

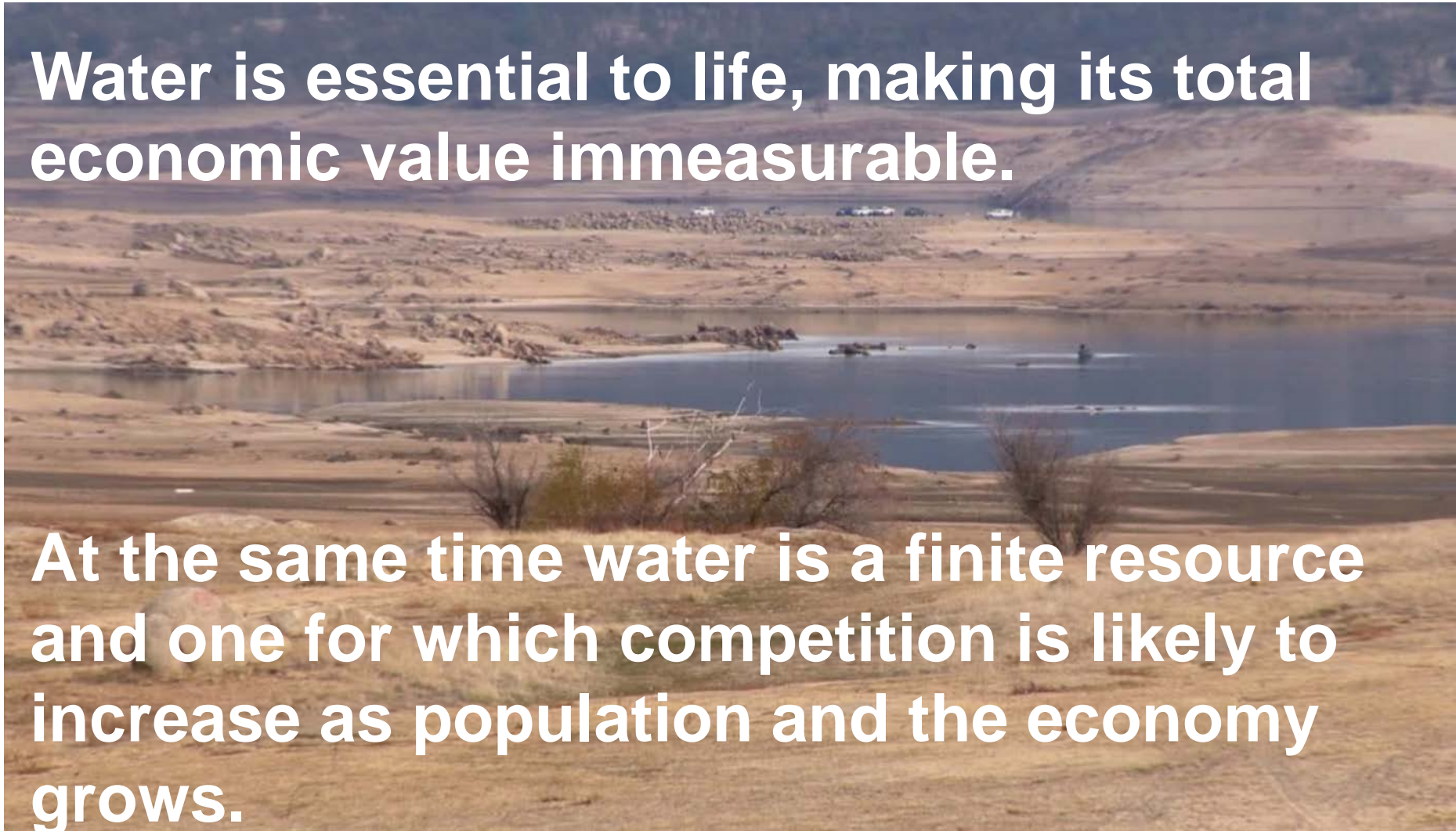
2014 EXTREME CALIFORNIA WATER DROUGHT

**California Area Indian Health Service
Tribal Leader's Meeting
March 12, 2014**

2014 Extreme California Water Drought

Water is essential to life, making its total economic value immeasurable.

At the same time water is a finite resource and one for which competition is likely to increase as population and the economy grows.



2014 Extreme California Water Drought

Based on conditions on the ground in early 2014, the state appears to be in the most severe drought on record following two consecutive dry years in 2012 and 2013.

Other notable droughts include a prolonged dry spell from 1923-1924 and an extremely dry span in 1976-1977.

Will The Drought Impact Water Supplies?

- Folsom Lake in February 2014



WATER



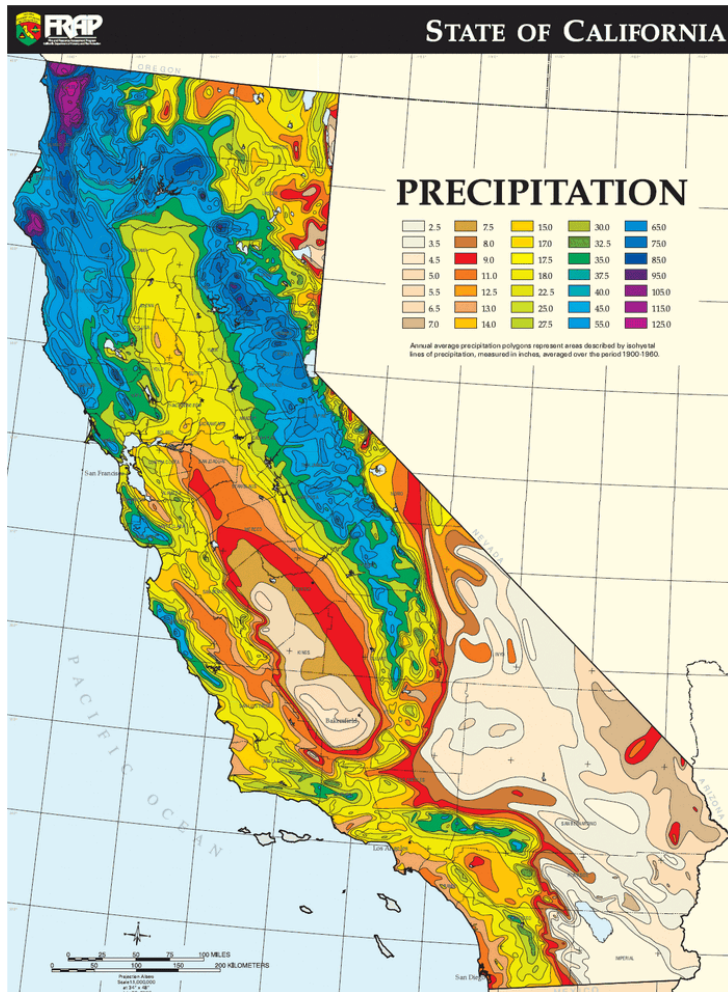
- *How can we get more of it?*

- *How can we use less of it?*

2014 Extreme Water Drought Presentation

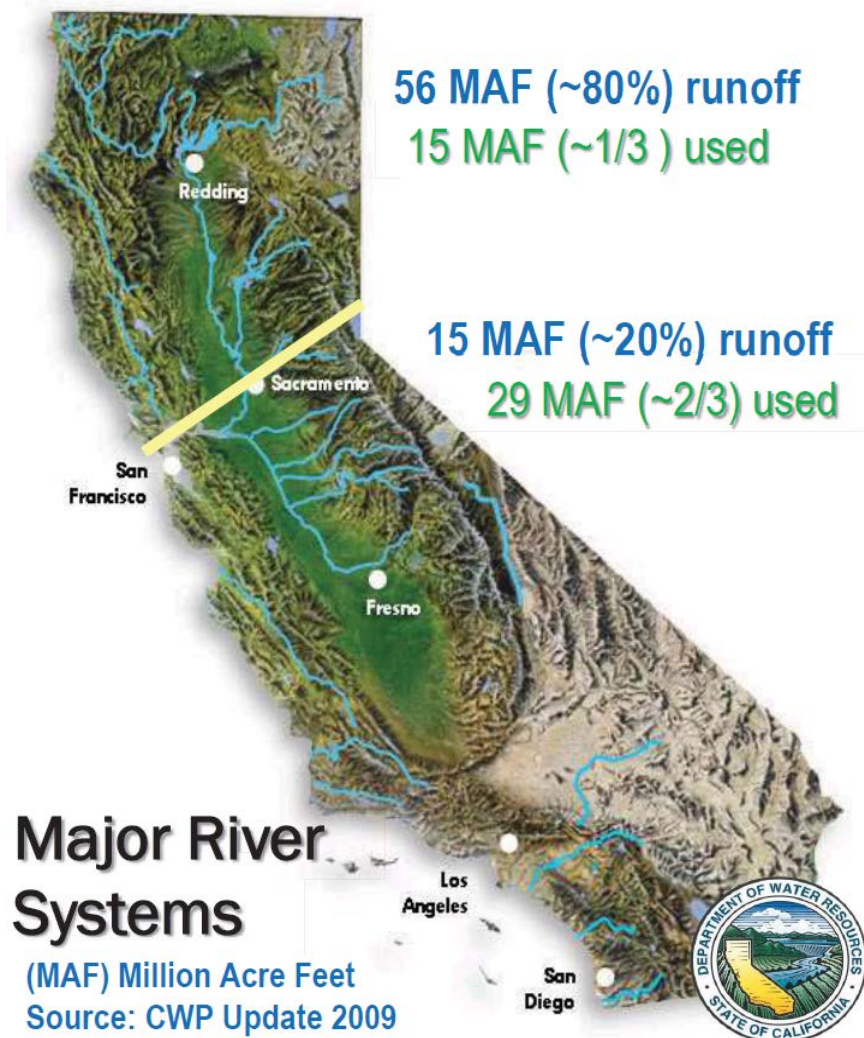
- **California's Water System**
- **Current Hydrologic Drought Conditions**
- **Tribal Water Systems At Risk**
- **Tribal Water Systems Drought Assessment**
- **Impact on Health and Lifestyle**
- **Drought Preparedness and Assistance**

What You Need To Know



- In average years, close to 200 million acre-feet (MAF) of water falls in the form of rain or snow in California.
- One acre-foot is about 326,000 gallons, or enough water to supply two typical families for a year
- Most of the rain and snowfall occurs between October and April, while demand is highest during the hot and dry summer months.

Facts About California's Water System



- Over half of that water soaks into the ground, evaporates or is used by native vegetation. That leaves somewhere around 82 million acre-feet of usable surface water in average years. Of that water:
 - 48% goes to environmental uses such as in stream flows, wild and scenic river flows, required Delta outflow and managed wetlands.
 - 41% is used by agriculture
 - 9% is used by cities and industry.
- About 75% of California's available water occurs north of Sacramento, while about 80% of the demand occurs in the southern two-thirds of the state.

Groundwater provides about 40% of the state's water supply. In dry years, that percentage can go as high as 60%.

Number 1

Water Facts

State of California
The Resources Agency
Department of
Water Resources

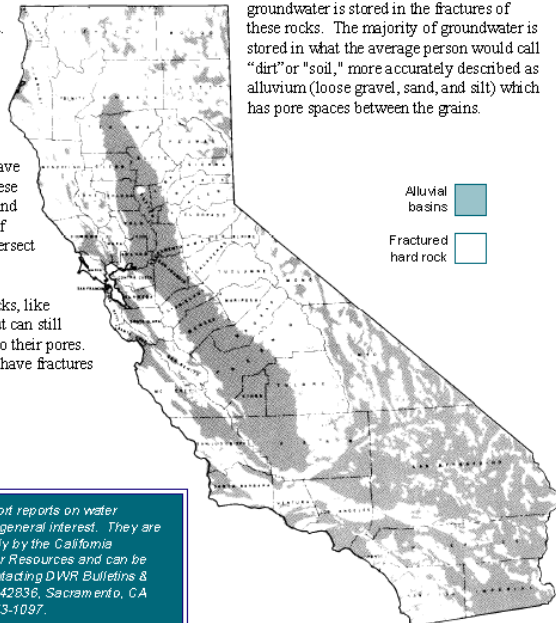


Ground Water in Fractured Hard Rock

In many mountainous areas of California we can find groundwater in the cracks or fractures of hard rocks, such as granite, greenstone, and basalt. The water does not actually penetrate the rocks, because there is no pore space between the grains of the rock. However, some of these rocks have fractures in them. These fractures store water and yield small amounts of water to wells that intersect the fractures.

Some sedimentary rocks, like sandstone, are hard but can still absorb some water into their pores. These rocks may also have fractures that contain water.

About 60 percent of California is composed of hard rocks. However, only a small quantity of groundwater is stored in the fractures of these rocks. The majority of groundwater is stored in what the average person would call "dirt" or "soil," more accurately described as alluvium (loose gravel, sand, and silt) which has pore spaces between the grains.



Water Facts are short reports on water resources issues of general interest. They are published periodically by the California Department of Water Resources and can be obtained free by contacting DWR Bulletins & Reports, P. O. Box 342836, Sacramento, CA 94236-0001; 916/653-1097.

How much water is stored in hard rock?

The volume of water stored in fractured hard rocks near the surface is estimated to total less than 2 percent of the rock volume. This percentage decreases with depth as fractures become narrower and farther apart. The total amount of water in storage in the rocks surrounding a hard rock well is small, so that groundwater levels and the well's yield can decline dramatically during the summers of dry years.

The volume of water stored in many alluvial soils can amount to 10-15 percent of the volume of the alluvium. In areas where alluvium overlying the hard rock is saturated with water, the alluvium provides additional water storage for nearby wells in the hard rock. This situation most often occurs in valleys or meadows.

How much water will your well yield?

Half of all hard rock wells yield 10 gallons per minute or less, which is only enough for individual domestic supplies. When conditions are good, wells drilled in fractured rock may yield several hundred gallons per minute when pumped. Good conditions include:

- ☐ large amounts of fractures;
- ☐ good interconnection between fractures;
- ☐ wide, large, clean fractures;
- ☐ a source of recharge;
- ☐ a large quantity of water in storage; and
- ☐ proper installation of the well, including removal of granular debris that may clog the fractures.

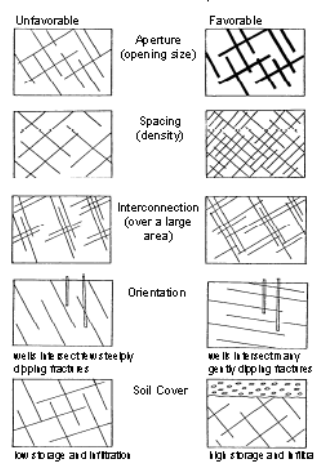
Some wells may be dry if the above conditions are not met.

How do you know if you'll get a high-yielding well?

You don't. While exploration of the site may help to assure a high-yield well in fractured rock, you will still face some trial and error that you seldom face when drilling in an alluvial aquifer. Wells that are drilled close together in alluvial aquifers will probably have similar yields. However, wells drilled close together in hard rock may not have similar yields. You have to be able to drill to a very specific point in a major fracture zone that has a lot of water in it. The water must also be continuously recharged. If these conditions aren't met, then you can easily have a dry hole that is drilled right next to a producing well.

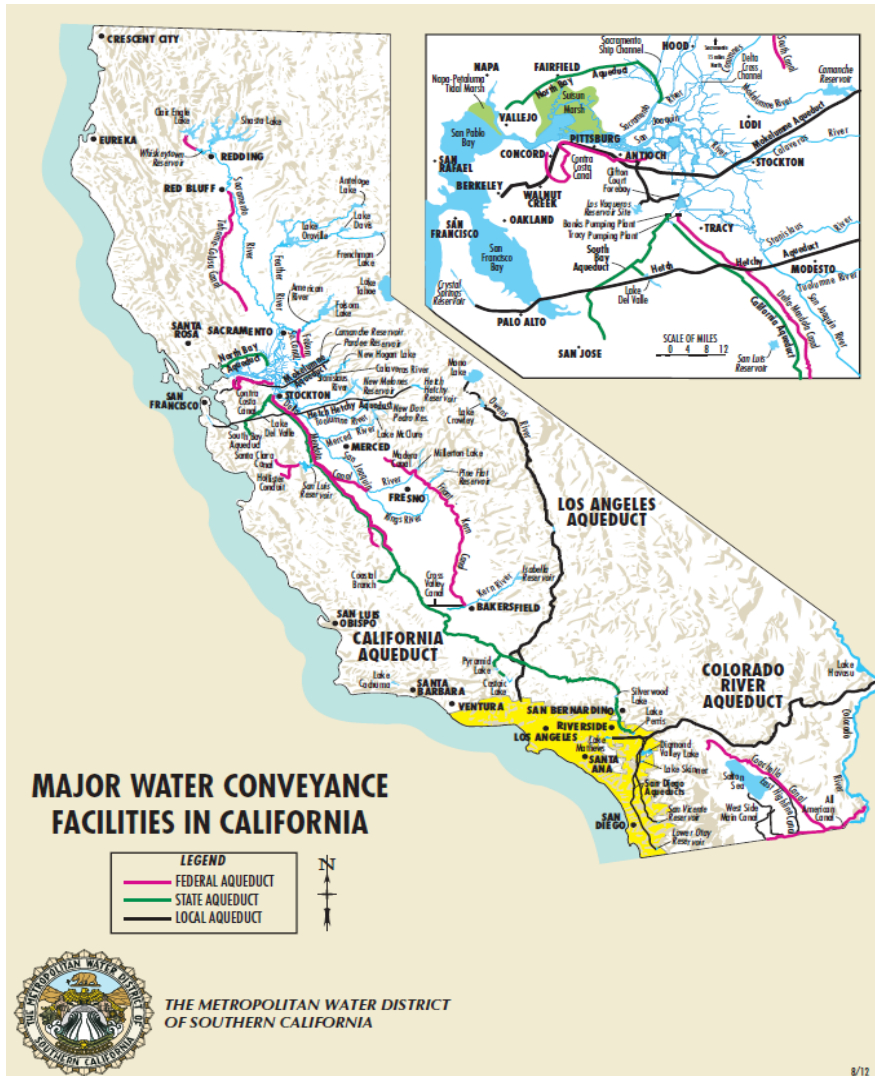
Also, keep in mind that a neighboring well can interfere with your well. How much water passes through fractured rock varies greatly depending on connections between fractures. As a result, interference between neighboring wells is difficult or impossible to predict in advance. The best insurance against such problems is large lot sizes. A 3- to 5-acre lot will be adequate in most cases.

Fracture System Characteristics Controlling Ground Water Development



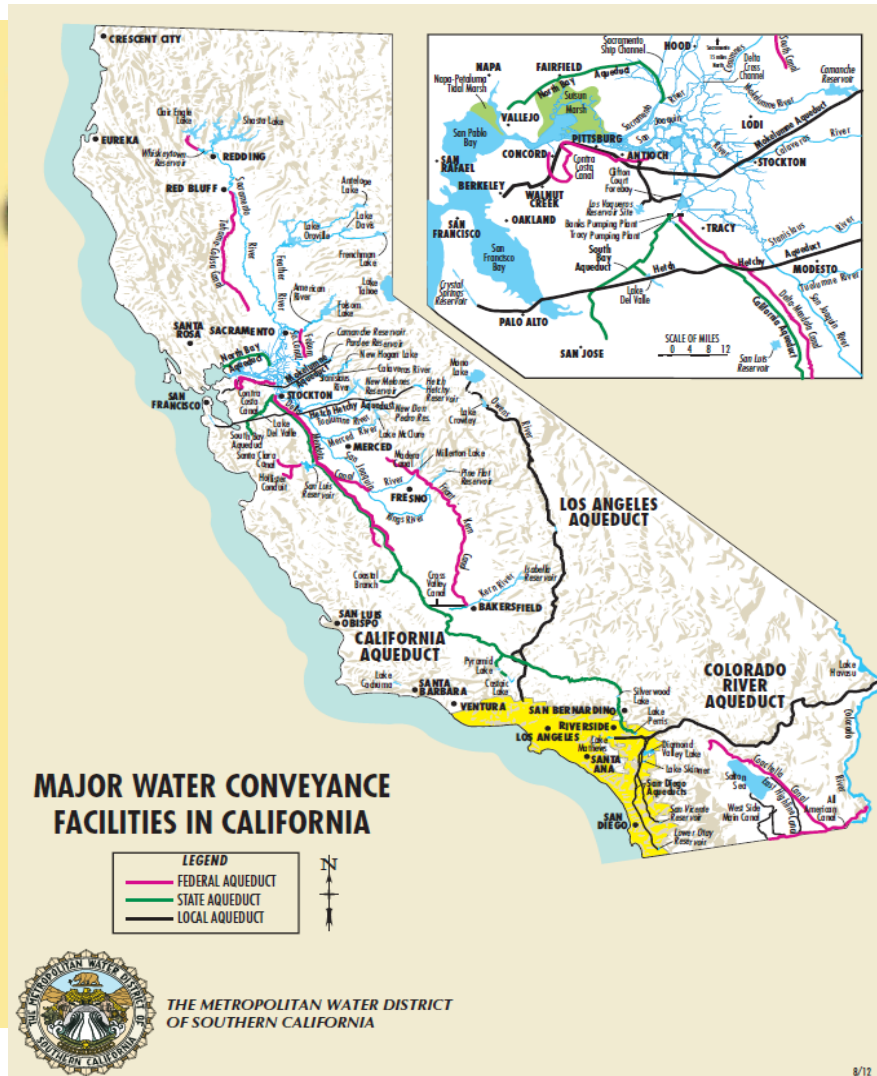
Fracture Characteristics Controlling Groundwater Availability

California Water Delivery System



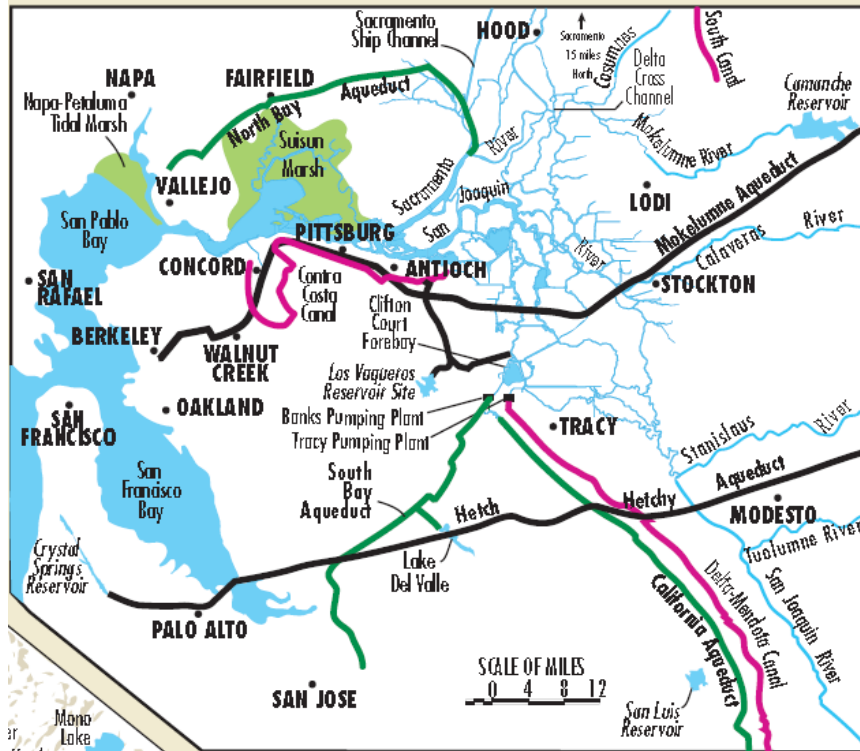
- California's communities, farms and businesses rely on water from a variety of sources. Surface water projects, which capture and deliver rain and snow, provide major portion of the state's total water supply.
- The projects include more than 1,000 federal, state and local reservoirs and hundreds of miles of canals and pipelines.

California Water Delivery System



- Key water projects and the amount of water they deliver:
 - Central Valley Project (federal). Delivers about **7 million acre-feet (MAF)** per year. Constructed in 1930s - 1950s.
 - State Water Project (state). Delivers about **2.5 MAF/year**. Constructed in 1960s – early 1970s.
 - All-American Canal (local). Delivers **3 MAF/year**. Constructed in 1930s.
 - Colorado River Aqueduct (local). Delivers **1.2 MAF / year**. Completed in 1941.
 - Los Angeles Aqueduct (local). Delivers **200,000 AF/year**. Completed in 1913.
 - Mokelumne Aqueduct (local). Delivers **364,000 AF / year**. Completed in 1929. Second aqueduct completed in 1949.
 - San Francisco Hetch Hetchy Project (local). Delivers **330,000 AF/year**. Completed in 1923.

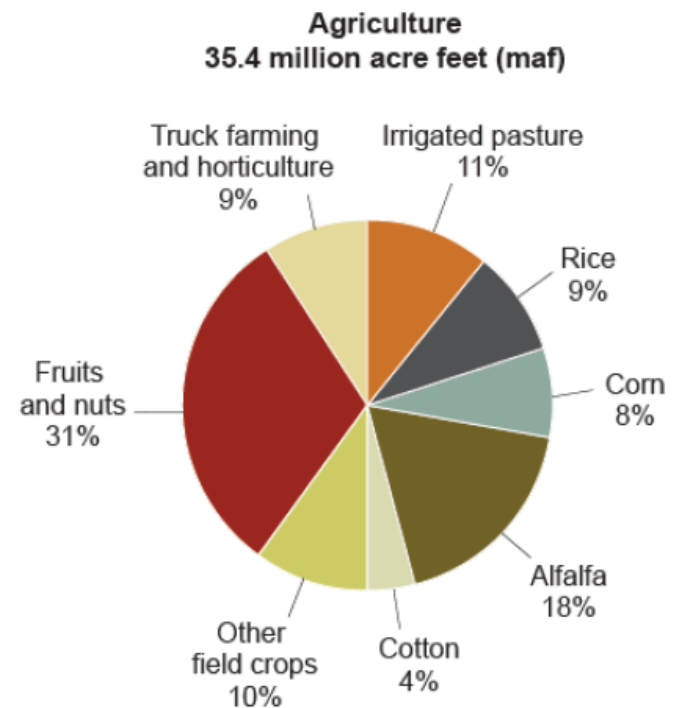
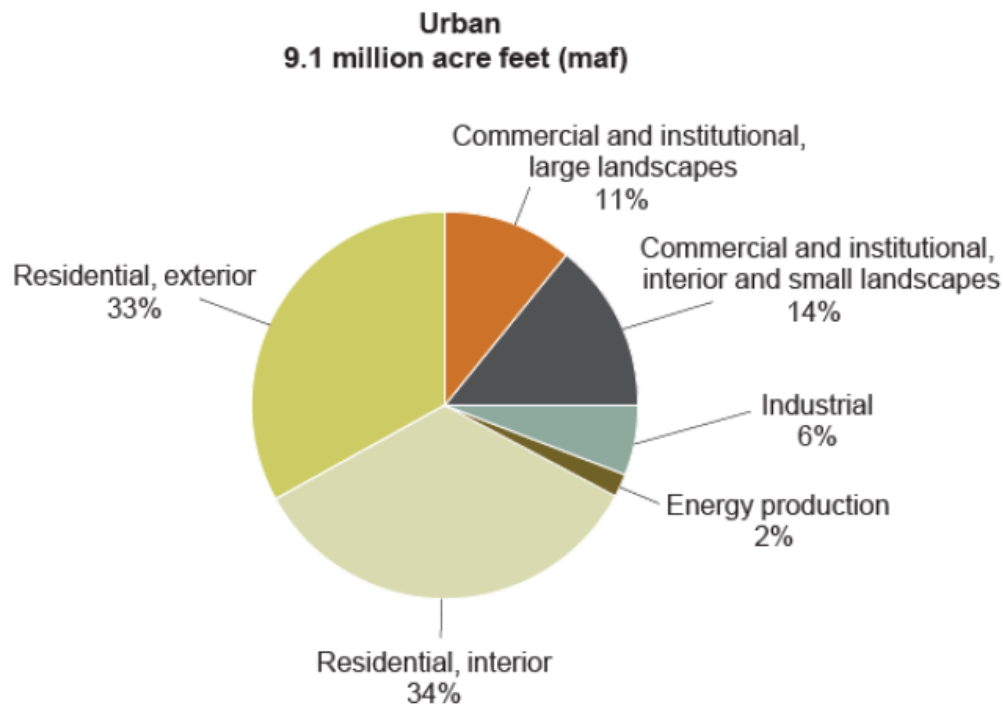
Heart of California's Water System



The Central Valley Project (CVP) and the State Water Project (SWP) bring water from Northern California through the Sacramento-San Joaquin River Delta for delivery to users in the San Joaquin Valley, parts of the San Francisco Bay Area and Southern California.

Water Use

Both the urban and farm sectors will need to find places to save water during this drought

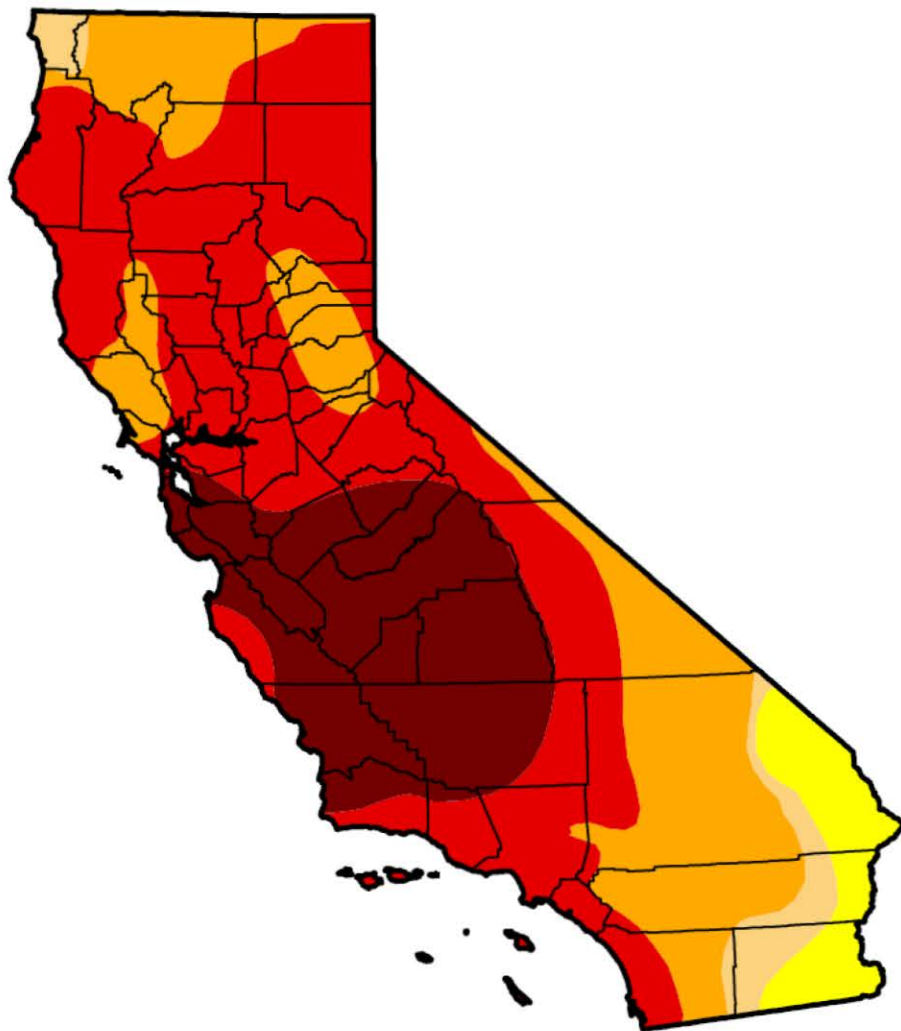


Source: California Department of Water Resources.

Current Hydrologic Conditions



U.S. Drought Monitor California



March 4, 2014

(Released Thursday, Mar. 6, 2014)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	94.56	90.82	65.89	22.37
Last Week 2/25/2014	0.00	100.00	94.56	90.82	73.83	26.21
3 Months Ago 12/3/2013	2.61	97.39	94.15	82.53	27.59	0.00
Start of Calendar Year 12/31/2013	2.61	97.39	94.25	87.53	27.59	0.00
Start of Water Year 10/1/2013	2.63	97.37	95.95	84.12	11.36	0.00
One Year Ago 3/5/2013	0.03	99.97	47.37	26.96	0.00	0.00

Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

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

Author:

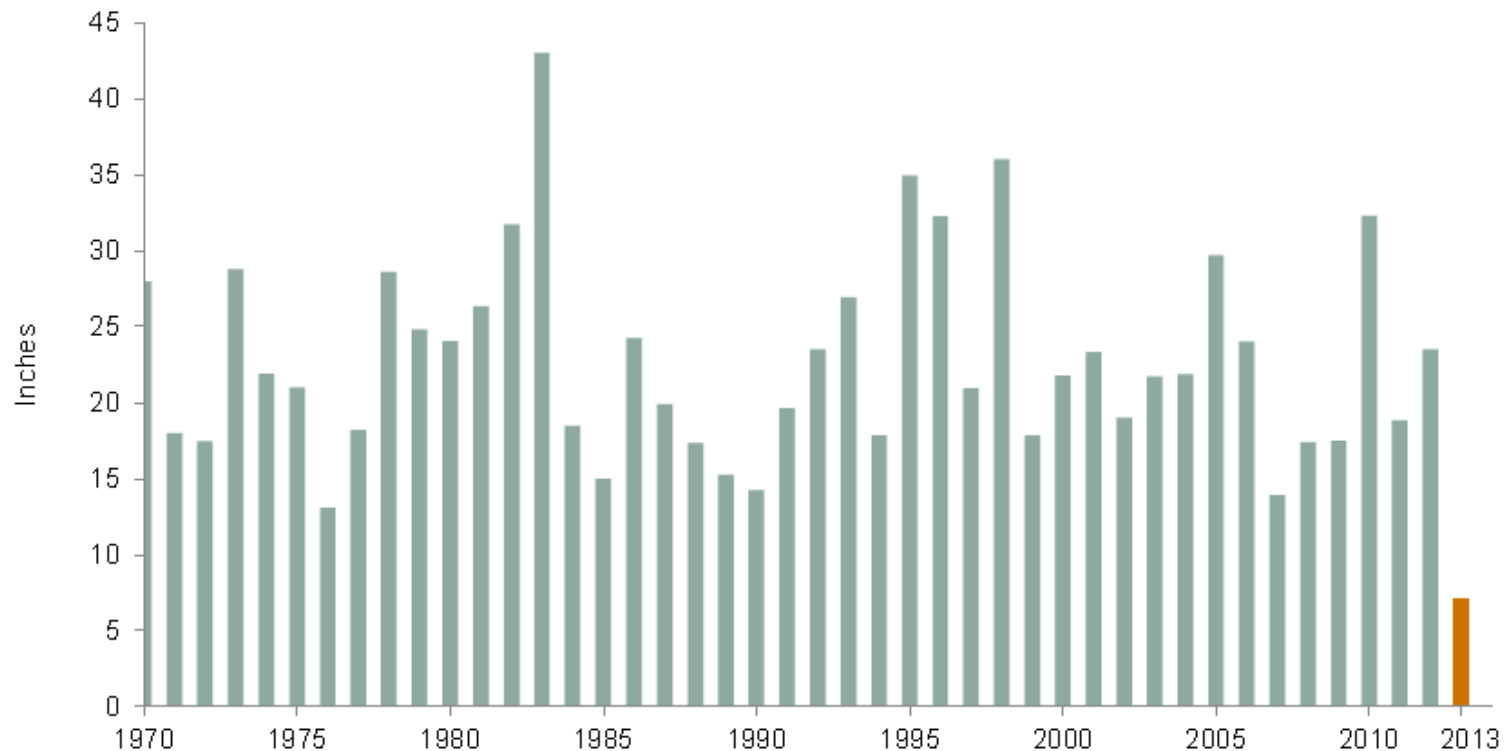
Brad Rippey

U.S. Department of Agriculture



<http://droughtmonitor.unl.edu/>

2013 was the driest calendar year on record



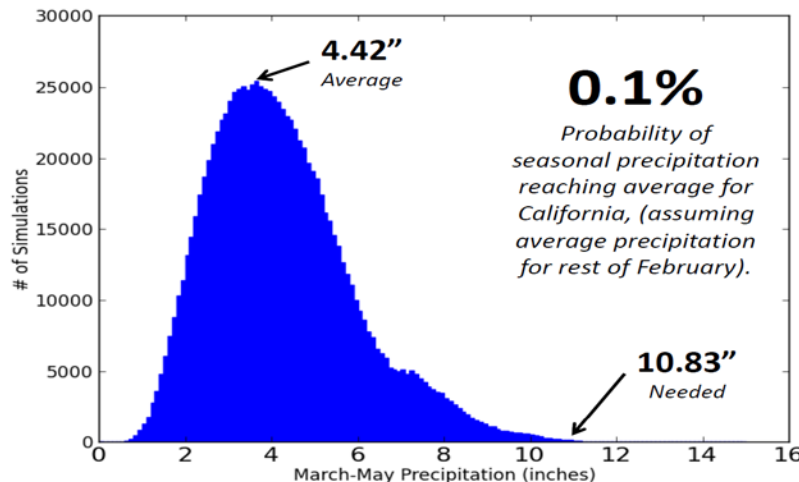
Source: Western Regional Climate Center.

Note: Statewide average precipitation in California based on calendar year (January-December).

Drought Outlook - Anyone's Guess

Is “average” possible this year in CA?

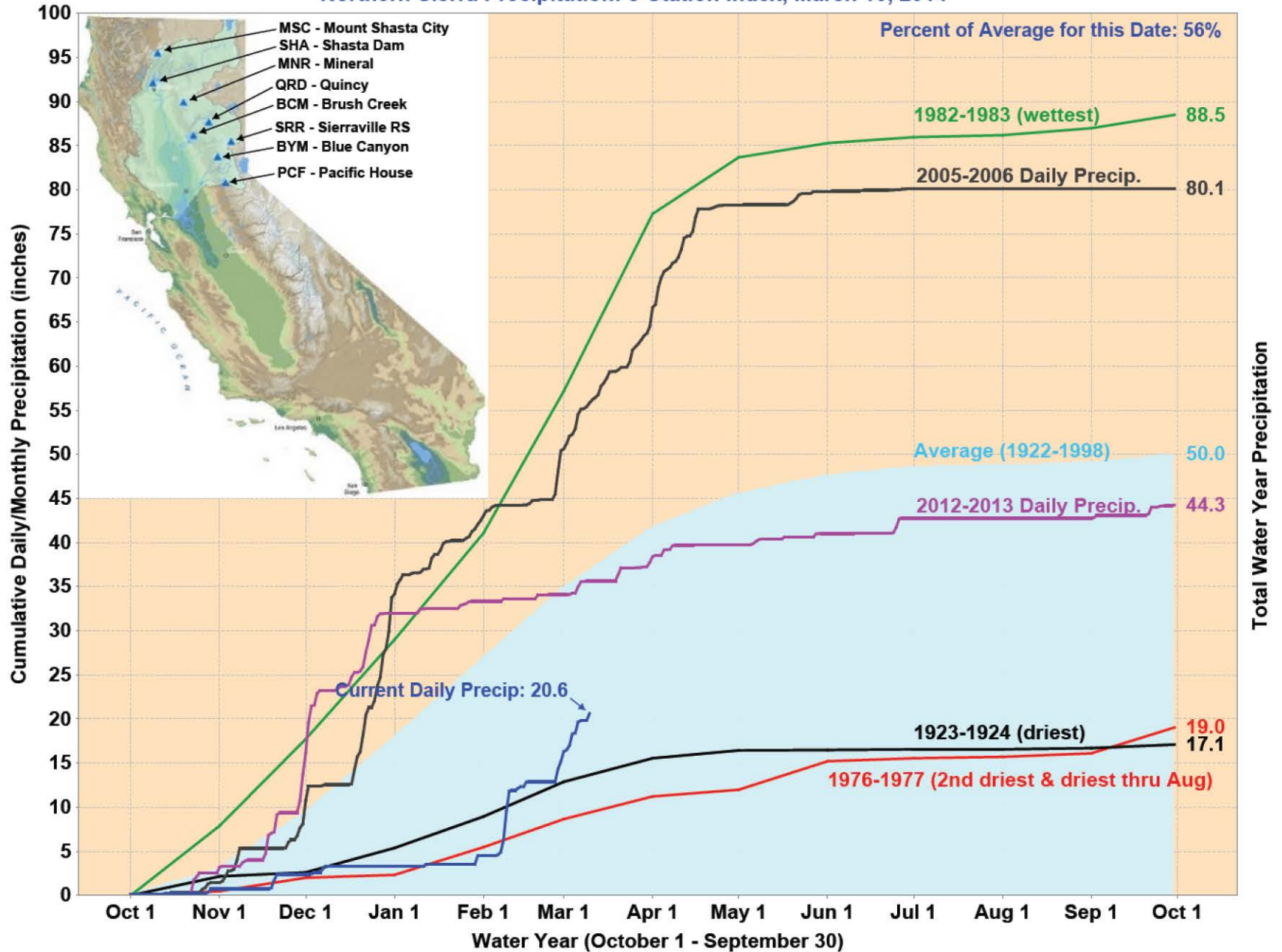
1 Million Simulations of Mar-May Precipitation in CA
Based on Historical Data



A El Nino watch was issued by NOAA for the Fall of 2014.

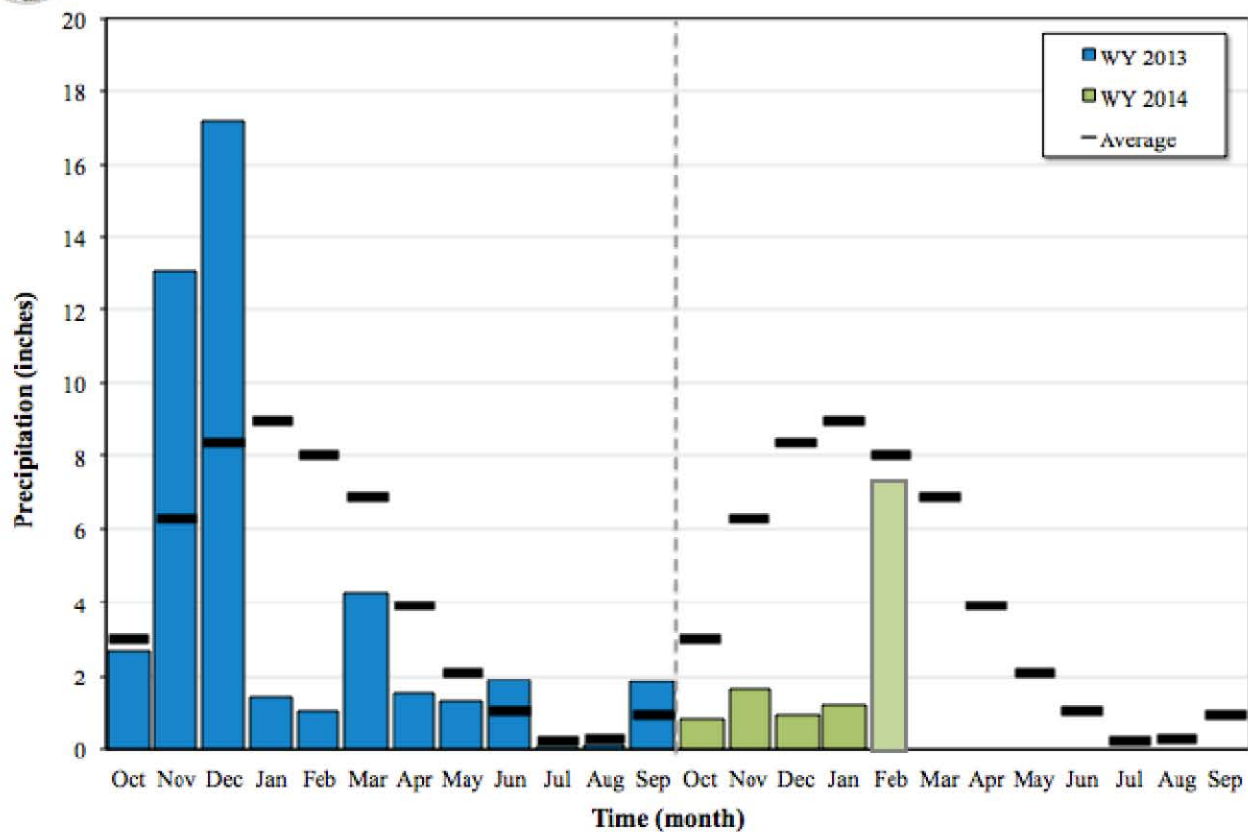
- 52% probability of El Nino developing
- 41% chance of conditions remaining neutral.

Northern Sierra Precipitation: 8-Station Index, March 10, 2014

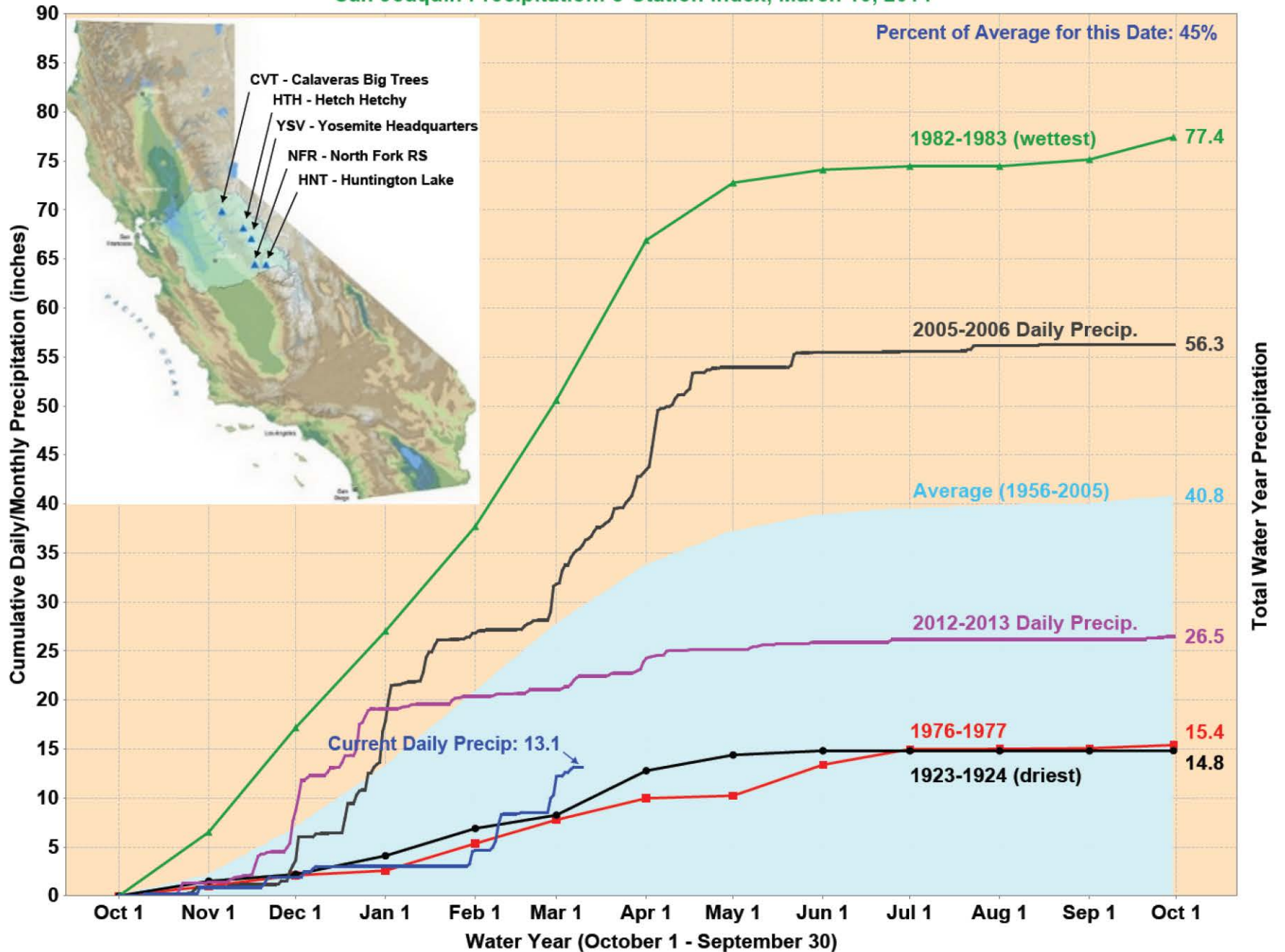




Northern Sierra 8 Station Precipitation for Water Years 2013 and 2014



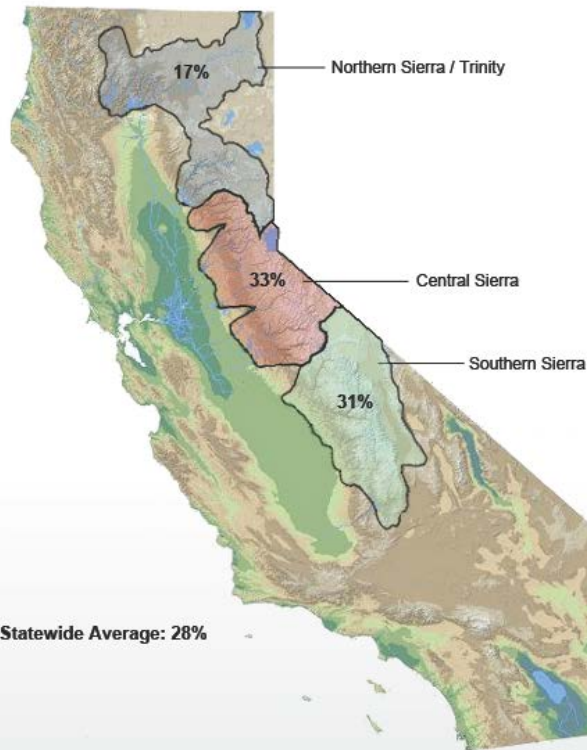
San Joaquin Precipitation: 5-Station Index, March 10, 2014



Snow Pack

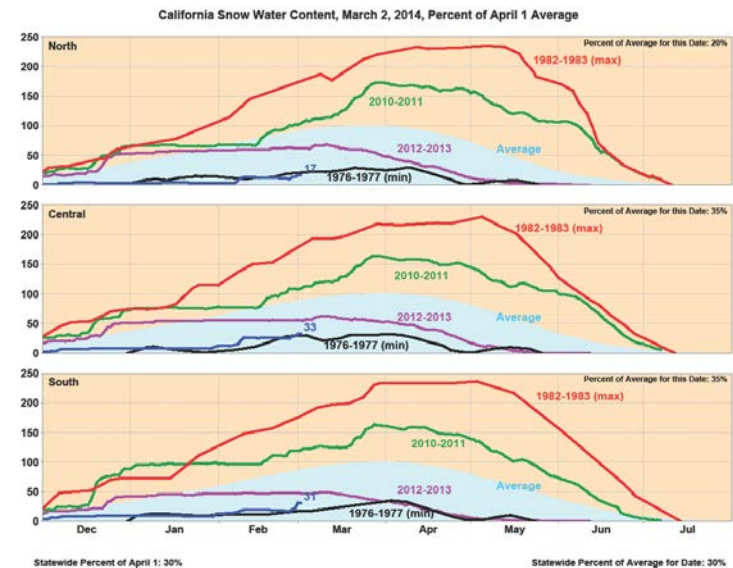


Current Regional Snowpack from Automated Snow Sensors - % of April 1 Average

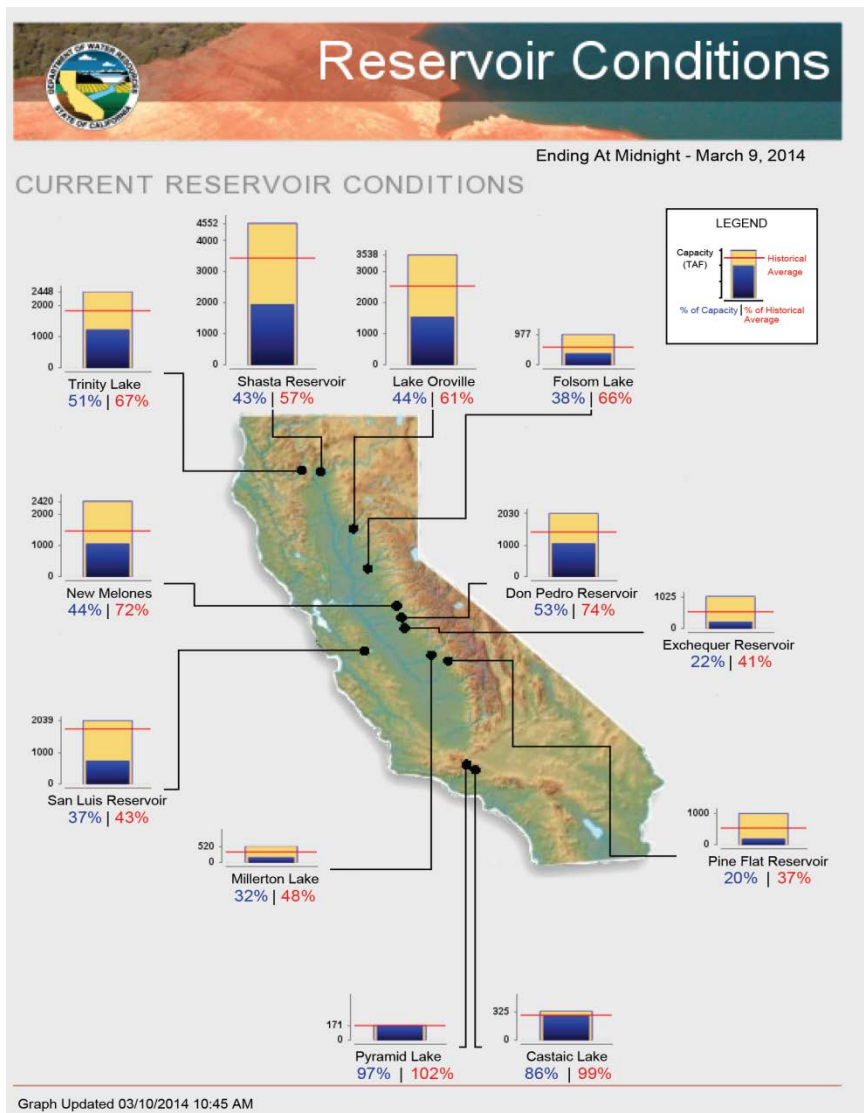


Data as of March 2, 2014

Updated 03/02/2014 01:15 PM



Water Storage

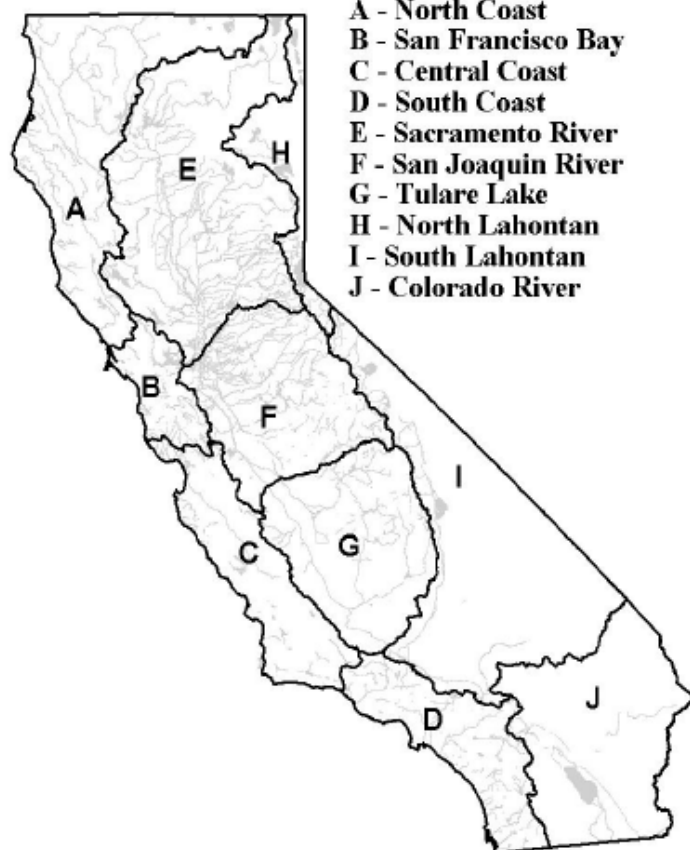


Water Storage						
Reservoir Name	Capacity (AF)	Elevation (FT)	Storage (AF)	Outflow (CFS)	Inflow (CFS)	Storage - Year Ago This Date
SACRAMENTO RIVER						
SHASTA	4,552,100	954.88	1,958,595	1,619	10,423	3,663,520
KESWICK	23,800	581.52	20,405	2,639	2,191	18,785
TRINITY RIVER						
CLAIR ENGLE	2,447,700	2,280.03	1,239,768	244	6,809	2,004,079
FEATHER RIVER						
OROVILLE	3,538,000	735.84	1,549,089	966	5,158	2,888,001
AMERICAN RIVER						
FOLSOM	977,000	399.49	376,043	461	2,900	551,897
NIMBUS	9,000	120.71	6,805	652	550	7,697
STANISLAUS RIVER						
NEW MELONES	2,420,000	952.14	1,071,574	24	512	1,587,575

AF - Acre Feet, CFS - Cubic Feet per Second

Note: Reservoir Flows are daily averages.

Summary of Water Conditions in California, February 1, 2014 (percent of average)*



- A - North Coast
- B - San Francisco Bay
- C - Central Coast
- D - South Coast
- E - Sacramento River
- F - San Joaquin River
- G - Tulare Lake
- H - North Lahontan
- I - South Lahontan
- J - Colorado River

Hydrologic Region	Precip Oct 1- date	Snow Water Content	Reservoir Storage 31-Jan	Oct 1- date	Runoff Apr thru Jul Forecast	Water Year Forecast
North Coast	15	5	65	5	35	30
San Francisco Bay	10	--	75	0	--	--
Central Coast	10	--	35	0	--	--
South Coast	25	--	80	10	--	--
Sacramento River	15	5	65	25	40	35
San Joaquin River	20	10	65	10	40	35
Tulare Lake	25	10	45	20	35	35
North Lahontan	30	20	40	40	35	35
South Lahontan	35	30	90	50	30	25
Colorado River	50	--	--	--	--	--
Statewide	20	10	65	15	55	55
Previous Years, Statewide						
February 1, 2013	100	90	105	100	85	90
February 1, 2012	60	35	110	40	55	55
February 1, 2011	135	135	110	120	110	110
February 1, 2010	110	115	80	65	95	80
February 1, 2009	65	60	65	35	65	55
February 1, 2008	110	130	85	55	95	80
February 1, 2007	55	40	110	55	55	55
February 1, 2006	130	110	120	185	105	115

Tribal Water Systems At Risk



The following water systems at greatest risk due to drought conditions:

Running out of water

State officials say these communities and water districts could run out of water within 100 days:



Source: California Department of Public Health

John Blanchard / The Chronicle

Surface water systems that are at risk and likely to be impacted by the drought:

- A. Yurok
- B. Hoopa
- C. Karuk
- D. Grindstone
- E. Stewarts Point
- F. Tule River
- G. Smith River

Communities served by non-Indian water systems that are at risk and have secondary water rights:

- H. Redwood Valley
- I. Coyote Valley
- J. San Pasqual (District B)
- K. Tuolumne
- L. Torres Martinez

Groundwater systems that are at risk and likely to be impacted by the drought:

- M. Big Valley
- N. Cold Springs
- O. Cortina*
- P. Chicken Ranch
- Q. Enterprise*
- R. Ione*
- S. La Posta
- T. Morongo
- U. Santa Rosa
- V. Santa Ysabel

Salt water intrusion concerns as a result of the drought:

- W. Table Bluff
- X. Manchester/Pt. Arena
- E. Stewarts Point
- G. Smith River

Tule River Water Source



• February 2014

Lopez Creek – Smith River Water Source



• February 2014

Hoopla Water Intake



Miranda Allotment





Cal OES
GOVERNOR'S OFFICE
OF EMERGENCY SERVICES



Weekly Drought Brief

Monday March 3, 2014

Local Government

- **Local Emergency Proclamations:** A total of 26 local Emergency Proclamations have been received to date from city, county, and tribal governments, as well as special districts:
 - **Counties:** Glenn, Inyo, Kern, Kings, Madera, Mendocino, Santa Barbara, San Joaquin, Sonoma, Sutter, Tulare, Tuolumne, Yuba
 - **Cities:** Brookside Township-Mendocino County, City of Willits-Mendocino County, City of St. Helena-Napa County, City of Calistoga-Napa County, City of American Canyon-Napa County
 - **Tribes:** Hoopa Valley Tribe in Humboldt County, Yurok Tribe in Del Norte County, Tule River Indian Tribe in Tulare County, Karuk Tribe in Siskiyou/Humboldt Counties
 - **Special Districts:** Lake Don Pedro Community Services District, Placer County Water Agency (PCWA), Twain Harte Community Services District, Carpinteria Valley Water District

Governor Brown Declares Drought Emergency

Drought Concerns

- In 2012 the California State Water Project moved 2.5 MAF of water from Northern California's rivers to 25 million people and a million acres of farmland in the arid central and southern parts of the state.
- In 2013, the driest on record, the system delivered 1.5 MAF of water, down 40 percent.
- This year, the planned water distribution is zero.
- **California State Water Projects are essentially shutting down.**



Gov. Brown,
Emergency Drought
Declaration
(Jan 17, 2014)

Tribal Water Systems - Drought Assessment



Tribal Water Systems - Drought Assessment

- Assessed 148 tribal water systems
- 57 assessed in the Escondido District
- 50 assessed in the Sacramento District
- 41 being assessed in the Redding District



California IHS – Drought Assessment

SDO Drought Assessment Summary

No.	Indicator	Value
1	Total water systems on inventory	50
2	Total water systems that responded	31
3	Percentage that responded	62%
4	Total Indian homes on tribal systems assessed	1,389
5	Total systems with well/ground water source	20
6	Total systems with surface water source	2
7	Total systems with interconnection water source	3
8	Total systems with multiple water source	5
9	No drought contingency plan	20
10	Has a drought contingency plan	2
11	Percentage with drought contingency plan	9%
12	Current drought level/stage	
a	Mild	2
b	Moderate	13
c	Severe	6
d	Emergency	2
13	Water reduction and supply management practices	
a	None	4
b	Water conservation and public outreach	10
c	Reduced or no irrigation	0
d	Use of reclaimed water	1
e	Mandatory reductions	2
f	Leak repairs	2
g	Installation of low water use devices	2

EDO Drought Assessment Summary

No.	Indicator	Value
1	Total water systems on inventory	57
2	Total water systems that responded	34
3	Percentage that responded	60%
4	Total Indian homes on tribal systems assessed	2,808
5	Total systems with well/ground water source	30
6	Total systems with surface water source	1
7	Total systems with interconnection water source	1
8	Total systems with multiple water source	2
9	No drought contingency plan	11
10	Has a drought contingency plan	2
11	Percentage with drought contingency plan	15%
12	Current drought level/stage	
a	Mild	11
b	Moderate	2
c	Severe	0
d	Emergency	0
13	Water reduction and supply management practices	
a	None	9
b	Water conservation and public outreach	1
c	Reduced or no irrigation	1
d	Use of reclaimed water	1
e	Mandatory reductions	0
f	Leak repairs	0
g	Installation of low water use devices	0

California IHS – Drought Assessment

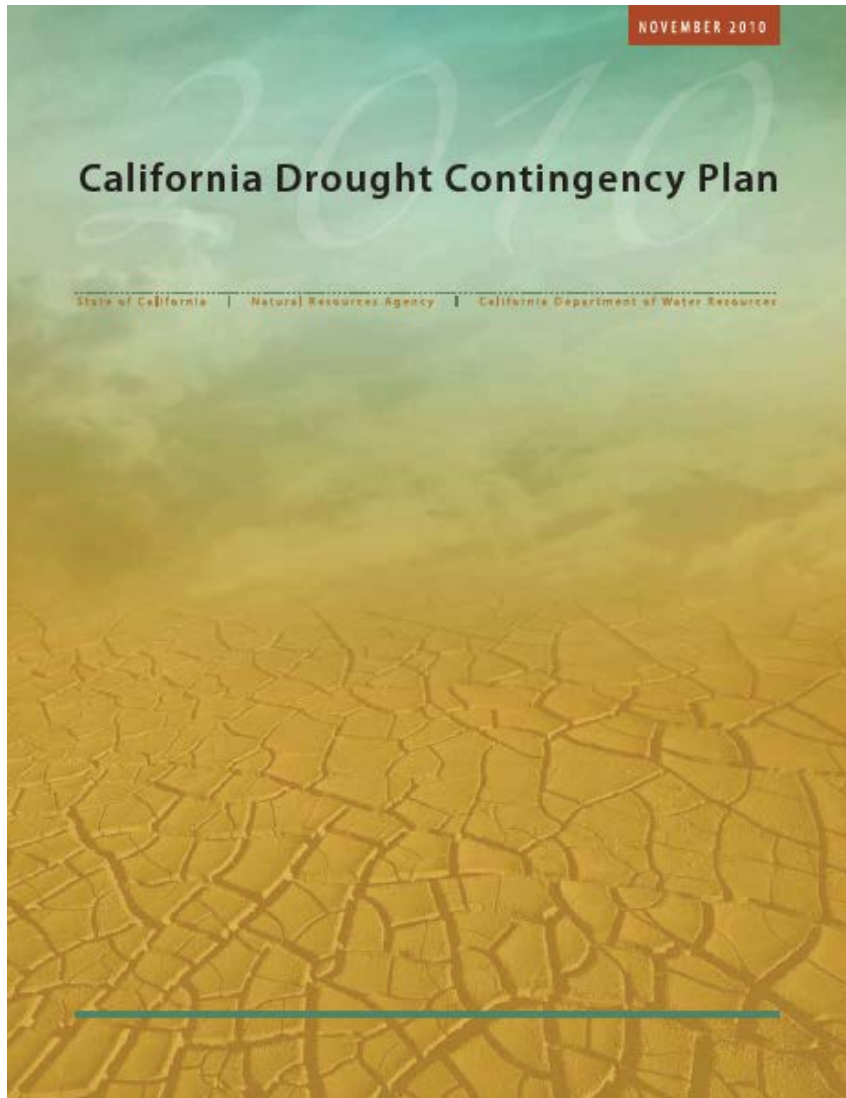
Table of Example Drought Response Levels, Triggering Criteria, and Practices as Part of a Drought Contingency Plan for a Community Water System

Table: Example Drought Levels, Triggering Criteria, and Best Management Practices

Drought Response Level	Triggering Criteria	Target/Objective	Recommended Best Management Practices
Level 1: Abnormally dry conditions	State Governor or local authority issues information on the abnormally dry conditions due to precipitation, snowpack, or runoff levels lower than normal.	Raise public awareness of the situation and collect information.	1) Raise public awareness of the situation by public-outreach activities; 2) Collect data and information on water system; and 3) Review or develop a <i>Drought Contingency Plan</i> .
Level 2: First stage drought (mild to moderate) conditions	State Governor or local authority issues a Level 2 drought declaration with voluntary water reductions.	Raise public awareness of the situation and reduce water usage.	1) Raise public awareness of the situation by public-outreach activities; 2) Request voluntary reductions in non-essential water uses (e.g. reduction by 20% from watering lawns, washing vehicles, etc.); 3) Revise water rate structure with metered rates with progressive increase in rate for quantity used; 4) Conduct a system-wide water loss audit, and 5) Develop a <i>Drought Contingency Plan</i> .
Level 3: Severe drought conditions	State Governor or local authority issues a Level 3 drought declaration OR total source yield unable to provide 75 gallons per person per day.	Raise public awareness of the situation and reduce water usage.	1) Increase public awareness of the situation by public-outreach activities; 2) Establish mandatory restrictions or bans on non-essential water uses (e.g. no watering lawns, washing vehicles, hosing down driveway, swimming pools, etc.); and 3) other incentives or penalties for water usage.
Level 4: Extreme drought conditions	State Governor or local authority issues a Level 4 drought declaration OR total source yield unable to provide 50 gallons per person per day.	Raise public awareness of the situation and restrict water usage.	1) Elevate public awareness of the severe situation by public-outreach activities; 2) Establish mandatory restrictions or bans on non-essential water uses (e.g. no watering lawns, washing vehicles, hosing down driveway, swimming pools, etc.); 3) other penalties for water usage; and 4) Establish mandatory limit of 25 gallons/person/day.
Level 5: Exceptional drought (emergency) conditions	State Governor or local authority issues a Level 5 drought declaration OR total source yield unable to provide 25 gallons per person per day.	Raise public awareness of the situation and restrict water usage to only essential public health uses.	1) Elevate public awareness of the emergency situation by public-outreach activities; 2) Establish mandatory restrictions or bans on all non-essential water uses; 3) Establish water uses for only essential uses (e.g. drinking, cooking, and hygiene); and 4) Establish mandatory limit of 15 gallons/person/day.

If the total source yield is unable to provide 25 gallons per person per day, the IHS could provide emergency assistance in acquisition of alternative water supplies (e.g. inter-connection, deepening an existing well). If the total source yield is unable to provide 15 gallons per person per day, the IHS could provide emergency assistance such as water hauling. Note that IHS is limited on the number and type of emergency assistance.

Drought Plans



- Drought is unlike other natural emergencies such as **hurricanes, floods, or earthquakes**; drought-related conditions can take years to escalate to the point at which water supply becomes severely limited, and the length of time that drought conditions may persist and impact communities is unknown.
- EPA's General Assistance Program (GAP) Grant can fund tribal Drought Contingency Plans.
- Eligible activities may include those that support the Tribe's overall assessment of vulnerability and capacity-building efforts to develop a responsive environmental program.
- Specific eligible work may include development of a Drought Contingency Plan for Tribal lands, collecting data and information on Tribal-wide water systems to inform further analysis, conducting associated public education and outreach efforts, coordinating with other jurisdictions (federal, state, local), developing or revising codes and ordinances that govern water use and conservation, and evaluating and/or revising the Tribal rate structure.

Impact on Health and Lifestyle



The Impact of Drought on Health - Quantity and Quality of Potable Water

Surface Water

- Reduced stream and river flows can produce inadequate or **no water flows to pump intake**.
- Reduced stream and river flows can increase the concentration of pollutants in water and cause stagnation.
- The filtration components in surface water treatment facilities are designed based on historical water quality data and are effective at removing microbiological contaminants from untreated source waters. If source waters have unusually high sediment loads, such as those caused **by wildfires**, they can easily clog these filters.

The Impact of Drought on Health - Quantity and Quality of Potable Water

Groundwater

- Shallow groundwater aquifers that exchange water with surface waters are likely to be the most affected by drought.
- Several tribal water systems have reported decreased levels of water in wells in the face of drought, with some shallow wells becoming dry.
- Drought in coastal areas can increase saltwater intrusion into fresh groundwater supplies. The lack of rain and drying of surface water prevents the replenishment of fresh water in aquifers, which allows saltwater to enter.

The Impact of Drought on Health - Diminished Living Conditions

Sanitation and Hygiene

- The availability of water for cleaning, sanitation, and hygiene is directly linked to the reduction or control of numerous diseases. Drought conditions create the need to conserve water, but these conservation efforts should not hinder proper sanitation and hygiene.
- People may feel the need to conserve water in ways that can **increase health risks, such as reducing or eliminating hand washing.**
- Personal hygiene, cleaning, hand washing, and washing of fruits and vegetables can be done in a way that conserves water, while at the same time continues to promote these healthy behaviors.
- The installation of low-flow faucet aerators in businesses and homes is one example of how to reduce water consumption while maintaining hand washing and other healthy hygienic behaviors.

The Impact of Drought on Health - Diminished Living Conditions

Air Quality

- The dusty, dry conditions and wildfires that often accompany drought can compromise health, particularly among persons who have chronic health conditions.
- Fire and dry soil and vegetation increase the number of particulates that are suspended in the air, such as pollen, smoke, and fluorocarbons.
- These substances can irritate the bronchial passages and lungs, thereby exacerbating chronic respiratory illnesses (e.g., asthma) and increasing the risk for acute respiratory infection (e.g., bronchitis and bacterial pneumonia, including dust pneumonia)

The Impact of Drought on Health - Diminished Living Conditions

- Food and Nutrition
- Drought affects the quantity as well as the quality of America's crops and produce.
- Low crop yields can result in elevated food prices and shortages, potentially leading to malnutrition (primarily stemming from protein and micronutrient deficiencies) among people who are economically burdened by the higher prices.
- As water supplies dwindle, the quality of water being used for agricultural purposes typically decreases. In the face of extreme drought, **farmers may opt to use reclaimed or recycled water (i.e., treated municipal sewage) to irrigate their fields and process the crops they grow.** If not closely monitored, this agricultural practice could pose a threat to the safety of the food supply by increasing the likelihood of public exposure to pathogens, like Salmonella and toxin-producing E. coli, and other potentially toxic substances.

Water Restrictions Threaten
Agriculture Operations and Reduce
the Industry's Economic Activity

AT RISK

(based on 2009 water shortage impacts)

- \$2.8 billion** in foregone statewide income from jobs lost
- 6%** of CA's total economic activity comes from agriculture
- \$11 billion** in annual state revenue
- \$2.2 billion** in gross direct and indirect losses to the Central Valley
- 40%** of Central Valley jobs are tied to ag production and related processing

The Water Crisis Will Cause a Decline in
**Trucking, Shipping, Trade and
Food Processing Industries**

AT RISK



95%

of California's agriculture is transported by freight



\$640 billion

in exported goods are processed by the ports in Los Angeles, San Diego and Bay Area counties



1.4 million

jobs are generated by the movement and exporting of goods through California ports



640,000

people work in trade related jobs in the Southern California Region



Over 50,000

food processing jobs in CA are directly tied to agriculture production

The Impact of Drought on Health - Diminished Living Conditions

Mental and Behavioral Health

- The ***financial implications*** of drought have been shown to ***have an adverse effect on persons who rely on rainfall and water for their economic survival***, including farmers and other agriculture-related professionals, ranchers, landscapers, horticulturalists, nursery and garden supply owners and employees, and recreational facility operators.
- ***Financial-related stress and worry can cause depression, anxiety, and a host of other mental and behavioral health conditions and disorders.*** These factors can lead to suicide, particularly among persons living in rural areas who have fewer options for income and limited access to mental and behavioral health care.

The Impact of Drought on Health - Diminished Living Conditions

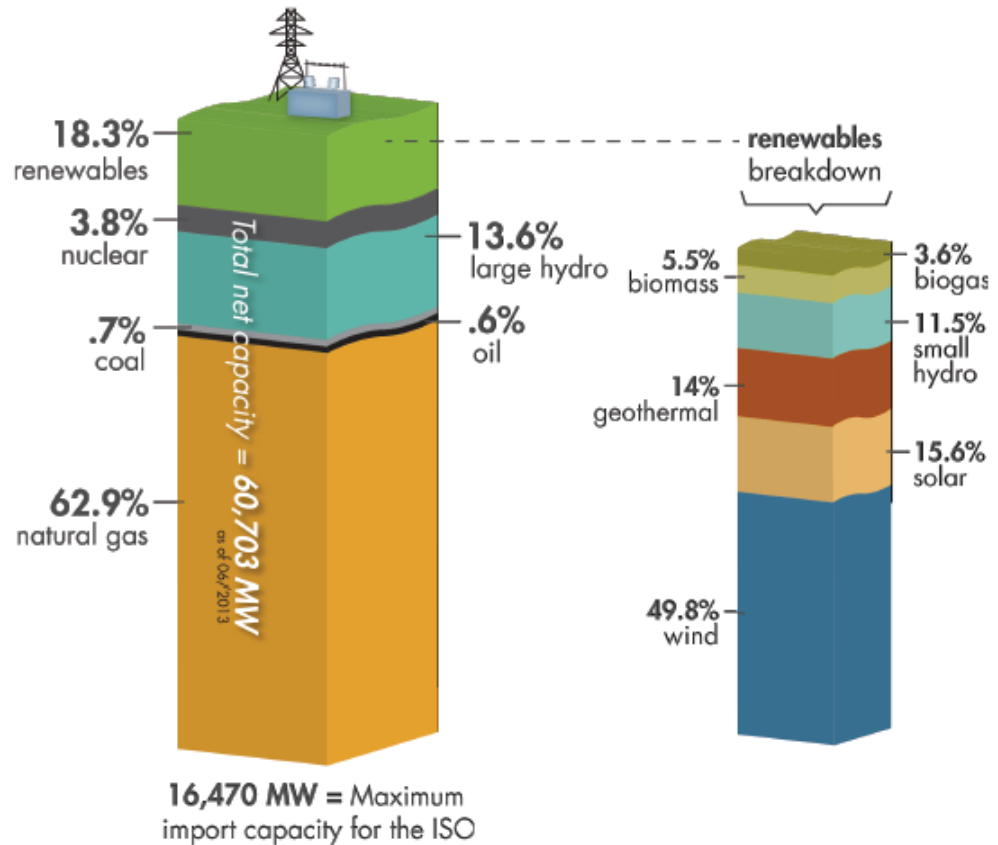
Energy

- Lower production capacity causes shortages in available electricity, which can negatively impact health and well-being.
- Certain populations, including persons living in nursing homes, hospitalized patients, and other persons who must rely on electrical equipment for survival, are most vulnerable.

Energy Drought Concerns

Current portfolio

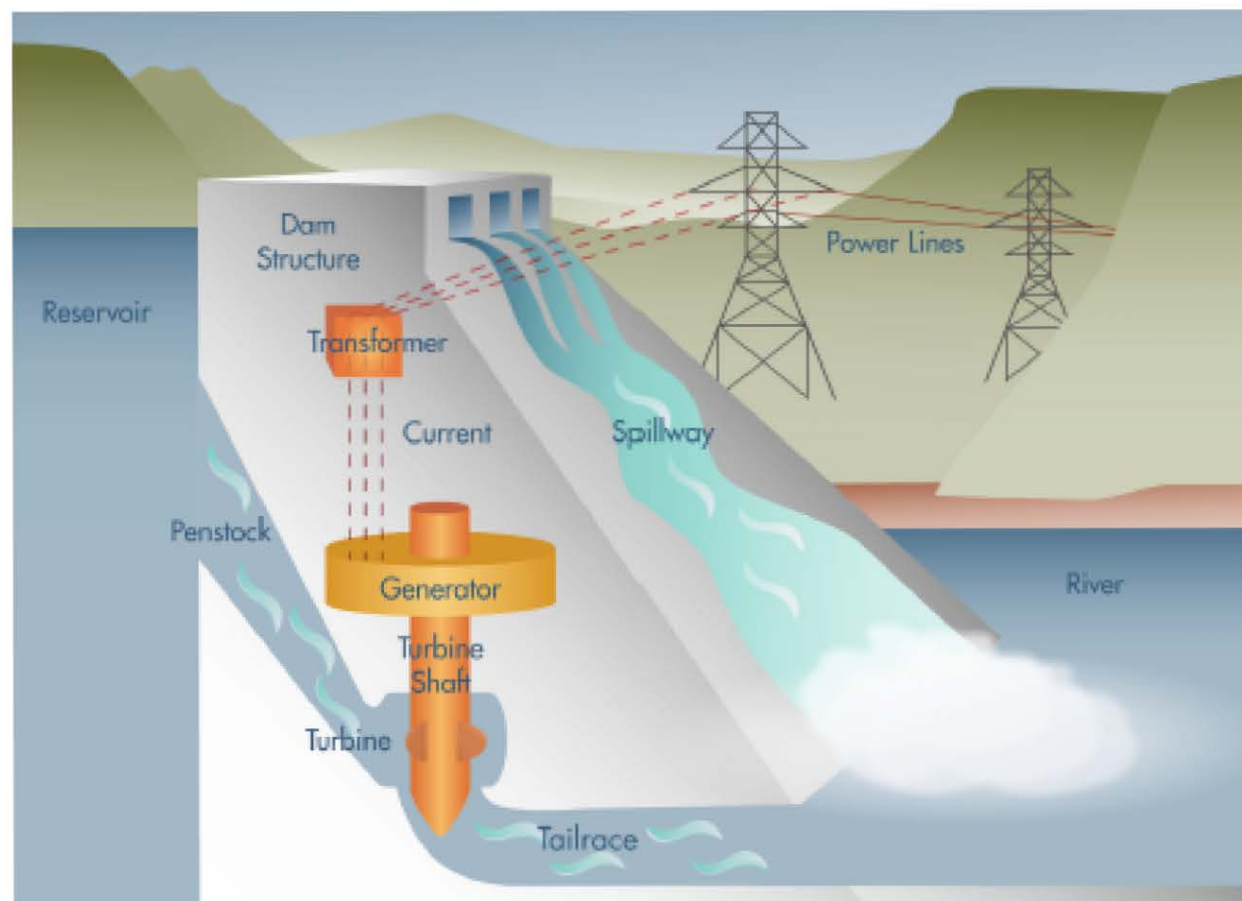
- Water is a key resource to help generate electricity to power homes, businesses, and other facilities.
- Hydropower production is sensitive to total runoff, to its timing, and to reservoir levels.



Water and energy nexus

Hydroelectricity is the primary means for “storing” electricity

Zero-emission
water provides
low-cost fuel, but
supply depends
on Mother Nature



Drought Preparedness and Assistance



Congress Debates Drought-relief Aid

- The Senate bill wouldn't undo any federal or state law as the House version does. Rather, it's designed to streamline efforts to increase water flowing into the Central Valley by calling on authorities to maximize water supplies, reduce project review times and ensure water is directed to users whose need is greatest. The measure would provide \$300 million in emergency funds to be used on a range of projects
- The House bill would divert water from the San Joaquin River to farms, homes and businesses. Such a move is opposed by the administration, Democrats and environmentalists largely because it would halt a project designed to restore the natural flow of water — and salmon — in the river

Proposed Senate Bill

CEL41418

S.L.C.

113TH CONGRESS
2d Session

S. _____

To direct the Secretary of the Interior, the Secretary of Commerce, and the Administrator of the Environmental Protection Agency to take actions to provide additional water supplies and disaster assistance to the State of California due to drought, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mrs. FEINSTEIN (for herself, Mrs. ROSEN, Mr. WYDEN, and Mr. MURKLEY) introduced the following bill, which was read twice and referred to the Committee on _____

A BILL

To direct the Secretary of the Interior, the Secretary of Commerce, and the Administrator of the Environmental Protection Agency to take actions to provide additional water supplies and disaster assistance to the State of California due to drought, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

SECTION 1. SHORT TITLE.

4 This Act may be cited as the "California Emergency
5 Drought Relief Act of 2014".

SEC. 2. TABLE OF CONTENTS.

7 The table of contents of this Act are as follows:

1 SEC. 106. STATE REVOLVING FUNDS.

2 The Administrator of the Environmental Protection
3 Agency, in allocating amounts for each of the fiscal years
4 during which the State's emergency drought declaration
5 is in force to State water pollution control revolving funds
6 established under title VI of the Federal Water Pollution
7 Control Act (33 U.S.C. 1381 et seq.) and the State drink-
8 ing water treatment revolving loan funds established
9 under section 1452 of the Safe Drinking Water Act (42
10 U.S.C. 300j-12), shall, for those projects that are eligible
11 to receive assistance under section 603 of the Federal
12 Water Pollution Control Act (33 U.S.C. 1383) or section
13 1452(a)(2) of the Safe Drinking Water Act (42 U.S.C.
14 300j-12(a)(2)), respectively, that the State determines
15 will provide additional water supplies most expeditiously
16 to areas that are at risk of having an inadequate supply
17 of water for public health and safety purposes or to im-
18 prove resiliency to drought—

H. R. 2055—233

fund, and used for eligible purposes of the fund, including adminis-
tration: *Provided further*, That for fiscal year 2012, and notwith-
standing section 518(f) of the Act, the Administrator is authorized
to use the amounts appropriated for any fiscal year under section
319 of that Act to make grants to federally recognized Indian
tribes pursuant to sections 319(h) and 518(e) of that Act: *Provided
further*, That for fiscal year 2012, notwithstanding the limitation
on amounts in section 518(c) of the Federal Water Pollution Control
Act and section 1452(i) of the Safe Drinking Water Act, up to
a total of 2 percent of the funds appropriated for State Revolving
Funds under such Acts may be reserved by the Administrator
for grants under section 518(c) and section 1452(i) of such Acts:

State of California

The Governor signed the following bills:

SB 103 by the Committee on Budget and Fiscal Review – Budget Act of 2013.

SB 104 by the Committee on Budget and Fiscal Review – Drought Relief.

For full text of the bills, visit: <http://leginfo.ca.gov/bilinfo.html>

Highlights of the legislation include:

Enhancing Water Conservation and Improving Water Supplies

- \$549 million from the accelerated expenditure of voter-approved bonds, Proposition 84 and Proposition 1E, in the form of infrastructure grants for local and regional projects that are already planned or partially completed to increase local reliability, including recapturing of storm water, expanding the use and distribution of recycled water, enhancing the management and recharging of groundwater storage and strengthening water conservation.

- \$30 million from the Greenhouse Gas Reduction Fund to the Department of Water Resources (DWR) for direct expenditures and grants to state and local agencies to improve water use efficiency, save energy and reduce greenhouse gas emissions from state and local water transportation and management systems.

- \$14 million for groundwater management across the state, including assistance to disadvantaged communities with groundwater contamination exacerbated by the drought.

- \$10 million from the Greenhouse Gas Emissions Fund for the California Department of Food and Agriculture to invest in irrigation and water pumping systems that reduce water use, energy use and greenhouse gas emissions.

- \$15 million from the General Fund for Emergency Drinking Water Fund to address emergency water shortages due to drought.

- \$13 million from the General Fund to augment the California Conservation Corps and local community conservation corps to expand water use efficiency and conservation activities and to reduce fuel loads to prevent catastrophic fires.

- **Assisting Californians Disproportionately Impacted by the Drought**

- \$25.3 million from the General Fund for food assistance, which will be structured to maximize the potential federal drought assistance that can be provided to provide food assistance to those impacted by the drought.

- \$21 million from the General Fund and federal funds for housing related assistance for individuals impacted by the drought.

- With California facing one of the most severe droughts on record, Governor Brown declared a [drought State of Emergency](#) in January and directed state officials to take all necessary actions to prepare for water shortages

CFCC Funding – website at www.cfcc.ca.gov



California Financing Coordinating Committee (CFCC)

What is CFCC?

The California Financing Coordinating Committee (CFCC) was formed in 1998 and is made up of seven funding members: five state, two federal. CFCC members facilitate and expedite the completion of various types of infrastructure projects helping customers combine the resources of different agencies. Project information is shared between members so additional resources can be identified. CFCC members conduct free funding fairs statewide each year to educate the public and potential customers about the different member agencies and the financial and technical resources available.

Purpose of CFCC Funding Fairs

CFCC Funding Fairs provide opportunities to obtain information about currently available infrastructure grant, loan and bond financing programs and options. Each attendee receives a copy of all slide presentations and additional useful infrastructure financing material. Funding Fairs also provide an opportunity for attendees to speak directly with program staff about specific projects and issues affecting their community.

Who should attend?

Public works and local government representatives including city managers and planners, economic development and engineering professionals, officials from privately owned facilities, water and irrigation district managers, financial advisors and project consultants.

Eligible Project Types

CFCC Agencies fund the following types of eligible projects such as drinking water, waste water, solid waste, water quality, water supply, water conservation, energy efficiency, flood management, community facilities, streets and highways, and emergency response vehicles.

CFCC Information

Please log on to the CFCC website at www.cfcc.ca.gov for the 2014 Funding Fair schedule, CFCC Member Directory and general information.

2014 CFCC Funding Fairs

Please join the California Financing Coordinating Committee (CFCC) for this **no-cost** event.

2014 SCHEDULE

May 28, 2014
CalEPA Headquarters
Coastal Hearing Room
1001 "I" Street
Sacramento, CA 95814

August 20, 2014
Shasta/Redding Library
110 Parkview Ave
Redding, CA 96001

September 9, 2014
Fresno State University
North Gym, Room 118
5241 North Maple Ave
Fresno, CA 93740

September 11, 2014
San Luis Obispo City County Library
995 Palm Street
San Luis Obispo, CA 93401

September 23, 2014
Kern County Health Department
1800 Mt Vernon Ave
Bakersfield, CA 93305

September 25, 2014
Eastern Municipal Water District
2270 Trumble Road
Perris, CA 92572

October 9, 2014 Tentatively
CalEPA Headquarters
Coastal Hearing Room
1001 "I" Street
Sacramento, CA 95814
The Sacramento workshop will be webcast. Access to the webcast will be available online at: <http://www.sacra.ca.gov/webcast>.

CFCC agencies fund the following types of eligible infrastructure projects including:

- Drinking water
- Wastewater
- Water quality
- Water supply
- Water conservation
- Solid waste
- Energy efficiency
- Flood management
- Streets and highways
- Emergency response vehicles
- Water use efficiency
- Community facilities

AGENDA

At each location, the Funding Fair Agenda is as follows:
Check in: 8 a.m.-8:30 a.m.
Agency Presentations: 8:30 a.m.-Noon
Discuss your projects: Noon-3 p.m.

ATTENDEE REGISTRATION

Go to www.cfcc.ca.gov and click on Funding Fairs
Funding Fair Questions?
Please call (916) 447-9832 x 1029

For more information, please visit our web site at: www.cfcc.ca.gov

USDA – Rural Development



United States Department of Agriculture

Rural Development

Emergency Community Water Assistance Grants (ECWAG)

Key Actions

U.S. Department of Agriculture (USDA) is making \$3 million in grants available to help California's rural communities that are experiencing a significant decline in the quality or quantity of drinking water due to the drought obtain or maintain water sources of sufficient quantity and quality. These funds will be provided to eligible, qualified communities by application through USDA Rural Development's Emergency Community Water Assistance Grants (ECWAG) program.

Program Overview

The USDA Emergency Community Water Assistance Grants (ECWAG) program helps eligible rural communities recover from or prepare for emergencies that result in a decline in capacity to provide safe, reliable drinking water for households and businesses.

- Grants up to **\$150,000** are for repairs to breaks or leaks in existing water distribution lines, and related maintenance.
- Grants up to **\$500,000** are for construction of a new water source, intake and/or treatment facility or waterline extensions.

What is an Eligible Area?

Projects must be located in rural areas and towns up with 10,000 or fewer people and with a median household income less than \$62,883. Federally recognized Tribal lands and colonias are also eligible. Check eligibility at <http://eligibility.sc.egov.usda.gov>.

Who Can Apply?

Eligible applicants include most State and local governmental entities, nonprofit organizations and federally recognized Tribes. Privately owned wells are not eligible.

How to Apply

Applications are accepted year round through local USDA Rural Development offices. For a list of offices and staff contact information, see next page.



United States Department of Agriculture

Rural Development

State Office Contacts

Dave Hartwell

Dave.hartwell@ca.usda.gov

(530) 792-5817

Davis, Ca

Pete Yribarren

Pete.yribarren@ca.usda.gov

(559) 734-8732 ext. 113

Visalia, CA

CALIFORNIA TRIBAL WATER RIGHTS

Delia Parr and Jedd Parr
California Indian Legal Services

2009 California Tribal Water Summit

Briefing Paper

CALIFORNIA TRIBAL WATER RIGHTS

Delia Parr and Jedd Parr
California Indian Legal Services

Water rights in California have a long and complicated history. The interplay between state water law and tribal water rights is especially complex in California for several reasons.

First, while other western states operate under a prior appropriation system, California maintains a system of both property-based rights and prior appropriation rights.¹

Second, over 100 federally-recognized Indian tribes are located in California – by far, more tribes than in any other state. As discussed herein, a tribe's individual history plays an important role in defining their water rights, thus requiring a review of each tribe's history in order to accurately quantify each tribe's rights. No historical reviews have been completed for the majority of California Indian tribes.

Third, California contains over 300 individual Indian allotments, located both on reservations and in the public domain. Each of these requires its own historical review, but to date there have been nearly zero reviews of individual allotments.

Conclusion

In general, California's water allocation plan does not account for tribal water rights which have not yet been quantified. The exact count of tribes whose water rights have been accurately quantified is unclear, but what is clear is that the tally is far below the total number of federally-recognized tribes in the state. Furthermore, there is no evidence to suggest that the water rights of any public domain allotment have been accurately quantified and incorporated into water allocations. Not properly accounting for reserved tribal water rights will inevitably limit the ability of public entities, businesses, tribal governments, and individual landowners to formulate reliable, long-term water usage plans.

Tribal water planning advocacy and assistance

California Indian Voices

Big Pine Paiute Tribe
Big Sandy Rancheria
Big Sandy Rancheria
Bishop Paiute Reservation
Blue Lake Rancheria
Bridgeport Indian Colony
Buena Vista
CA Am. Indian and Woman
CA Indian Heritage Comm
CA Valley Miwok Tribe
Cahita Tribe of Laytonville
Chemehuevi Indian Tribe
Chokoma Tribe
Cold Springs Rancheria
Coffey/Toledo Valley Cns
Consolidated Tribal Health
Cortina Rancheria
Coyote Valley Reservation
Dry Creek Rancheria
Eel River Nation of Wialai
Elm Indian Colony
Elk Valley Rancheria
Ft. Bidwell Indian Comm
Ft. Independence Reserv
Gabrielino Tongva Tribe
Grassdome Rancheria
Hoopa Valley Tribe
Hopland Band of Indians
Ione Band of Miwoks
Lone Pine Paiute Shoshone
Manchester Pl. Area
Middlestem Rancheria
Mishewal Wapgo Tribe
Quartz Valley Indian Res.
Redwood Valley Reservation
Rogishini Rancheria
Robinson Rancheria
Scotts Valley Band
Shasta Indian Nation
She-Bul-Na Nation
Sherwood Valley Rancheria
Smith River Rancheria
Soboba Band of Luiseño
Stewart's Point Rancheria
Sustanilla Rancheria
Timbisha Shoshone Tribe
Trinidad Rancheria
Tribal Health of Pine Valley
United Bay Area Council
Upper Lake Rancheria
Wilton Rancheria
Woodford Washoe Comm Cn
Yuki, Wintu Tribe



Watershed Solutions



Advocate for California Indian Water Rights Today!

- 1) Receive Email News Updates
- 2) Learn about Meetings & Trainings
- 3) Make a Financial Donation for Water Commission Advocacy
- 4) Help your Tribe become a member of the California Inter-Tribal Council

Call, Email or go to our website at
WWW.ITWATERCOMMISSION.ORG

Indian Water Commission

California Indian Water Commission, Inc.
4305 19th Ave. Sacramento, CA 95824
(916) 843-0058 (916) 601-4069
info@iwatercommission.org
www.ciwcinc.org

Protecting our Sacred Water



California Indian Water Commission

Indian Water Commission Vision

- Tribal water planning advocacy and assistance
- Water rights leadership
- Protection of our sacred water
- Tribal water rights and water stewardship education



Taking Action for California Tribal People. Contribute Your Voice to Our Common Cause Now!

Our vision is to further develop and educate our Tribal-Public communities according to Traditional cultural beliefs on the water and land issues that impact Tribes. We work to preserve the water and traditional cultural landscapes and to prevent its existing and future degradation.

- Initiate and facilitate interaction and communication to prevent its degradation.
- Establish effective stewardship of water and natural resources.
- Recommend and identify enforcement and strategies with respect to each unique culture and environmental ecosystems (monitoring).
- Develop and assist water and ecosystems back to their healthy capacity.
- Assist Tribes and its membership and communities when requested. To educate and advocate traditional core values with respect to their individual unique world view and customs. To acknowledge sovereign rights and incorporate traditional environmental ecological knowledge. This is inclusive of socio-economic, cultural, environmental and spiritual aspects.
- Provide access to technological resources to assist in their water management.
- Defend and advocate the rights of Tribes on local, federal, state and private water issues.



SPREADING THE MESSAGE

WEBSITE



OUTREACH

Drought 2014: Resources

Program News



Governor Declares Drought; Directs the Public to Save Our Water Website for Conservation Resources

Be a Partner

Sprinklers 101

WHAT DOES A 20% REDUCTION *in water use look like?*



AVERAGE DAILY USE

The average Californian uses 196 gallons of water per day. Here are some easy ways to reduce water use. Find the right combination for you to reduce by 20% or 38 gallons a day.



INSTALL AERATORS ON
BATHROOM FAUCETS

saves

1.2 GALLONS
per person/day



WASH ONLY FULL
LOADS OF CLOTHES

saves

15-45 GALLONS
per load



TURN OFF WATER WHEN
BRUSHING TEETH OR
SHAVING

saves

10 GALLONS
per person/day



TAKE FIVE MINUTE
SHOWERS INSTEAD OF
10 MINUTE SHOWERS

saves

12.5 GALLONS
with a water efficient showerhead



FIX LEAKY TOILETS

saves

30-50 GALLONS
per day/toilet



INSTALL EFFICIENT,
WATERSENSE-LABELED
SHOWER HEADS



saves

1.2 GALLONS
per minute

OR

10 GALLONS
per average 10-minute shower



INSTALL A HIGH-EFFICIENCY
WATERSENSE-LABELED TOILET
(1.28 GALLON PER FLUSH)

saves

19 GALLONS
per person/day



For more tips on reducing water use, visit saveourH2O.org



Californians Don't Waste. 

The official 2014 California hose



Sweep, don't spray, because Californians Don't Waste.💧

The official 2014 California lawn



Brown is the new green because Californians Don't Waste.

The official 2014 California shower



Skip a shower to save water because Californians Don't Waste.

The official 2014 California hose



Sweep, don't spray, because Californians Don't Waste.

California Area Website – Drought 2014

CA Home
CA Site Map
CA Member Portal Access

INDIAN HEALTH SERVICE

HEALTH PROGRAMS

TRIBAL CONSULTATION

NEWS & EVENTS

ABOUT US

OFFICES

FAQS

GPRA / GPRAMA Portal

Learn More

FOR PATIENTS

FOR HEALTH CARE PROFESSIONALS

TRIBAL RESOURCES

CA Area Director's Message

March is National Nutrition Month

Read More

Mission Statement

The overall mission of the Indian Health Service (IHS) is to raise the physical, mental, social and spiritual health of American Indians and Alaska natives (AI/AN) to the highest level.

Read More

California YRTC Project

IHS California Area Office is planning to build California's first IHS-operated Youth Regional Treatment Centers (YRTC).

Read More

CA Member Portal Access

WHAT'S NEW

Drought 2014

The IHS/CAO, OEH&E, has taken a proactive approach to plan for drought conditions and possible impacts to Indian community water systems.

JANUARY 31, 2014

[EZV message: Pregnant Women Need Protection from Flu](#)

Pregnant women are recommended to get a flu shot during any stage of pregnancy

MAY 22, 2014

[California Special Diabetes Program for Indians \(SDPI\) Meeting](#)

5/19/14 - 5/21/14

[2014 Providers Best Practices & GPRA Measures Continuing Medical Ed](#)

FEBRUARY 26, 2014

[CDC Reports Flu Hit Younger People Particularly Hard This Season](#)

FEBRUARY 24, 2014

[2014 GPRA Measures](#)

[illegible]

Websites For More Information

DROUGHT RELATED WEBSITES FOR MORE INFORMATION

Governor's [Proclamation of Drought Emergency](#)

State's Water Conservation Campaign, [Save our Water](#)

California Department of Food and Agriculture, [Drought information](#)

California Department of Water Resources [Current Water Conditions](#)

California Data Exchange Center, [Snow Pack/Water Levels](#)

California State Water Resources Control Board, Water Rights, [Drought Info and Actions](#)

California Natural Resources Agency, [Drought Info and Actions](#)

California Department of Public Health, Drinking Water [CDPH Drinking Water Program](#)

California State Water Project, [Information](#)

USDA Drought Designations by County [CA County Designations](#)

USDA Disaster and Drought Assistance Information [USDA Programs](#)

Questions

- ***How can we get more of it?***

- ***Future Surface Water Projects***
- ***Tribal Water Rights***
- ***Interconnections to the California water delivery system***

- ***How can we use less of it?***

- ***Don't Waste***