

2015-2016 Drought Case Studies

May 24, 2016

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Northern California Drought Coordinator

State Water Resource Control Board

Mission Statement

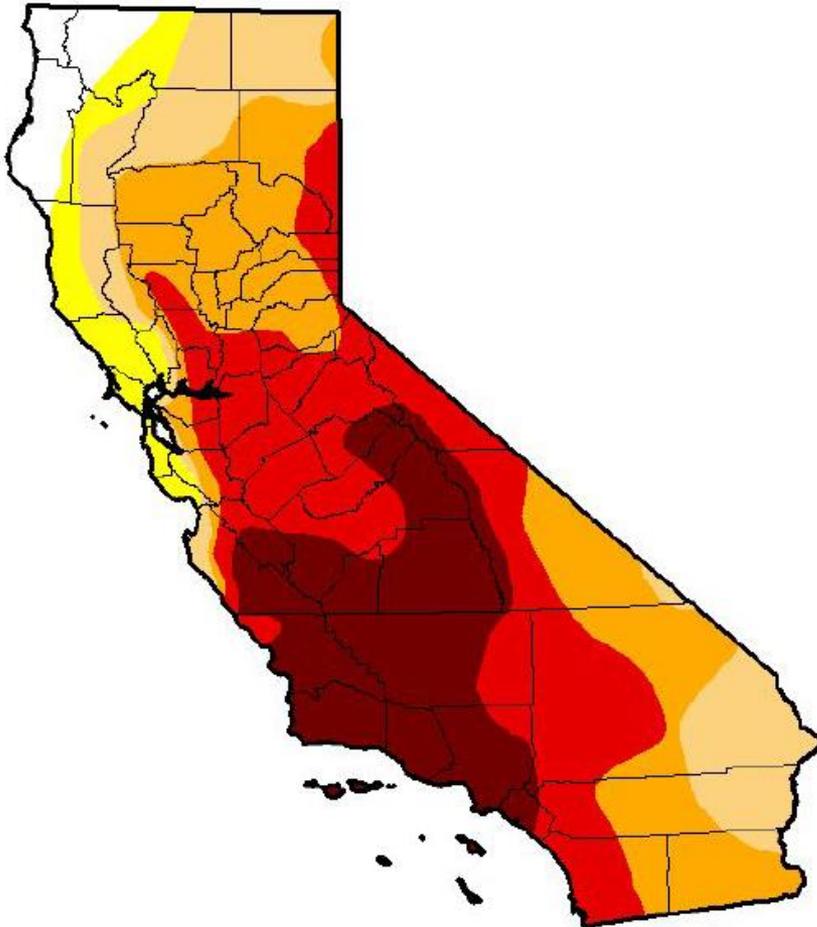
“To preserve, enhance, and restore the quality of California’s water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations.”

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Current Status - 2016

California



May 3, 2016

(Released Thursday, May 5, 2016)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	4.27	95.73	89.68	74.37	49.15	21.04
Last Week <i>4/26/2016</i>	4.24	95.76	90.09	74.37	49.15	21.04
3 Months Ago <i>2/2/2016</i>	0.00	100.00	95.26	86.13	63.90	39.41
Start of Calendar Year <i>12/29/2015</i>	0.00	100.00	97.33	87.55	69.07	44.84
Start of Water Year <i>9/29/2015</i>	0.14	99.86	97.33	92.36	71.08	46.00
One Year Ago <i>5/5/2015</i>	0.14	99.86	98.28	93.91	66.60	46.77

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

What Constitutes Using Drought Funds?

- Well Outage *Upload to DWD →
- Low Flow Surface Water Source or Reservoir Level Below Pump Intake
- Water Quality Spikes
- Failed Pump
- Federal Minimum Supply
- Fire Damage due to dry vegetation
- *Subsidence, Contamination or Bacteriologic Positives

<https://mydrywatersupply.water.ca.gov/report/>



Drought Funding Process

- http://www.waterboards.ca.gov/water_issues/programs/grants_loans/caa/dw_droughtfund/
- Reach out to your Regulatory Agency (LPA or DDW District Office)
- Using online FFAST Portal: <https://faast.waterboards.ca.gov/>
- Identify Problem Urgency and/or Violation of Compliancy
 - Supplementing Drinking Water to Residents or PWS if Necessary*
 - Emergency Notification Plan Use If Necessary*
- **D**etermine Which Funding Program is Best Choice for Situation
- **R**ecord Conservation Efforts & Timeline
- **I**dentify Accuracy of Production Data & water allocation per Capita
- **E**valuate Water Rates
- **D**ocument any Unrestricted Financial Reserves Available for use

Applicant: Pubic Water System with:
≥ 15 Service Connections
or 25 yearlong residents

SWRCB Division of
Drinking Water
District Engineer/LPA

Bottled or bulk water for
drinking in coordination with
County OES/OEM.

http://www.waterboards.ca.gov/drinking_water/programs/documents/ddwem/DDWdistrictofficesmap.pdf

EMERGENCY DROUGHT WATER SUPPLY WORKGROUP

Solutions for Community Water Systems

State Water Resources Control Board

EMERGENCY

Cleanup and Abatement (CAA)
Interim Emergency Drinking Water Fund
& PWS Drought Emergency Response

http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/DroughtPreparedness.shtml

LONG TERM

Infrastructure Funding/Proposition 1
http://www.waterboards.ca.gov/water_issues/programs/grants_loans/proposition1.shtml

Non-emergency funding programs
http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/DWPfunding.shtml

SOLUTIONS

Long Term

- Consolidation
- New Well
- New Treatment
- New Distribution Main
- Distribution System Laterals
- Water Meters (to establish rates)

Either

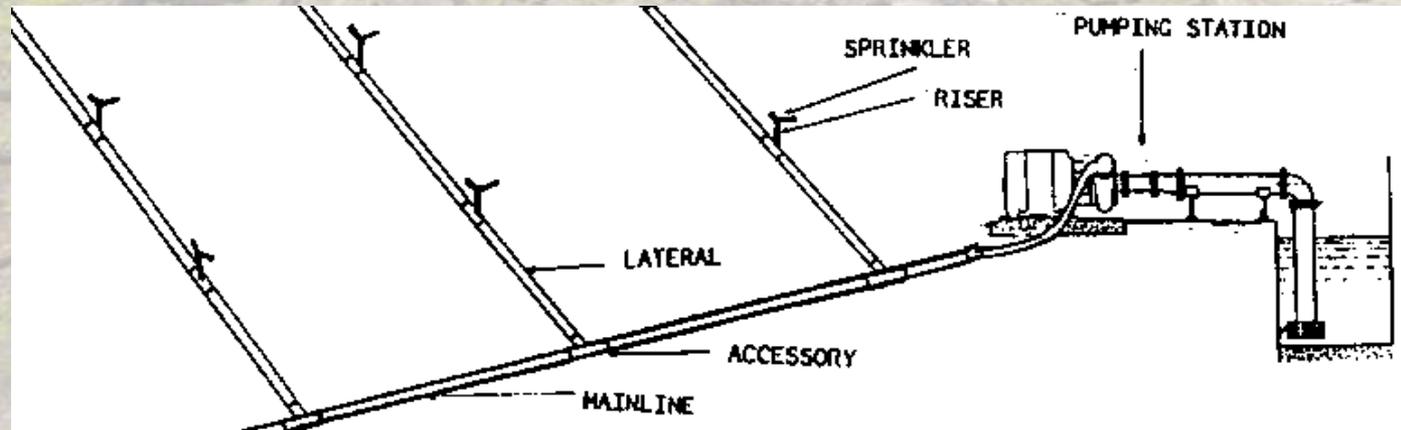
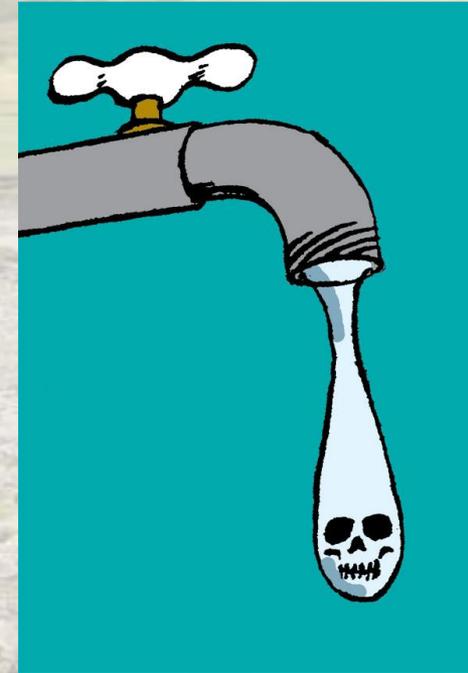
- Point of Use Devices or Point of Entry Devices (POE & PUD)
- New Intertie Established
- Hauled Water to PWS
- Rehab Well
- Pump Replacement, Submersible Pump(s)
- Lower Pump Intake

Short-Term

- Hauled Water to Residents
- Bottled Water Delivery
- Salt Intrusion Barriers
- Vending Machines

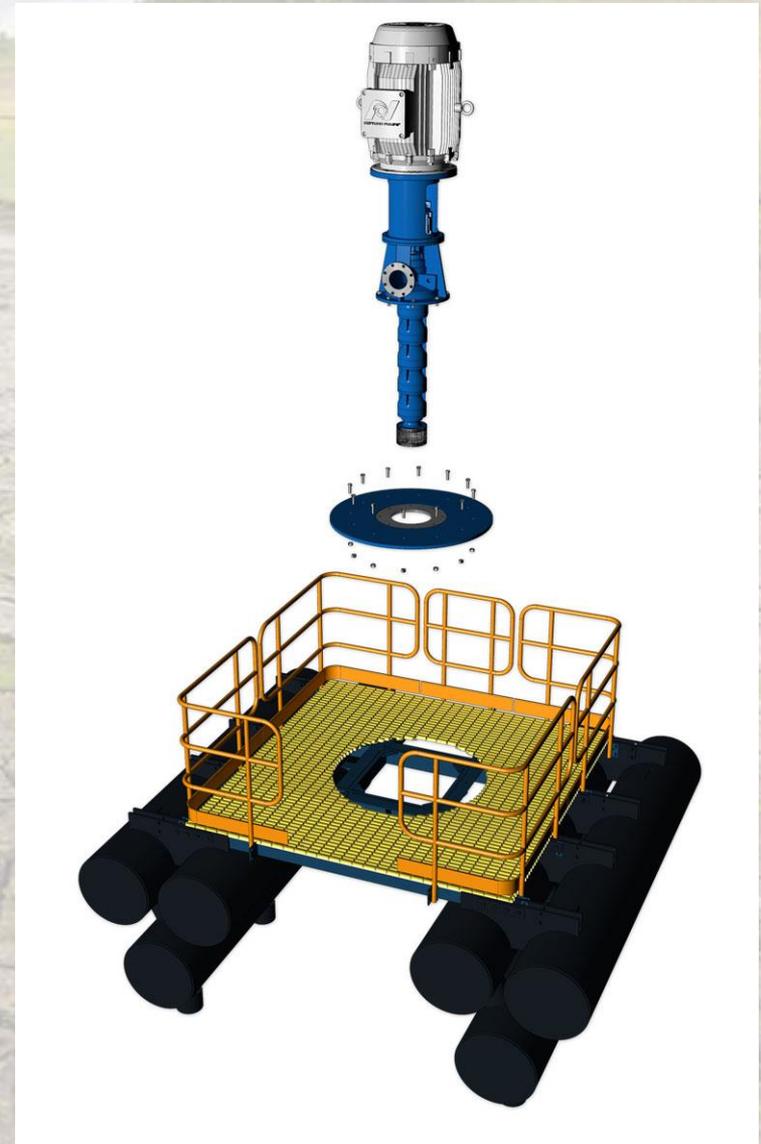
Success Stories: Tuolumne Utility District

- Situation: County Dry Wells at Concentrated Area where Individual Well Owners. Extensive Monitoring for Nitrate & Arsenic
 - Arsenic High levels (80-790 ppm > 10 ppm MCL)
- Action: Extending Main Distribution System to Quartz & Stent Area



Success Stories: Don Pedro Reservoir

- Situation: Don Pedro Reservoir Level Dropped substantially Resulting in Reduced Capacity
- Interim Solution: Floating Barge Pump extended out to access water
- Long-term Solution: Purchased Property Locally with Well Extensions paid & Drilled 3 Other Wells
- Status: Rainfall has brought Levels up to 69% Capacity in May 2016



Challenging Studies: East Porterville

- Situation: Dry sources required new well approval & well Operation Obstacle following Multi-Agency funded construction.
- Interim Solution: Decide on New Trajectory, Fill Tank Accessibility
- Action: Agreement Reached with County to Operate
- Result: Distribution Lines Currently Underway with Simultaneous Delivery of Bottled Water



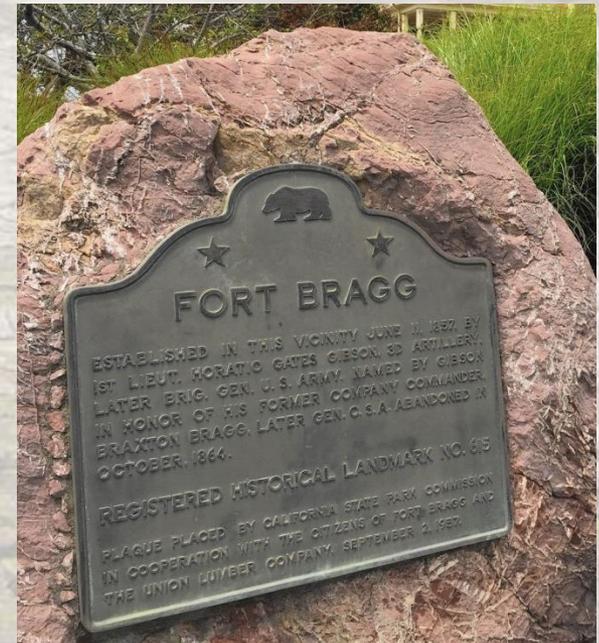
Challenging Studies: Tulare County

- *Situation:* Many households with private wells have dried up due to the drought. Additionally the Area has Nitrate and Arsenic Contamination.
- *Interim Solution:* Bottled water is being supplied to households suffering from contamination or drought related emergency to serve their drinking needs. Many households are also supplied sanitary water through the County of Tulare Household tanks program.
- *Status:* Multi-Agency Funded Project – Currently Serving Bottled Water & Hauled Water.



Deferred Studies: Fort Bragg

- October 2015 – Public Drought Notice
- Immediate Response to Request for Hauled Water
- Meeting to Discuss Conditions of Drought Status
- Situation: Seasonally the Turbidity Alarm Shuts Down Plant as Ocean Water Infiltrates the River Intake Point
- Latest Action: Salt Buoy Barrier Utilized for Seasonal Need & Reservoir Evaluation for Long Term Solution



Deferred Studies: Knight's Landing

- Failed Well – Contacted State Sanitary Engineer for Inspection
- Second of Three Wells Failed following month
- Leaving Only 1 source Automated, One source active Manually (
- Situation: DAC with Flat Meter Rates = Unsustainable Rate
Structure High Water Usage
- Next Action: Bring City Board New Rates to Approve per Agency
Funding Requirements
- Interim Solution: Submersible
Pump at Wellhead with
Portable Chlorine Injection



Emergency Response to Fires

- Office of Emergency Services Collaborative Efforts with Multi-Agency Support (4,200 people Responded to the Victims)
 - Lake County Fire > 1000 Structures & Homes destroyed 3000 people displaced
 - Calaveras Fire (Butte fire) - \$90 MM Damages



Water Right Curtailments, Compliance Orders, & Effects

- Water Right's Tiered Permitting Years After Pre-1914
- Water Right's Announces Curtailed Sources
 - Announcements made:
http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml
- Curtailed Source List Cross Reference with each District's Public Water Systems
- Identify Alternative Sources, Methods to Meet Demand
- Directives for Source Capacity Study Submission during Drought Conditions in form of Compliance Orders

Calaveras Public Utility District

- Water Right Middlefork
 - Pre-1914 Claim Submit to Water Rights
 - Objective: Can Demand can be met during Curtailed Right without resolution to dispute in turn lifting 2014 Compliance Order Connection Moratorium.
- Jeff Davis Reservoir Capacity Considered
- Result: Drought Source Capacity Study Completed by DDW to Lift Moratorium

A landscape photograph showing a dry, cracked riverbed in the foreground. The ground is dark and fissured, with small patches of green grass. In the middle ground, there is a grassy field with a few scattered trees and a small stream. The background features rolling hills and mountains under a cloudy sky.

QUESTIONS?

Reservoir Levels (% capacity)*

Castaic Lake 63%; Don Pedro 74%; Exchequer (Lake McClure) 56%; Folsom Lake 86%; Lake Oroville 95%; Lake Perris 35%; Lake Shasta 92%; Millerton Lake 63%; New Melones 26%; Pine Flat 63%; Lake San Luis 38%; Trinity Lake 58%.

*As of May 23, 2016

Vulnerable Water Systems

The State Water Board continues to provide technical and funding assistance to several communities facing drinking water shortages and is monitoring water systems across the state. Since January 2014, 113 out of the 151* projects approved to receive emergency funding for interim replacement drinking water have been executed.

*As of April 14, 2016

Dry Well Count*	
Coastal	11
Inland	1,982
Southern	173
Total Count	2,166

*As of May 12, 2016, taken directly from
DWR's dry well database at

<https://mydrywatersupply.water.ca.gov>



A series of webcam photos of Half Dome in Yosemite National Park, taken each mid-March from 2012 to 2015, then again on April 7, 2016, vividly illustrates the effects of the multi-year drought.
Credit: Yosemite Conservancy

Drought Task Force Meetings

Inland Region		
County	Previous Meetings	Upcoming Meetings
Butte	6/17/2015	TBD
Colusa	5/18/16	TBD
Glenn	7/29/2015	TBD
Kern	6/04/2015	TBD
Kings	9/24/2015	TBD
Madera	5/18/16	TBD
Merced	4/21/2016	5/26/16
Modoc	2/12/2014	TBD
Nevada	10/29/2014	TBD
Placer	4/20/2015	TBD
Plumas	8/03/2015	Suspended/TBD
Sacramento	9/03/2015	TBD
San Joaquin	3/2/2016	6/1/16
Siskiyou	5/22/2014	TBD
Stanislaus	8/20/2015	TBD
Sutter	10/08/2015	TBD
Tehama	7/29/2015	TBD
Trinity	7/08/2015	TBD
Tulare	5/9/2016	TBD
Tuolumne	4/13/2016	TBD
Yolo	11/06/2014	TBD

Coastal Region		
County	Previous Meetings	Upcoming Meetings
Hoopla Valley Tribe	12/15/2015	TBD
Hopland Tribe		TBD
Humboldt	1/20/2016	TBD
Karuk Tribe	12/15/2015	TBD
Lake	8/20/2015	TBD
Mendocino	10/30/2014	TBD
Monterey	6/03/2015	TBD
Napa	5/15/2015	TBD
San Francisco	8/11/2014	TBD
San Mateo	12/16/2015	TBD
Santa Clara		TBD
Sherwood Valley Tribe	11/01/2014	TBD
Solano		TBD
Trinidad Tribe	12/15/2015	TBD
Yurok Tribe	11/17/15 (Inter-Tribal)	TBD
Southern Region		
La Jolla Band/Luiseno		As needed
Orange	4/21/16	TBD
San Luis Obispo	5/18/2016	TBD
Santa Barbara	4/13/2016	10/12/16

	Counties	Tribes
Totals	33	7

Updated May 12, 2016