

California Monthly Climate Summary  
October 2015

**Weather Highlights**

October 2015 was a warm, dry month for California. According to the Western Region Climate Center's [California Climate Tracker](#), the monthly average temperature was 63.2°F which is 4.8°F higher than the long-term average. The statewide average minimum temperature for the month set a new record high with a value of 50.5°F which is 6.1°F above the long-term average and 2.1 °F higher than the previous record set in 1987. With a statewide average of 0.78 inches, precipitation was 64% of average. Statewide plots of precipitation and temperature for the past month and water year are included at the end of the document.

October started with seasonal temperatures and moisture streaming in from the Pacific. Some snow was reported at the higher elevations of the Southern Sierra. Southern California saw some precipitation in the second week of October with warmer than average temperatures south of San Francisco. A cooling trend did kick in during the latter part of the week. On October 15<sup>th</sup>, a cutoff low interacting with a surge of Pacific moisture led to intense convective events north of the Los Angeles Basin and the Southern Sierra. The heavy rain on the steep slopes with little vegetation led to mudflows that closed Interstate 5 and Highway 58. In the third week, night-time temperatures began to cool with daytime temperatures remaining consistent. Light precipitation fell in the higher elevations of the Sierra Nevada. The month closed out with some precipitation along the coast, and in the Cascades and Sierra Nevada. Record high temperatures were recorded in many locations for Halloween.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 179 temperature records tied or broken and 15 precipitation records set for the month. Of the 179 temperature records set, 61 were for new high maximum temperatures and 114 were for new high minimum temperatures. Records were set on 17 days of the month with 13 of those days coming from the Los Angeles Forecast Area. Death Valley set a record for wettest October with a total of 1.3 inches. The previous record was set in 1972 with 1.09 inches. Normal precipitation for October for Death Valley is 0.07 inches. The moisture incursions into southern California led to a number of high minimum temperature records in the middle of the month. Combined with the warm near shore sea surface temperatures, Southern California set a record for warmest October many locations. The magnitude of the record anomalies ranged from 4.6°F to 9.7°F. Camarillo tied an all-time record for five consecutive days over 90°F. On the 4<sup>th</sup> of October, Camarillo set an all-time high temperature record with a reading of 108°F. The previous record of 102°F was set on October 7, 1971.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 81 stations recorded a minimum temperature below freezing while 28 stations reached or exceeded 100°F at least once during the month. Statewide

extremes from the CDEC network of temperature gages are shown below. Also shown are the monthly average extremes from the CIMIS network. A table of regional average minimum, mean, and maximum temperatures from the CDEC stations is also shown at the end of the summary.

Precipitation in October was below average in 6 of the hydrologic regions. For the CDEC precipitation gages, the largest amount of precipitation recorded was at the South Entrance of Yosemite in the San Joaquin Region with 3.40 inches. This is 218% of the average precipitation for this station the month. At the other end of the spectrum, 3 stations recorded no precipitation for the month. For the CIMIS network, Moorpark in Ventura County topped the precipitation charts with 2.19 inches for the month and 16 stations recorded no precipitation. Some CIMIS gages may show large precipitation totals if the gages are not covered during irrigation activities so care should be given to review precipitation data used from this network. The 8-Station Index for northern California precipitation recorded 1.2 inches in October. On average, 3.0 inches of precipitation is recorded for the 8-Station index for the month. The San Joaquin 5-Station Index recorded 1.9 inches of precipitation for the month. On average, 2.1 inches of precipitation is recorded for the 5-Station Index for the month. The Tulare Basin 6-Station Index recorded 1.5 inches of precipitation for the month. On average, 1.2 inches of precipitation is recorded.

### **CoCoRaHS Update**

The start of Water Year 2016 begins California's 7<sup>th</sup> year with CoCoRaHS – the Community Collaborative Rain, Hail and Snow Network. This group uses citizen volunteers to record rain, hail and snow data. The users enter the data online at the CoCoRaHS web site. The web site provides the opportunity to see spatial detail of rain and snow patterns. A map from October 4, 2015 is shown at the end of the document. California has 1,347 volunteers signed up spanning 55 of California's 58 counties. The counties without volunteers are Alpine, Glenn, and Modoc. The counties with the most volunteers are San Diego County with 113 volunteers and Sonoma County with 115. For the month of October, 12,501 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in October was in Sonoma County on 10/16/2015 where 4.10 inches was recorded. There were no reports of snowfall recorded during the month. There were no reports of hail filed for the month. To join CoCoRaHS or find more information, please visit <http://www.cocorahs.org>.

### **Snowpack and Water Supply Conditions**

Snow pillow reports have not started for the 2016 water year. The Water Supply Index (WSI) for WY2015 for the Sacramento Basin and the San Joaquin Basin are in the critical category. More information can be found at <http://cdec.water.ca.gov/watersupply.html>. A historical listing of water year categories for both basins can be found at <http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST>. A table showing end-of-September reservoir storage by hydrologic region is shown at the end of this document. For more information on water conditions in California, visit <http://www.water.ca.gov/waterconditions/>.

### **Drought Monitor and Seasonal Outlook**

The maps for California for September 29, 2015 and October 27, 2015 are shown below. The Drought Monitor maps can be found on the National Drought Mitigation Center's (NDMC) website <http://drought.unl.edu/dm/>. These maps are largely a reflection of precipitation and soil moisture deficit estimates. As of the October 27th depiction, 46% of California is depicted in the D4 or exceptional drought category, 25.08% of California is depicted in the D3 or extreme drought category, and 21.19% of California is depicted in D2 or severe drought category, 5.06% of California is depicted in D1 or moderate drought, 2.53% depicted in abnormally dry or D0, and 0.14% with no drought depiction. Maps are updated weekly.

The U.S. Monthly Drought Outlook for November from NOAA depicts California in persisting drought conditions. This forecast is based primarily on climatology and forecast models. Maps and information can be found at [http://www.cpc.noaa.gov/products/expert\\_assessment/seasonal\\_drought.html](http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html). Updates are provided twice per month.

### **ENSO Conditions and Long-Range Outlooks**

The El Niño/Southern Oscillation (ENSO) is currently in El Niño conditions. Equatorial sea surface temperature anomalies for the tropical Pacific have been positive with values of 2.8°C in the Niño 3.4 at the end of October. The August through October 3-month running mean of the Ocean Niño Index (ONI) is 1.7 which is now the 7<sup>th</sup> 3-month running mean value above the 0.5 threshold for an El Niño event using the Climate Prediction Center's recomputed ONI time series. Five consecutive ONI values need to be above the 0.5 threshold need to be observed for classification as an El Niño event. Most forecast models have the tropical sea surface remaining warm into the winter and subsequent spring. More information can be found at the Climate Prediction Center's web site:

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/enso\\_advisory/](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/)

Updates are posted weekly. Outlook plots and discussions can be found at <http://www.wrcc.dri.edu/longrang/>. General weather information of interest can be found at <http://www.noaawatch.gov/>. For anomaly information please see [http://www.wrcc.dri.edu/anom/cal\\_anom.html](http://www.wrcc.dri.edu/anom/cal_anom.html).

### **Agricultural Data**

October 2015 saw harvests continue and wind down. Alfalfa was irrigated, cut and baled for the final time this season. Rice harvest was nearly complete. Stone fruit and walnut harvests neared completion while almond harvest continued. Pumpkins, sweet corn, and Brussels sprouts were harvested. Winter planting preparations were being made. Rangeland conditions continued to be unfavorable with forage very poor at lower elevations. Water hauling to fill ponds continued. Supplemental feeding costs continued to be high. Water needed to be hauled in for some livestock. Livestock was moved out of higher elevation pastures in preparation for winter. For further crop information see <http://www.nass.usda.gov/index.asp>.

**Other Climate Summaries**

[California Climate Tracker](#) (Western Region Climate Center)

[Golden Gate Weather Service Climate Summary](#)

[NOAA Monthly State of the Climate Report](#)

**Statewide Extremes (CDEC)**

High Temperature – 108°F (Beverly Hills, South Coast)

Low Temperature – -2°F (Casa Vieja Meadows, Tulare)

High Precipitation – 3.40 inches (South Entrance Yosemite, San Joaquin)

Low Precipitation – 0 inches (3 stations)

**Statewide Extremes (CIMIS)**

High Average Maximum Temperature – 97.1 °F (Oakville, Napa County)

Low Average Minimum Temperature – 30.7°F (Macdoel II, Siskiyou County)

High Precipitation – 2.19 inches (Moorpark, Ventura County)\*

Low Precipitation – 0 inches (16 stations)

\*Sometimes irrigation water from sprinklers gets counted as precipitation if the gage is not covered.

**Statewide Mean Temperature Data by Hydrologic Region (degrees F)**

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	26	38.9	58.9	88.8
SF Bay	9	48.6	66.5	90.7
Central Coast	13	44.9	66.1	95.5
South Coast	48	48.4	67.8	94.4
Sacramento	79	38.8	59.2	87.3
San Joaquin	44	37.7	56.8	85.0
Tulare Lake	17	32.0	50.1	76.0
North Lahontan	27	27.5	47.4	74.7
South Lahontan	16	32.8	51.8	78.9
Colorado River Desert	8	54.3	75.8	99.0
Statewide Weighted Average	287	39.1	58.9	87.0

### **Statewide Precipitation Statistics**

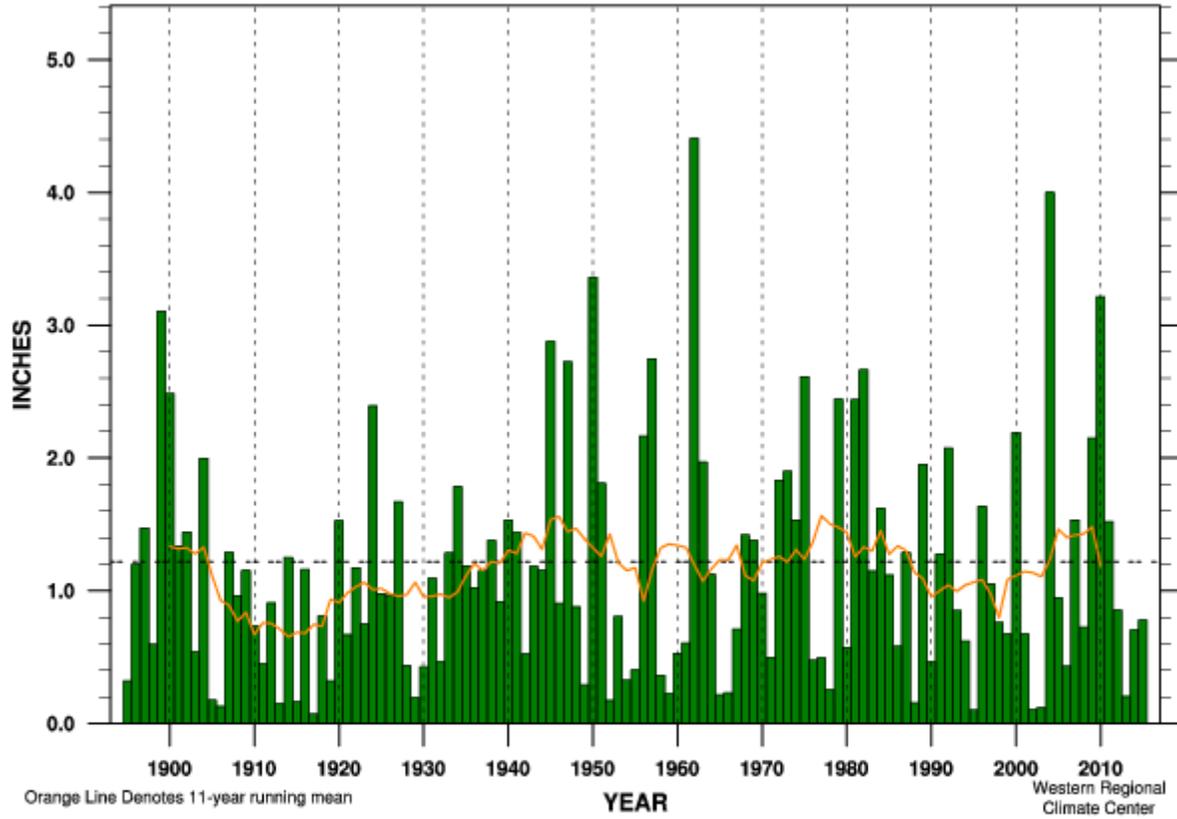
Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	Oct	Oct-Oct	Stations	Oct	Oct-Oct	Oct	Oct-Oct
North Coast	0.27	5	3	3	17	6	6	29.1%	29%
SF Bay	0.03	2	2	2	6	5	5	11.2%	11%
Central Coast	0.06	3	2	2	11	4	4	14.3%	14%
South Coast	0.06	3	3	3	14	12	12	82.0%	82%
Sacramento River	0.26	5	3	3	41	8	8	47.6%	48%
San Joaquin River	0.12	6	3	3	24	6	6	94.0%	94%
Tulare Lake	0.07	5	4	4	29	12	12	172%	172%
North Lahontan	0.04	3	3	3	13	8	8	100%	100%
South Lahontan	0.06	3	3	3	15	8	8	631%	631%
Colorado River	0.03	1	1	1	6	1	1	136%	136%
Statewide Weighted Average	1	36	27	27	176	70	70	95.6%	96%

### **End-of-October Reservoir Storage by Hydrologic Region Storage in Thousand Acre-Feet (taf)**

End-of-Month Reservoir Storage	Number of Reservoirs	Average Storage (taf)	2015 Storage (taf)	% of Average
North Coast	6	1,894	735	39%
San Francisco Bay	17	402	394	98%
Central Coast	6	524	130	25%
South Coast	29	1,285	924	72%
Sacramento	43	9,493	5,799	61%
San Joaquin	34	6,176	2,675	43%
Tulare	6	637	246	39%
North Lahontan	5	465	45	10%
South Lahontan	8	272	208	76%
Total	154	21,151	11,160	53%

California Climate Tracker Images

### California Statewide Precipitation October

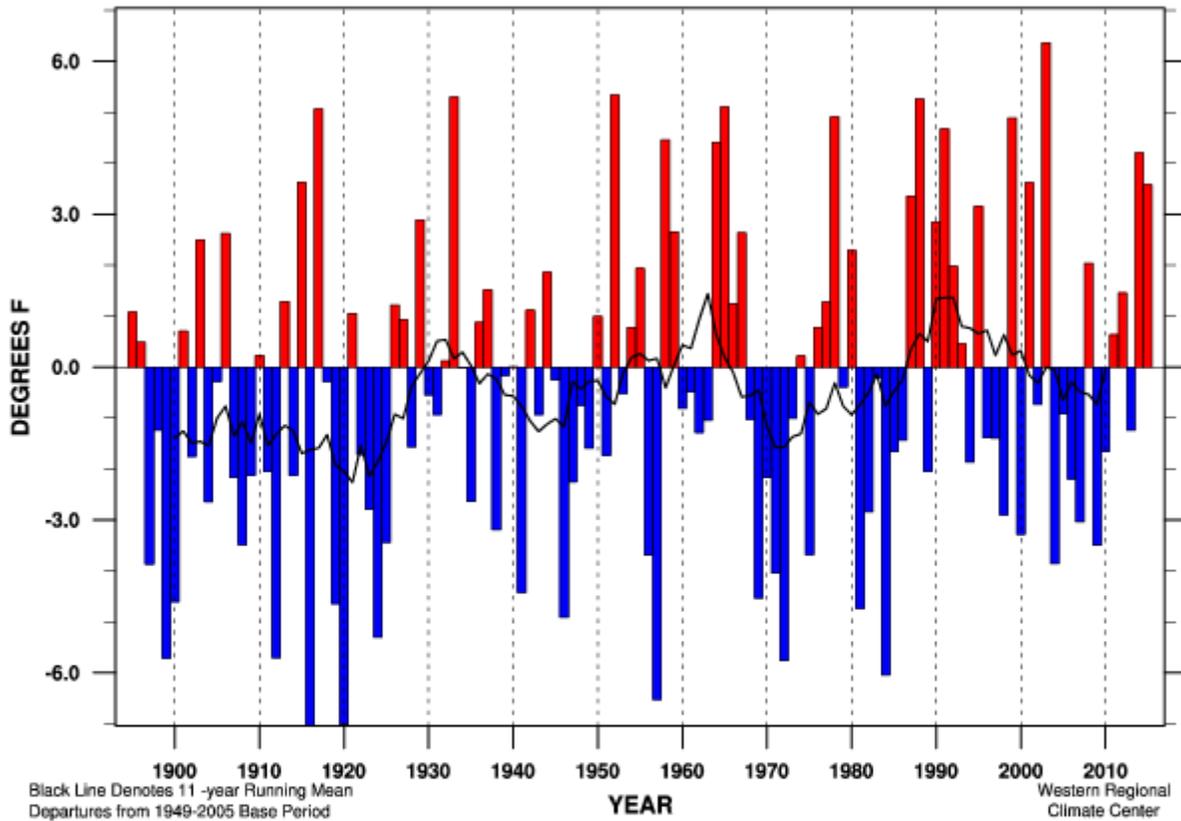


Orange Line Denotes 11-year running mean

Western Regional  
Climate Center

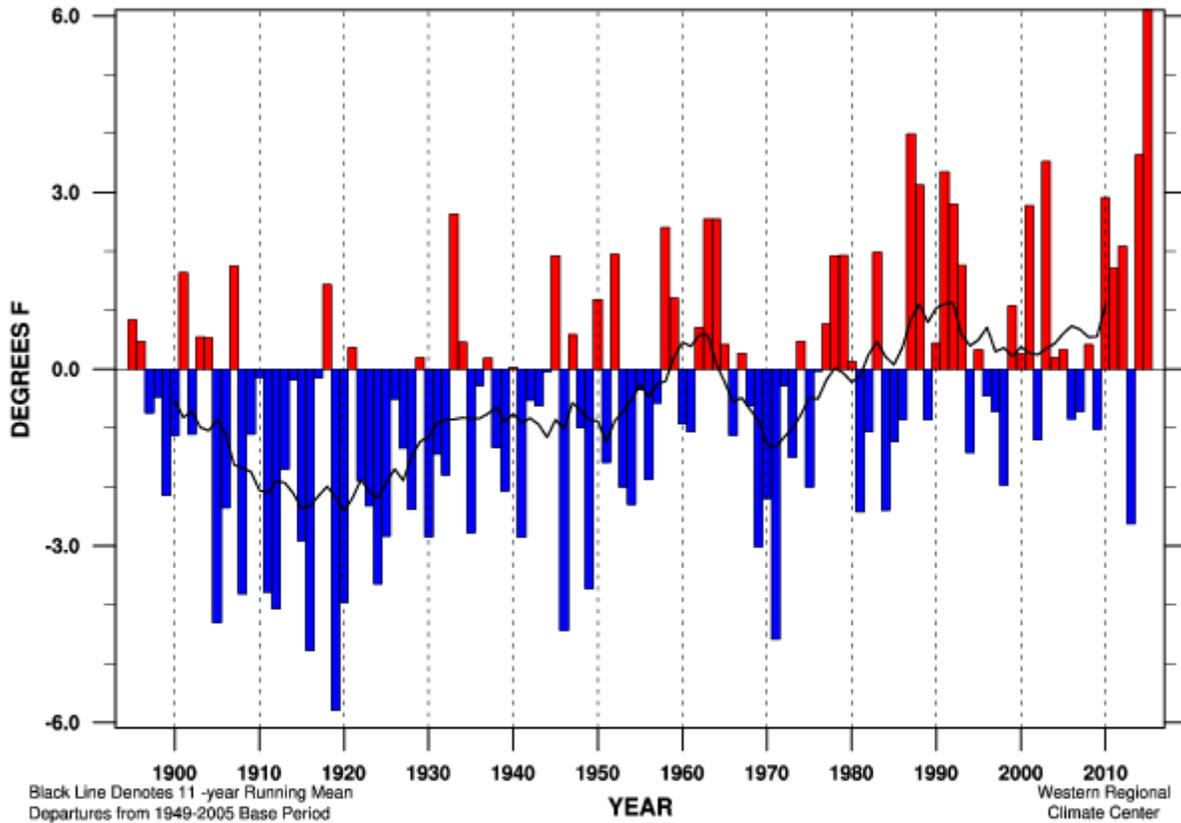
Linear Trend 1895-present	+ 0.17 ± 0.44 in.	(+ 13 ± 36%) per 100 yr	
Linear Trend 1949-present	- 0.13 ± 1.24 in.	(- 10 ± 101%) per 100 yr	
Linear Trend 1975-present	- 0.43 ± 2.50 in.	(- 35 ± 205%) per 100 yr	
Wettest Year	4.41 in. ( 361%) in 1962		MEAN 1.22 in.
Driest Year	0.07 in. ( 5%) in 1917		STDEV 1.00 in.
October	2015	0.78 in. ( 64%)	RANK 49 of 121

## California Statewide Maximum Temperature Departure October

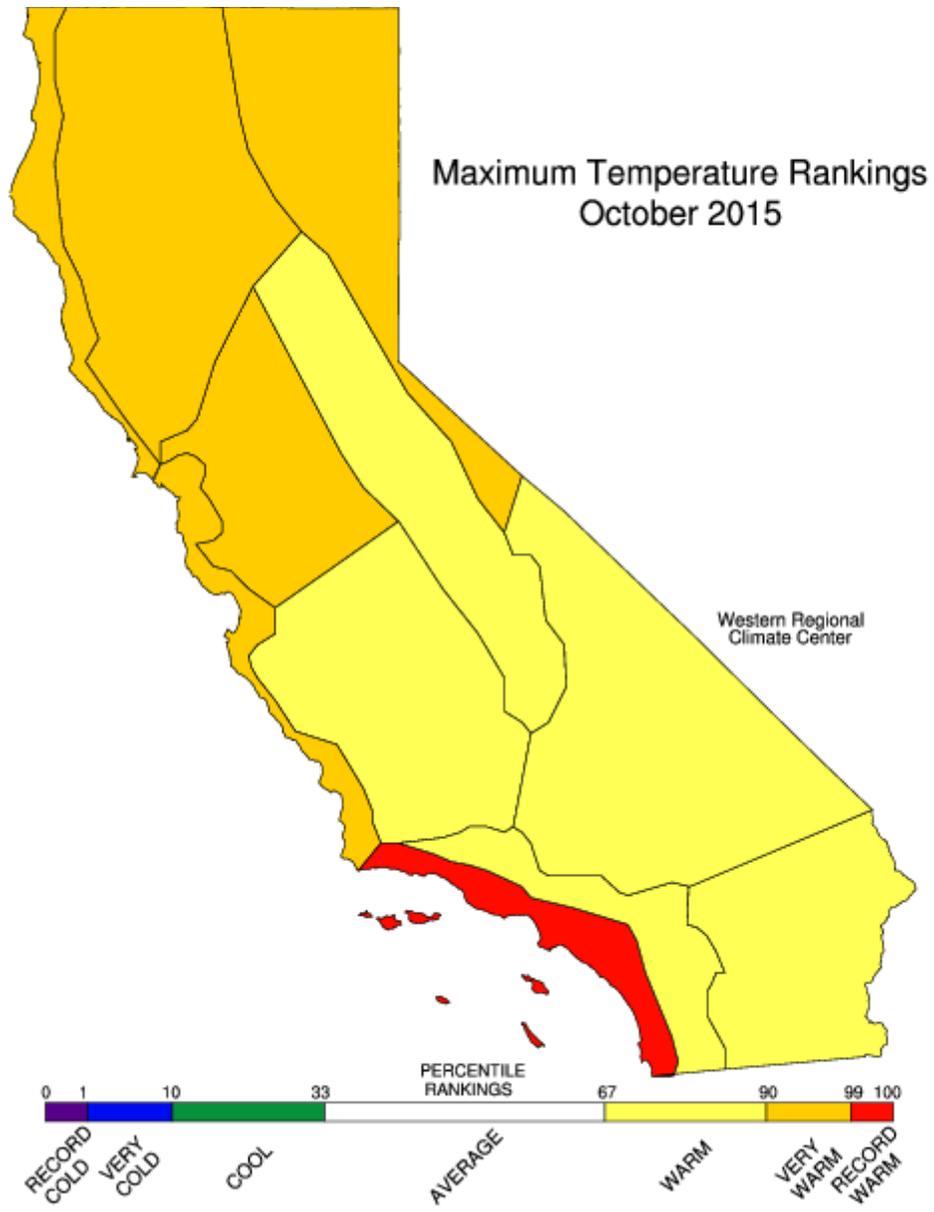


Linear Trend 1895-present	+ 1.61 ± 1.54 °F/100yr	
Linear Trend 1949-present	+ 0.78 ± 3.98 °F/100yr	
Linear Trend 1975-present	+ 1.86 ± 8.41 °F/100yr	
Warmest Year	78.7 °F (+ 6.4 °F) in 2003	MEAN 72.3 °F
Coldest Year	65.2 °F (- 7.0 °F) in 1916	STDEV 3.21 °F
October	2015 75.9 °F (+ 3.6 °F)	RANK 107 of 121

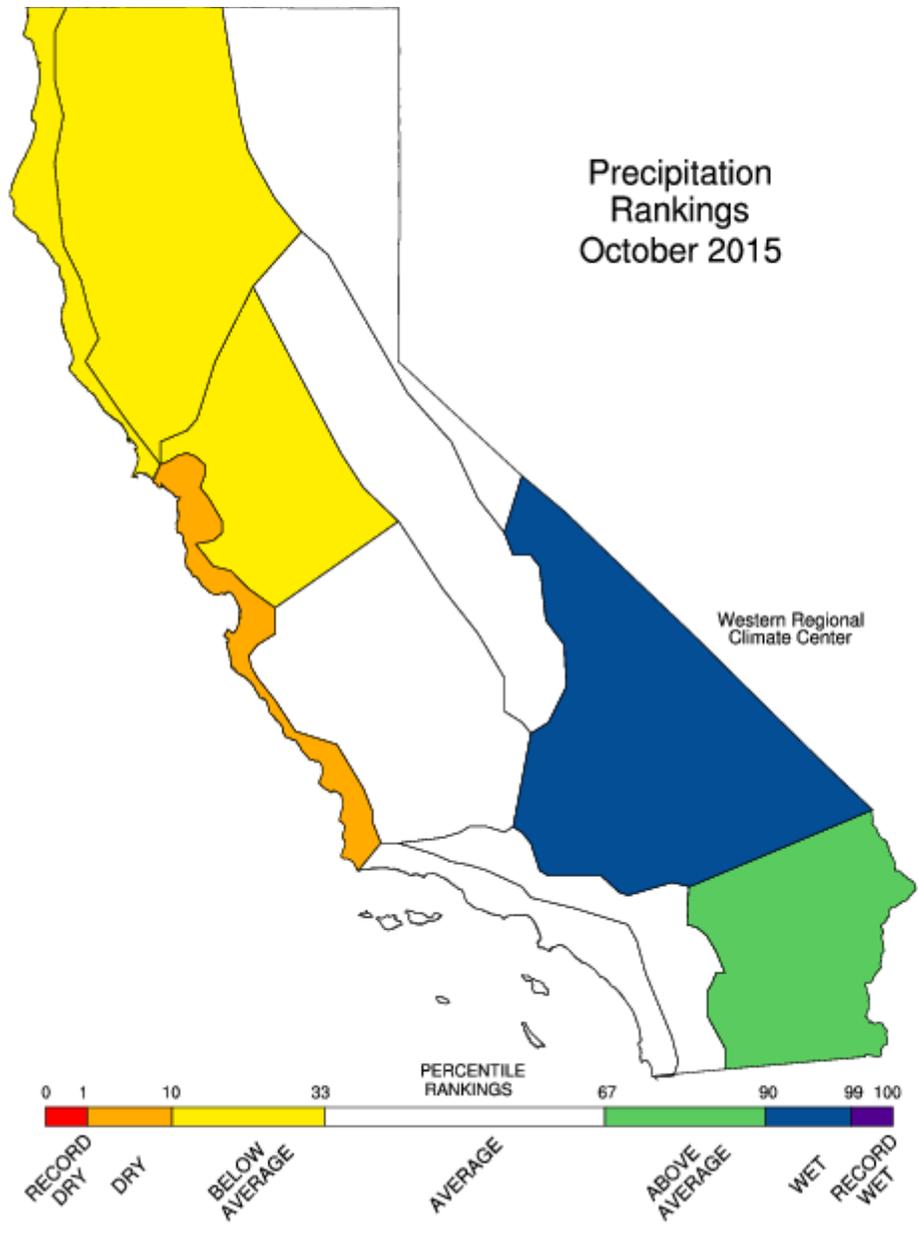
## California Statewide Minimum Temperature Departure October



Linear Trend 1895-present	+ 2.32 ± 1.00 °F/100yr	
Linear Trend 1949-present	+ 3.26 ± 2.48 °F/100yr	
Linear Trend 1975-present	+ 3.82 ± 5.40 °F/100yr	
Warmest Year	50.5 °F (+ 6.1°F) in 2015	MEAN 44.4 °F
Coldest Year	38.6 °F (- 5.8 °F) in 1919	STDEV 1.91 °F
October	2015 50.5 °F (+ 6.1°F)	RANK 121 of 121



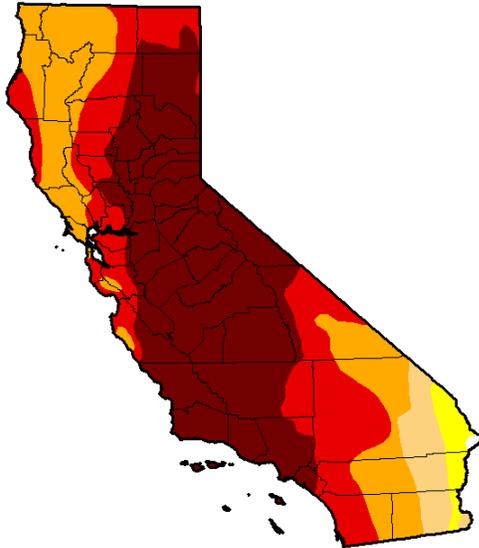






# United States Drought Monitor

## U.S. Drought Monitor California



**September 29, 2015**  
(Released Thursday, Oct. 1, 2015)  
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	0.14	99.86	97.33	92.36	71.08	46.00
<b>Last Week</b> 9/22/2015	0.14	99.86	97.33	92.36	71.08	46.00
<b>3 Months Ago</b> 6/30/2015	0.14	99.86	98.71	94.59	71.08	46.73
<b>Start of Calendar Year</b> 1/23/2014	0.00	100.00	98.12	94.34	77.94	32.21
<b>Start of Water Year</b> 9/30/2014	0.00	100.00	100.00	95.04	81.92	58.41
<b>One Year Ago</b> 9/30/2014	0.00	100.00	100.00	95.04	81.92	58.41

Intensity:

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

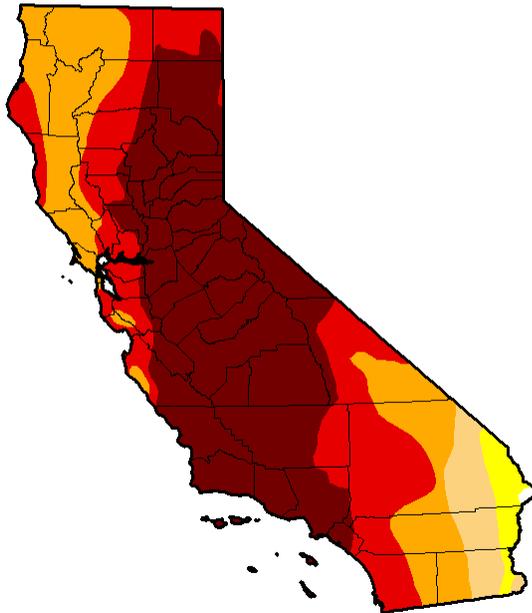
*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.*

**Author:**  
Eric Luebbehusen  
U.S. Department of Agriculture



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

## U.S. Drought Monitor California



**October 27, 2015**  
(Released Thursday, Oct. 29, 2015)  
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	0.14	99.86	97.33	92.27	71.08	46.00
<b>Last Week</b> 10/20/2015	0.14	99.86	97.33	92.27	71.08	46.00
<b>3 Months Ago</b> 7/28/2015	0.14	99.86	97.35	94.59	71.08	46.00
<b>Start of Calendar Year</b> 1/23/2014	0.00	100.00	98.12	94.34	77.94	32.21
<b>Start of Water Year</b> 9/29/2015	0.14	99.86	97.33	92.36	71.08	46.00
<b>One Year Ago</b> 10/29/2014	0.00	100.00	100.00	95.04	81.92	58.41

Intensity:

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

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

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