

California Monthly Climate Summary
September 2014

Weather Highlights

September 2014 was a warm and above average precipitation month for California. According to the Western Region Climate Center's [California Climate Tracker](#), the monthly average temperature was 69.9°F which is 2.7°F higher than the long-term average of 67.1°F. For the water year, the annual average maximum temperature for the state was 71.8°F, 2.8°F above the long term average and ranks as the second warmest in 119 years of record. The water year average minimum temperature statewide was 45.1°F, 1.9°F above the long-term average and ranks as third warmest in 119 years of record. With a statewide average of 0.66 inches, precipitation in September was 137% of average. For the water year, a statewide average of 12.08 inches of precipitation fell which ranks as the third driest water year in 119 years of record. Regional plots of precipitation and temperature for the past month and the water year are included at the end of the document.

September started with high pressure over the eastern Pacific. Over the course of the first week, tropical storm Norbert came ashore over Baja and into Arizona. Moisture and instability from Norbert's passing caused thunderstorms and some flash flooding in the southern part of the State that continued into the second week. High pressure built in following Norbert's passing resulting in record high temperatures. The third week brought the arrival of fall and an early fall weather system. The low moved out of the Gulf of Alaska across the northern part of the state cooling temperatures and bringing widespread precipitation. The Sacramento region received more than 0.5 inches of precipitation with multiple inches falling in the northern mountains. Snow was observed above 7,000 feet. The south coast and mountains stayed dry but cooled off with the passing low.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 150 temperature records tied or broken and 22 precipitation records set for the month. Of the 150 temperature records set, 33 were for new high maximum temperatures and 110 were for new high minimum temperatures. For the water year, there were 1268 temperature records and 110 precipitation records set. The monthly distribution of these records is depicted in plots at the end of the document. Many of the year's precipitation records (78 of the 110) occurred in the last three months due to the westward displaced monsoonal flow.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 57 stations recorded a minimum temperature below freezing in March while 81 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 September was impacted by an early fall storm that hit the northern part of the state at the end of the month. For the CDEC precipitation gages for September 2014, the largest amount of precipitation recorded was at Gasquet Ranger Station in the North Coast region with 3.28 inches. This is 178% of the average precipitation for this station the month. At the other end of the spectrum, 16 stations recorded no precipitation for the month. For the CIMIS network, Moraga in Contra Costa County topped the precipitation charts with 2.8 inches for the month and 40 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 1.63 inches in September. On average, 0.9 inches of precipitation is recorded for the 8-Station index for the month. For water year 2014, the Northern Sierra 8-Station Precipitation Index seasonal total was 31.3 inches, which is about 63 percent of an average water year (50.0 inches). This water year was the eighth driest on record for the 8-Stations. The San Joaquin 5-Station Index recorded 0.8 inches of precipitation for September. On average, 0.69 inches of precipitation is recorded for the 5-Station Index for the month. For the water year the San Joaquin 5-Station Precipitation Index seasonal total was 20.4 inches, which is about 50 percent of an average water year (40.8 inches). This water year was the third driest on record for the 5-Stations.

CoCoRaHS Update

Water Year 2014 continues California's fifth 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 September 25, 2014 is shown at the end of the document. As of the end of September, California has 1169 volunteers signed up spanning 54 of California's 58 counties. The counties without volunteers are Alpine, Colusa, Glenn, and Modoc. The counties with the most volunteers are San Diego and Sonoma with 104 and 103 volunteers respectively. For the month of September, 10,822 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in September was in Humboldt County where 3.47 inches was recorded on 9/25/2014. There was one report of snowfall recorded during the month in Placer County with 0.5 inches recorded on 9/27/2014 and no total depth of snow reported for the month. One hail report was submitted for the month from Santa Cruz County on 9/26/2014. The largest stone size was 1/4 inch. To join CoCoRaHS or find more information, please visit <http://www.cocorahs.org>.

Snowpack and Water Supply Conditions

Water Year 2015 has begun. The Water Supply Index (WSI) for WY2014 for the Sacramento Basin and the San Joaquin Basin fell into the critical category. More information can be found at http://cdec.water.ca.gov/water_supply.html. A historical listing of water year categories for both basins can be found at <http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST>.

Drought Monitor and Seasonal Outlook

The maps for California for August 26, 2014 and September 30, 2014 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 September 30th depiction, 58.41% of California is depicted in the D4 or exceptional drought category, 23.51% of California is depicted in the D3 or extreme drought category, and 13.12% of California is depicted in D2 or severe drought category and 4.96% of California is depicted in D1 or moderate drought. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for October through December from NOAA depicts California in persisting drought throughout the state with the possibility of some improvement in the southern part of the state. 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. Updates are provided twice per month.

For more information on water conditions in California, visit <http://www.water.ca.gov/waterconditions/>. A table showing end-of-September reservoir storage by hydrologic region is shown at the end of this document.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is currently in neutral conditions. Equatorial sea surface temperature anomalies for the tropical Pacific have been positive with values of 0.4°C in the Niño 3.4 at the end of September. The July through September 3-month running mean of the Ocean Niño Index (ONI) is 0.0. 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 transitioning to El Niño conditions by the latter part of fall. More information can be found at the Climate Prediction Center's web site:

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/

Updates are posted weekly. The latest three month outlook (October through December) from NOAA indicates a higher probability for above normal temperatures for the State. For precipitation, a higher probability of above average conditions is forecast across the southern third of the state while below average conditions are forecast for the northern part of the state. 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.

Agricultural Data

September 2014 saw harvests pick up across the state and preparations begin for winter crops. Cotton fields progressing well with 80% rated good to excellent. Alfalfa, sorghum, and Sudan grass were cut, and baled. Rain did not slow the rice harvest. Beans were at or past the halfway point of harvest in the state. Pears and fig harvests started to slow. Prune harvest was completed and post-harvest pruning began.

Almond harvest wound down while pistachio and walnut harvests picked up. Processing tomato harvest continued while pumpkin harvest started. Rangeland continued to deteriorate and supplemental feeding was a necessity. Some ranchers were hauling water for their livestock. For further crop information see <http://www.nass.usda.gov/index.asp>.

Other Climate Summaries

[California Climate Tracker](#) (new product of Western Region Climate Center)
[Golden Gate Weather Service Climate Summary](#)
[NOAA Monthly State of the Climate Report](#)

Statewide Extremes (CDEC)

High Temperature – 114°F (Cahuilla, Colorado River Desert)
 Low Temperature – 18°F (Charlotte Lake, Tulare)
 High Precipitation – 3.28 inches (Gasquet Ranger Station, North Coast)
 Low Precipitation – 0 inches (16 stations)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 102.2 °F (Calipatria, Imperial County)
 Low Average Minimum Temperature – 38.2°F (Alturas, Modoc County)
 High Precipitation – 2.8 inches (Moraga, Contra Costa County)*
 Low Precipitation – 0 inches (40 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	28	42.3	64.7	92.8
SF Bay	8	50.3	67.2	93.6
Central Coast	13	46.5	68.9	95.7
South Coast	46	49.2	74.2	101.1
Sacramento	77	42.0	66.2	91.8
San Joaquin	44	39.7	64.4	89.8
Tulare Lake	17	37.4	62.4	85.7
North Lahontan	26	31.6	54.6	77.3
South Lahontan	17	34.4	61.1	85.5
Colorado River Desert	6	59.2	86.7	107.0
Statewide Weighted Average	282	42.1	65.8	91.7

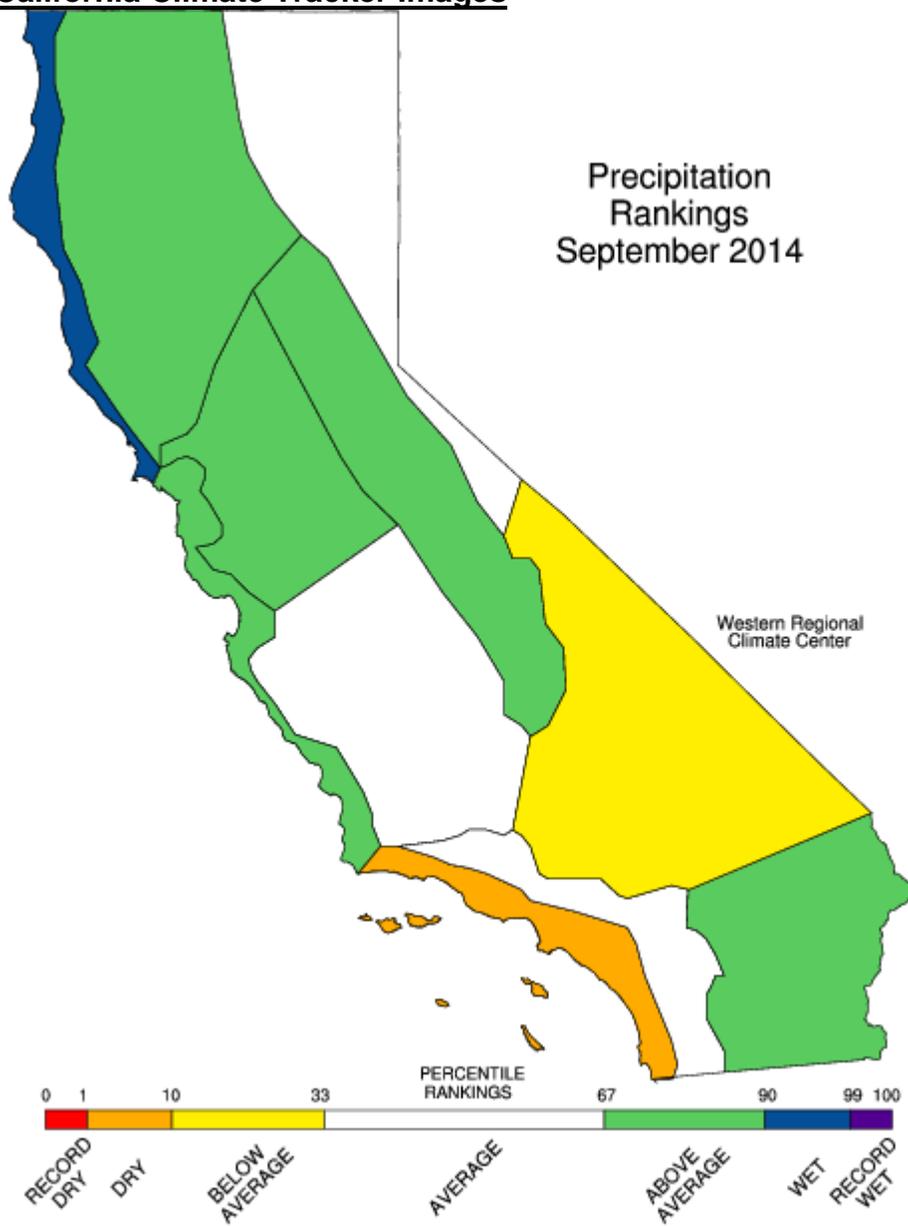
Statewide Precipitation Statistics

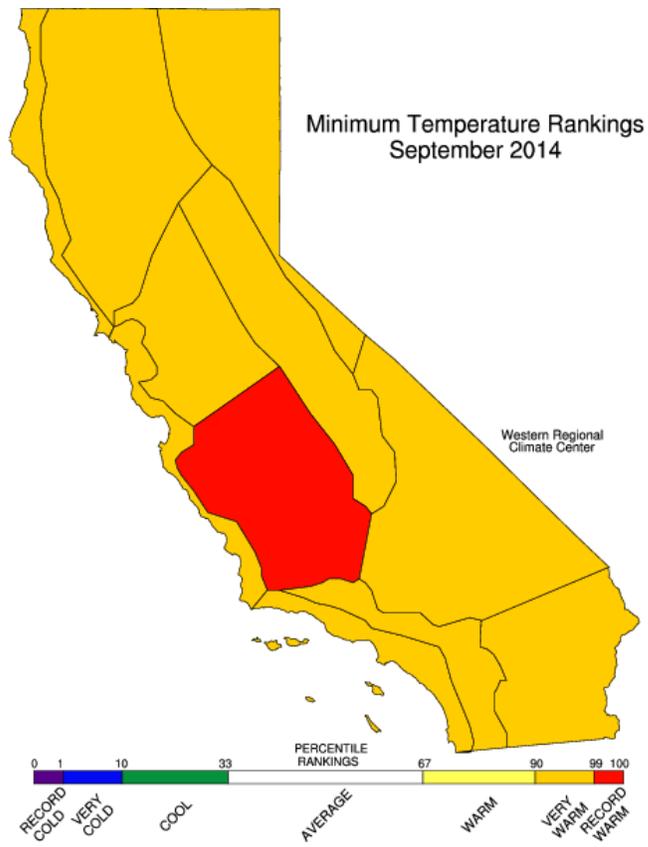
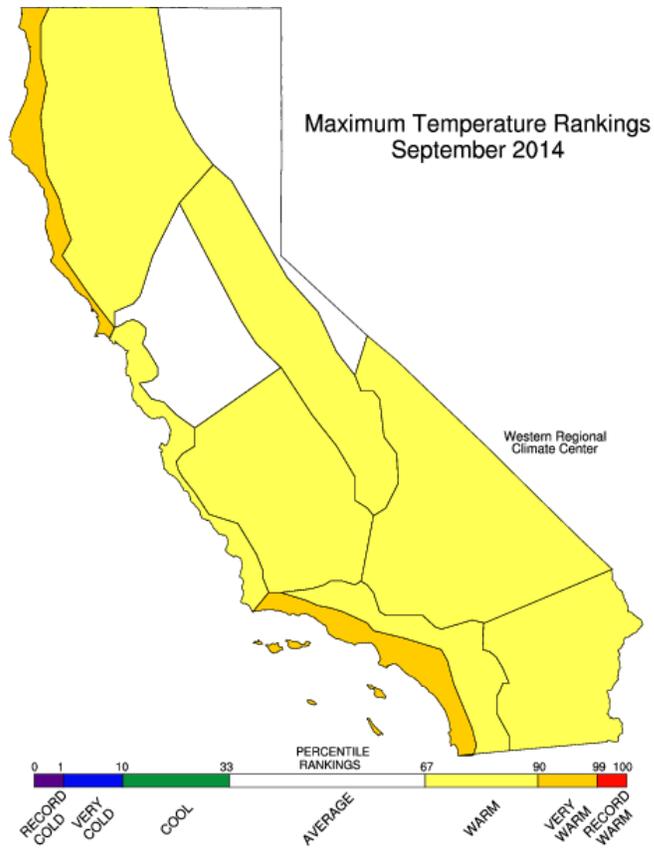
Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	Sep	Oct-Sep	Stations	Sep	Oct-Sep	Sep	Oct-Sep
North Coast	0.27	5	4	4	17	10	10	280.6%	54%
SF Bay	0.03	2	2	2	6	3	3	168.3%	62%
Central Coast	0.06	3	3	3	11	4	4	109.5%	47%
South Coast	0.06	3	3	3	14	11	9	29.7%	41%
Sacramento River	0.26	5	5	5	41	21	21	184.6%	59%
San Joaquin River	0.12	6	5	4	24	13	10	118.5%	53%
Tulare Lake	0.07	5	5	5	28	22	19	56.9%	48%
North Lahontan	0.04	3	3	3	13	7	7	119.2%	80%
South Lahontan	0.06	3	3	3	15	12	12	223.3%	72%
Colorado River	0.03	1	1	1	6	3	3	22.5%	59%
Statewide Weighted Average	1	36	34	33	175	106	98	174.2%	56%

End-of-September Reservoir Storage by Hydrologic Region
Storage in Thousand Acre-Feet (taf)

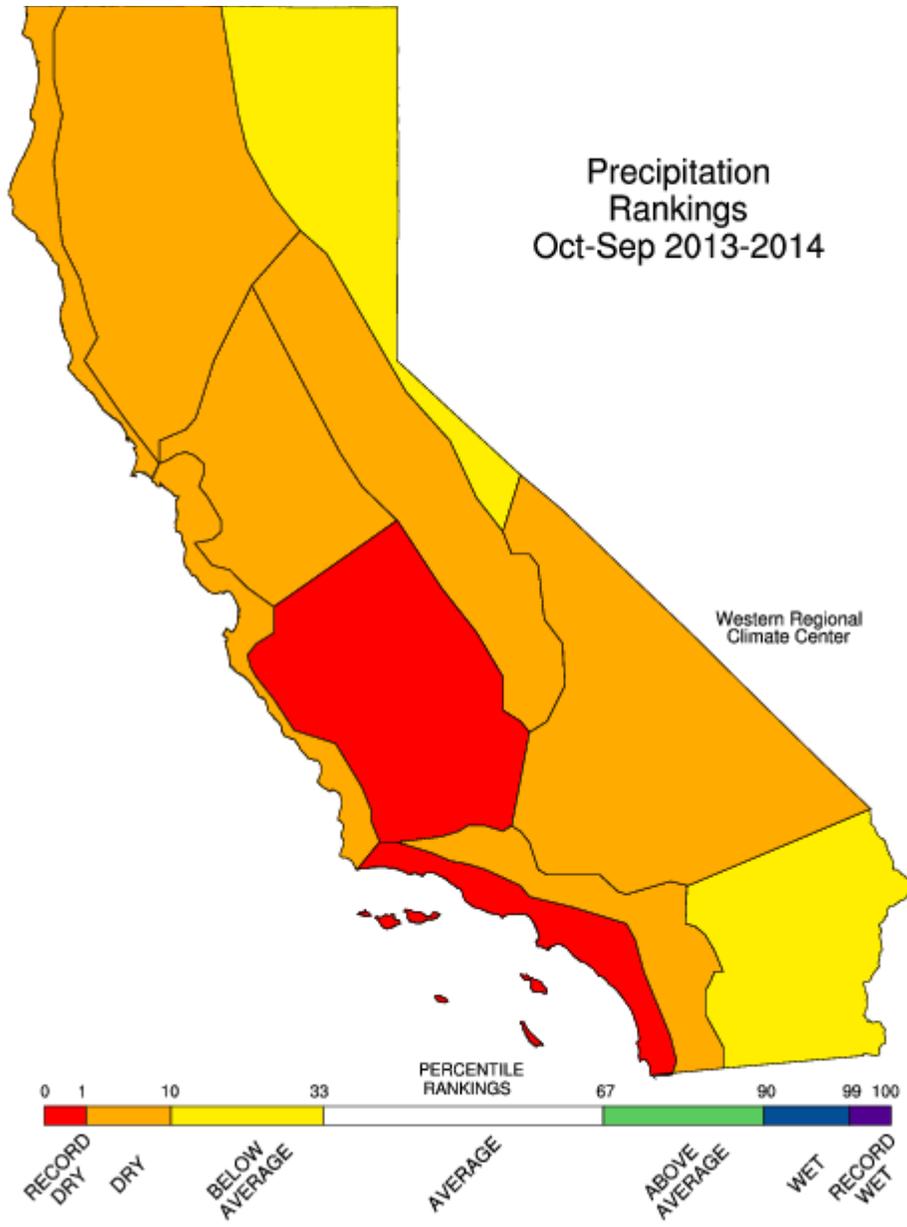
End-of-September Reservoir Storage	Number of Reservoirs	Average Storage (taf)	2014 Storage (taf)	% of Average
North Coast	6	1,988	836	42%
San Francisco Bay	17	420	494	118%
Central Coast	6	546	162	30%
South Coast	29	1,326	866	65%
Sacramento	43	9,912	6,065	61%
San Joaquin	34	6,399	3,638	57%
Tulare	6	678	267	39%
North Lahontan	5	507	91	18%
South Lahontan	8	279	206	74%
Total	154	22,058	12,630	57%

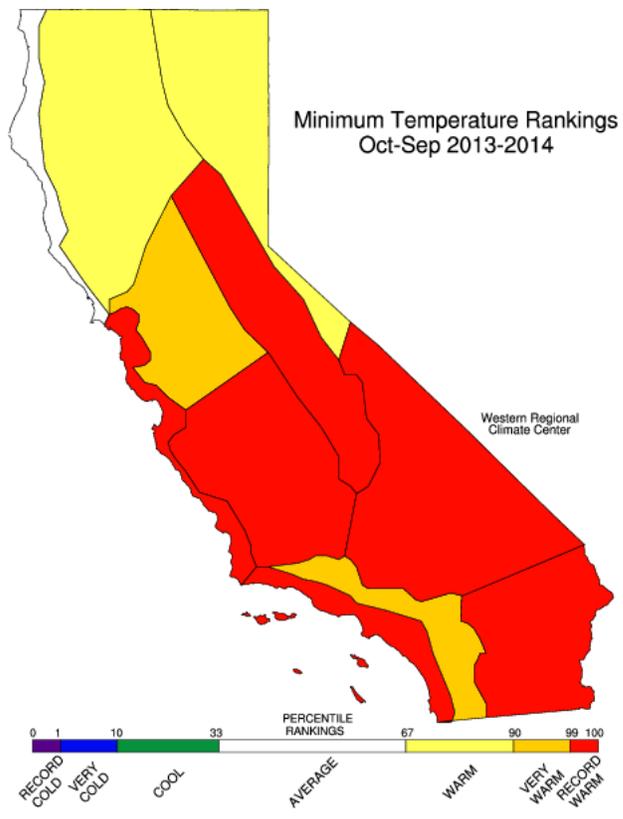
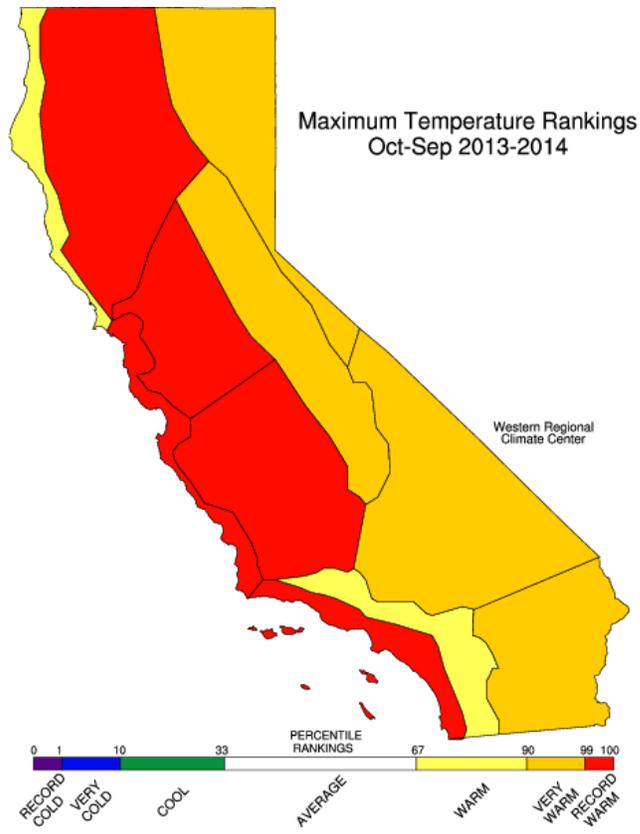
California Climate Tracker Images





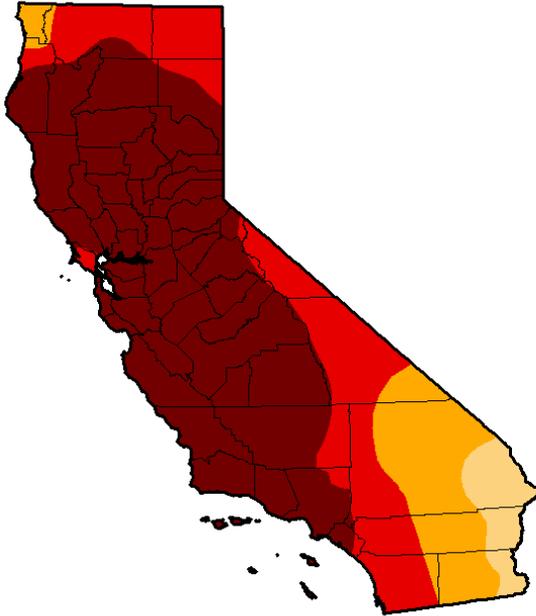
Precipitation Rankings Oct-Sep 2013-2014





United States Drought Monitor

U.S. Drought Monitor California



August 26, 2014

(Released Thursday, Aug. 28, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	95.42	81.92	58.41
Last Week 8/19/2014	0.00	100.00	100.00	97.59	81.92	58.41
3 Months Ago 5/27/2014	0.00	100.00	100.00	100.00	76.68	24.77
Start of Calendar Year 1/25/2013	2.61	97.39	94.25	87.53	27.59	0.00
Start of Water Year 1/01/2013	2.63	97.37	95.95	84.12	11.36	0.00
One Year Ago 8/27/2013	0.00	100.00	98.23	93.86	11.36	0.00

Intensity:

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

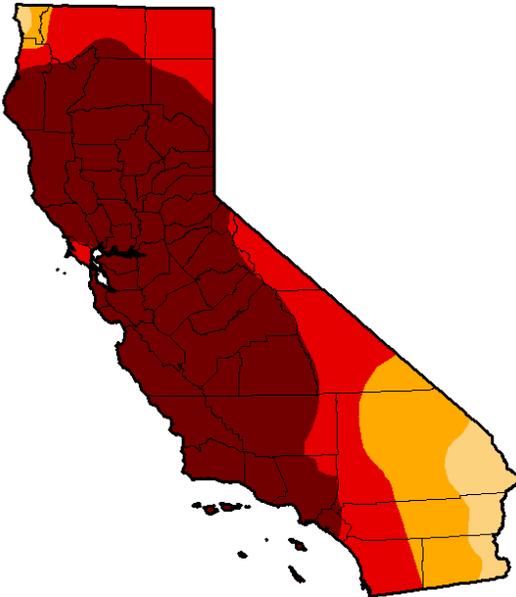
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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

U.S. Drought Monitor California



September 30, 2014

(Released Thursday, Oct. 2, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	95.04	81.92	58.41
Last Week 9/23/2014	0.00	100.00	100.00	95.34	81.92	58.41
3 Months Ago 7/1/2014	0.00	100.00	100.00	100.00	78.97	36.46
Start of Calendar Year 1/25/2013	2.61	97.39	94.25	87.53	27.59	0.00
Start of Water Year 1/01/2013	2.63	97.37	95.95	84.12	11.36	0.00
One Year Ago 10/1/2013	2.63	97.37	95.95	84.12	11.36	0.00

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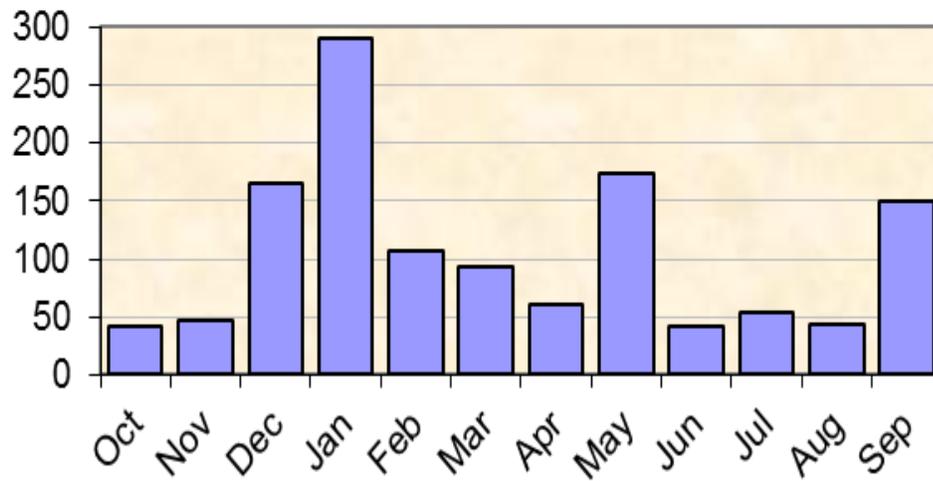
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<http://droughtmonitor.unl.edu/>

Temperature Records by Month for Water Year 2014



Precipitation Records by Month for Water Year 2014

