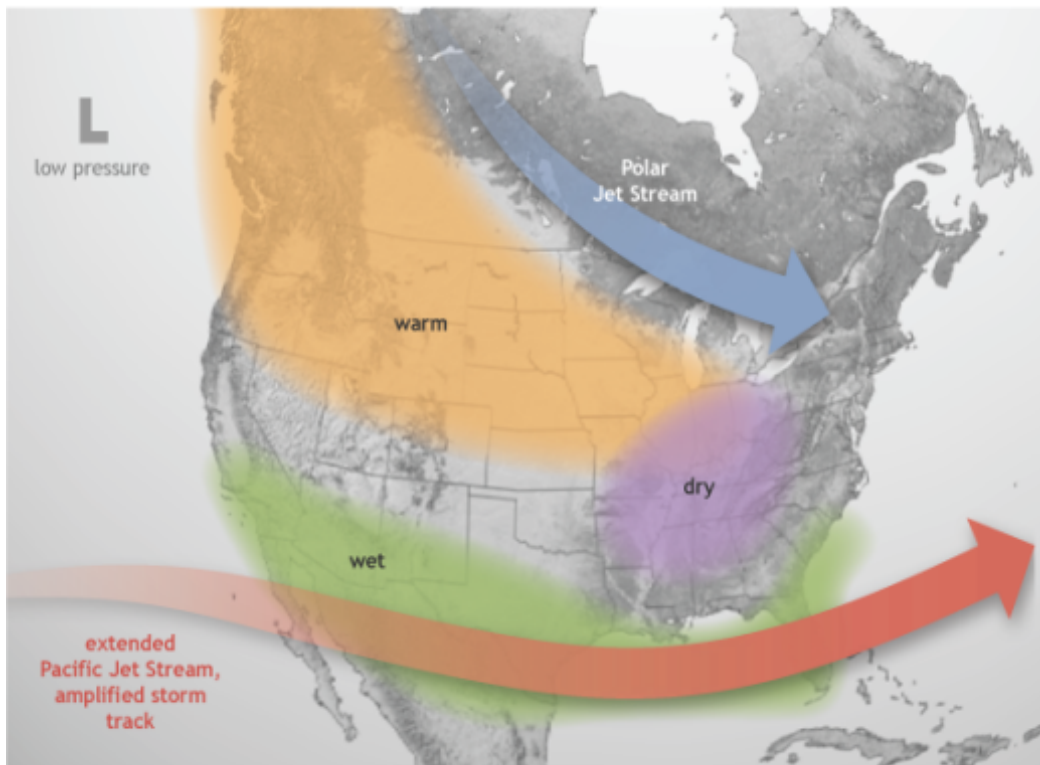
San Joaquin Precipitation: 5-Station Index, May 18, 2015



Source: DWR

“El Niño Advisory” Fall-Winter

Wintertime El Niño pattern



NOAA Climate.gov

- + 90% chance of a “strong” event for fall/winter 2015
- + 85% chance through winter 2015-16
- + Significant rainfall associated 1982-83 and 1997-98 events
- + No guarantees, predictions have been wrong before

2015 State/Federal Water Project Supplies

- + SWP allocation: 20%
- + CVP allocation:
 - + 0% Ag N and S of Delta
 - + 0% Eastside and Friant
 - + 25% M&I N and S of Delta
 - + 25% American and in-Delta
 - + 75% wildlife refuges
 - + 75% water rights/settlement
- + Colorado River: full apportionment



Drought Impacts: Agricultural Sector 2014



- + Agriculture accounts for 80% of *developed* water used
- + Agricultural sector hit hard by drought in 2014:
 - + Surface water deliveries cut by 6.6 MAF
 - + \$2.2 billion in revenues and 17,100 jobs lost
 - + Farm communities severely impacted; sectors that support agriculture impacted
 - + Increased reliance on groundwater

Source: UC Davis economic analysis, LAO

Drought Impacts: Agricultural Sector 2015



Bad News:

- + 800,000+ acres (9% of the state) will be fallowed in 2015
- + 18,600 jobs will be lost in 2015
- + Groundwater impacts: increased pumping costs and dropping water levels

Good News:

- + Overall farm economy remains strong
- + Gross farm revenue, employment remain steady

Source: California Farm Water Coalition, U.S. Department of Agriculture, LAO

Drought Impacts: Urban Sector

- + Urban water users account for about 20% of *developed* water use
- + Major metropolitan communities with diverse water supplies are seeing less severe impacts
- + Communities without diverse water sources are seeing more severe impacts
 - + Sharp cutbacks
 - + Some require emergency supplies



Drought Impacts: Dry Well Reports

- + 2,014 wells statewide are critical/dry
- + 1,769 of these wells are in the Central Valley
- + 10,070 residents affected



Source: California Office of Emergency Services, June 4

Drought Impacts: Environment



- + Low flows and warm water hurting salmon, steelhead and smelt
- + Less wetlands water for migratory birds and other species
- + Extensive drought-related tree mortality in 2015 (12.5 million trees on more than 8.3 million acres)
- + Extreme risk catastrophic wildfires during summer and fall

Drought Impacts: Fire Activity



- + This year CAL FIRE has responded to 1,900+ wildfires across the state
- + 6,852 acres burnt in the State Responsibility Areas
- + Fire activity is above five year average for the same period
- + CAL FIRE and USFS at peak staffing throughout the state

Some Good News: Better Prepared For Drought Than Ever Before

- + Huge local and regional investments in past 20 years (over \$20B)
- + Statewide GPCD reduced under conservation programs
- + Substantial investments in regional storage
- + Significant groundwater banking and conjunctive management
- + Increased recycled water
- + Increased water marketing



Billions in State Drought Relief

- + **2014 Emergency Legislation:** \$687 million for water system improvements
- + **2014 Budget Act:** \$142 million in relief
- + **October 2014 – DWR:** \$200 million of expedited grants funding; with \$250 million by fall 2015
- + **2014 Budget – CALFIRE:** \$53.8 million to support firefighters/expanded fire season
- + **2015 Emergency Legislation:** \$1 billion in relief
- + **2015 State Budget – May Revise:** \$2.2 billion for local water supplies, conservation, and immediate relief to impacted communities



Emergency Drought Assistance

- + **Food Assistance:** 698,200 boxes of food delivered to severely impacted communities statewide
- + **Rental Assistance:** \$8.75 M to help 5K+ applicants in 21 counties
- + **Low-income Water Bill Assistance:** \$94,056 to help 500+ low-income families



Source: CDSS, HCD, CSD

Overall Drought Management Strategy

- + Reduce “ornamental” water use
- + Protect water use in economic production, both urban and agricultural
- + Overwhelming popular support for this strategy



Chronology of State Drought Response

May 2013 EO on water transfers

Dec 2013 Governor's Drought Task Force formed

Jan 2014 Governor's emergency proclamation

March 2014 Drought relief legislation

April 2014 Proclamation of continued emergency

Sep 2014 EO for emergency drinking water assistance

Dec 2014 EO continuing CEQA waiver for specified actions

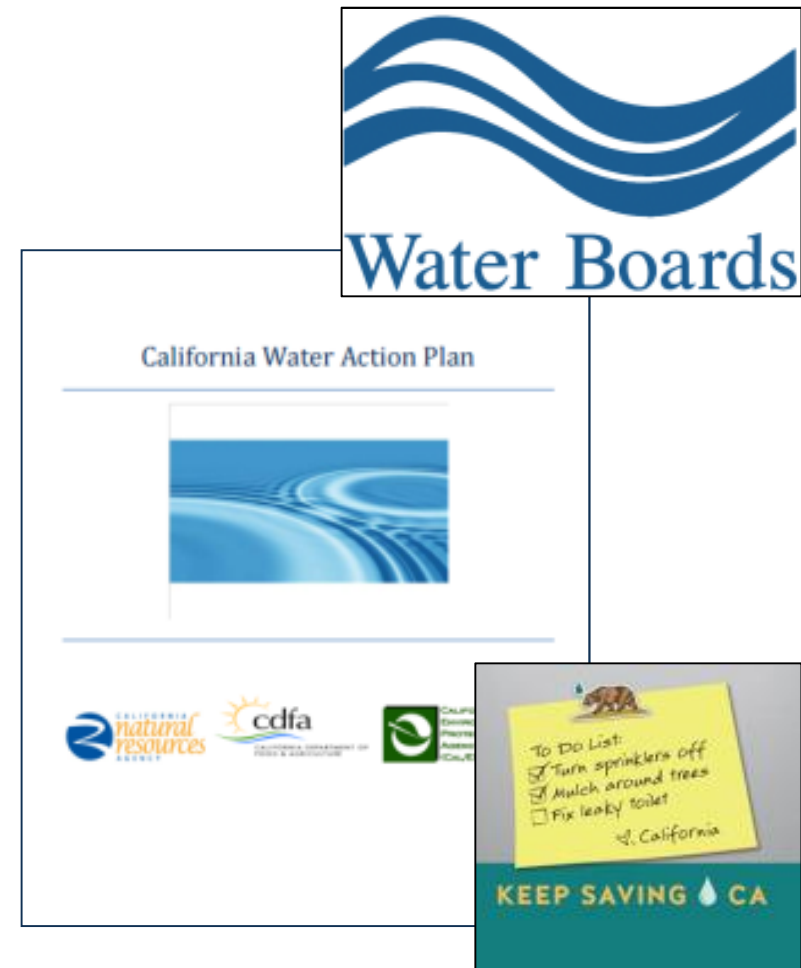
March 2015 Drought relief legislation

April 1, 2015 Executive Order mandating conservation



2015 Drought: Key Actions

- + Brown Administration: Leadership on Prop. 1, CWAP, SGMA
- + Local water agencies working their Water Shortage Contingency Plans
- + Water conservation public education efforts expanded
- + State Water Board Mandatory Urban Conservation Emergency Regulation



Example pattern:

- Highest targets in hotter, inland areas
- Lower targets in cooler, coastal communities

- Example pattern:
- Highest targets in hotter, inland areas
 - Lower targets in cooler, coastal communities

	Conservation Standard
	8%
	12%
	16%
	20%
	24%
	28%
	32%
	36%

Near-Term Actions: 2014-2015

- + State and federal water project operations drought contingency plan
- + Water rights curtailments: 9,218 water rights curtailed to date in 2015
- + Emergency Regulation for Mandatory Urban Water Conservation
- + Emergency assistance for small water systems & private well owners
- + Increased monitoring and reporting on groundwater conditions
- + Monitoring land fallowing and subsidence
- + Ongoing financial assistance programs
- + Delta Emergency Salinity Barrier



Save Our Water Program

- + Official state water conservation program administered by ACWA and DWR
- + Research-driven, consumer-focused public education helping residents reduce everyday water use
- + Complements local/regional efforts with turn key opportunities and tools
- + Funded primarily through emergency drought legislation



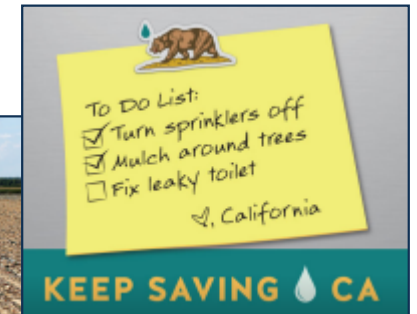
Public Education Summer and Fall 2015

- + Focus on outdoor/lawn water use reductions
- + Targeted media outreach in areas with highest mandatory conservation targets
- + Expanded paid media opportunities for agency partners
- + Fully updated toolkit – English & Spanish



What if Drought Goes into 2016 or Beyond?

- + “Raise the Bar” on urban conservation
- + Increase reliance on the market
 - + 1991 Drought Water Bank
 - + Australian experience
- + As the drought threatens the economy, market forces preferred to state regulation



What About the Longer-Term?

- + Implement the plan the governor has put on the table
- + Drought need not impair the California economy, if we continue to prepare
- + Will there be rationing?



California Water Action Plan

"In a Nut Shell"

1. Conserve more
2. Store more
3. Fix the Delta
4. Manage groundwater
5. Provide safe drinking water
6. Invest in habitat and watersheds

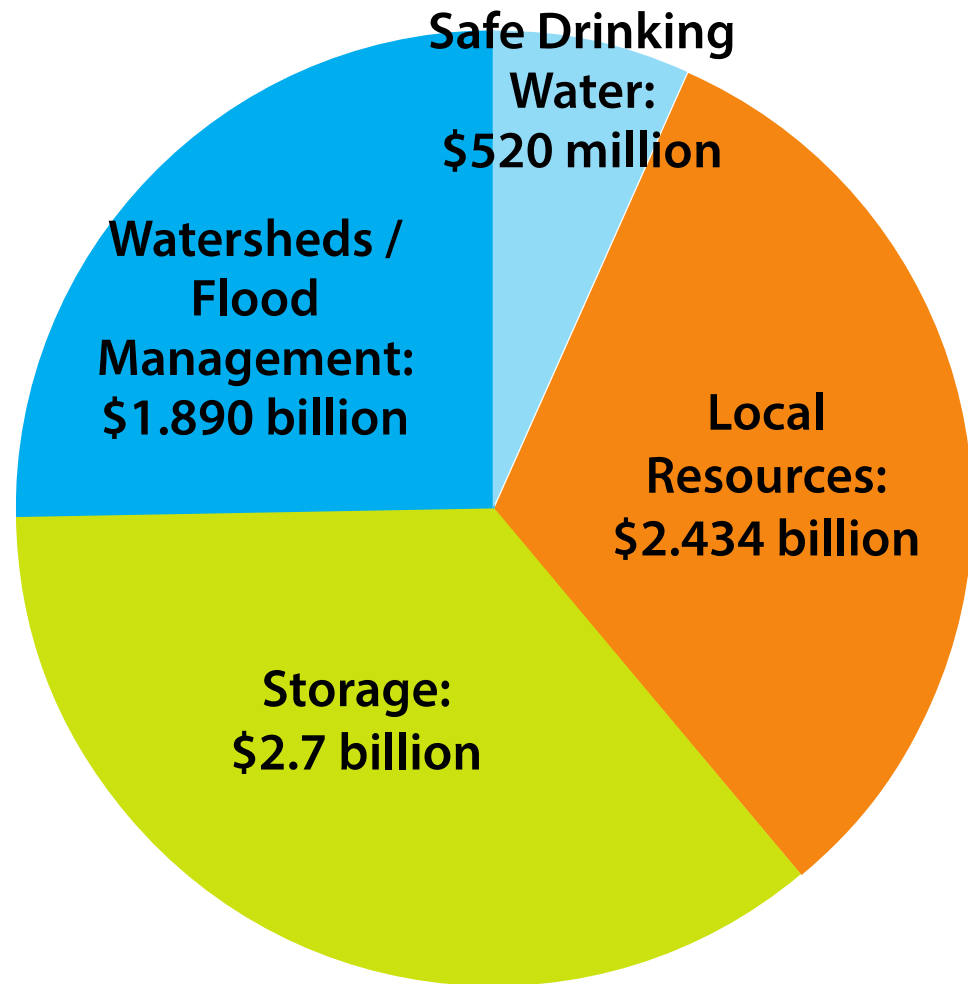


Proposition 1: Jumpstarting the California Water Action Plan

**Total
Expenditures =
\$7.545 billion**

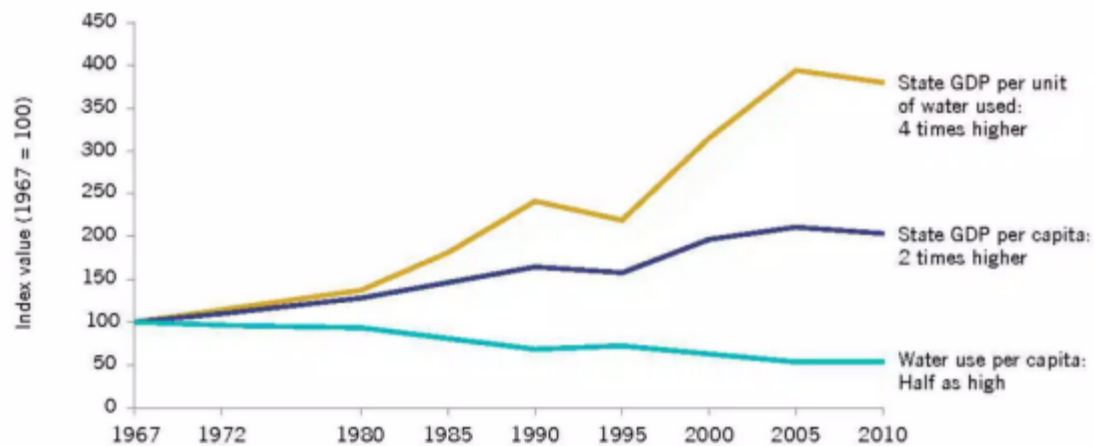
**Leverages
Local/Regional Funds
for Total Investment
Likely \$30+ billion**

**Passed by 67% of
voters in Nov. 2014**



Conserve More

...and the economic productivity of water use continues to rise



+ We need to continue past trends towards more productive water use

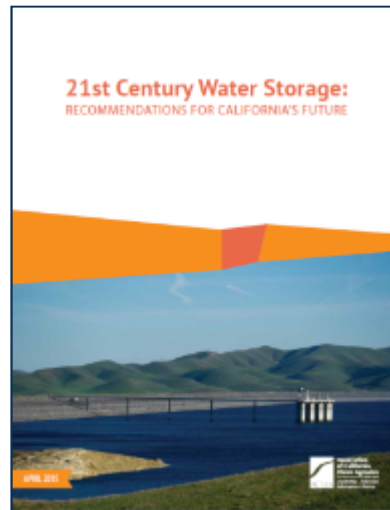
PPIC



Source: Data from DWR, DOF, and US Bureau of Economic Analysis (updated from Hanak et al, Water and California's Economy, PPIC, 2012)

Investing in Storage: Above and Below Ground

California
WATER COMMISSION



- + We increased storage capacity by 4 MAF+ in past 20 years
- + We need to do at least that in the next 20 years

Fix the Delta

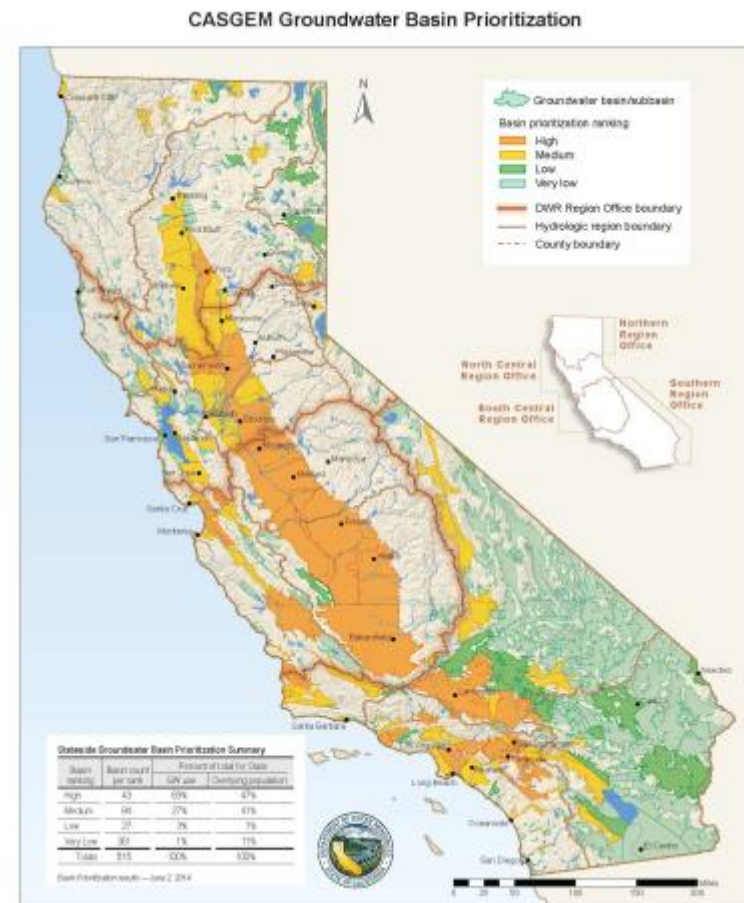
- + New approach to Delta: California WaterFix
- + Prop. 1 provides money for Delta improvements:
 - + **\$50 million** to Delta Conservancy
 - + **\$87.5 million** to the Dept. of Fish and Wildlife
 - + **\$295 million** to Dept. of Water Resources



Manage Groundwater

Sustainable Groundwater Management Act of 2014

- + Requires GW sustainability plans in high- and medium- priority basins
- + Authorizes management tools for local agencies
- + Creates state “backstop”
- + Defines time frame for accomplishing goals



Provide Safe Drinking Water

- + 2015 emergency drought relief package:
 - + Accelerates Proposition 1 funds for safe drinking water
 - + Provides funds for emergency drinking water for DACs



Investing in Habitats and Watersheds



- + Habitats and Watersheds are vital to the state's overall water system
- + Prop. 1 provides funding

Summing it Up

- + In the fourth year of drought, California's economy remains strong
- + We have a sound plan to make the needed long-term investments in water resource management
- + Now is the time to "work the plan" to meet the challenge of a prolonged drought or future droughts



Questions?

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