

California Monthly Climate Summary
March 2015

Weather Highlights

March 2015 was another warm and very dry month for California. According to the Western Region Climate Center's [California Climate Tracker](#), the monthly average temperature was 55.0°F which is 7.1°F higher than the long-term average. This is the third warmest March in 121 years of record. With a statewide average of 0.55 inches, precipitation in March was only 17% of average. This is the fifth driest March in 121 years of record. Statewide plots of precipitation and temperature for the past month are included at the end of the document.

March started out with rain and snow making a rare appearance in the State. It wasn't long before ridging built in and dry conditions returned. Very warm temperatures continued to impact the state with 90s being observed in some locations. A few showers crossed the state in the second week but accumulations were limited. This pattern of warm temperatures with brief interruptions by showers and cooler mountain temperatures continued to the end of the month.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 319 temperature records tied or broken and 1 precipitation record set for the month. Of the 319 temperature records set, 200 were for new high maximum temperatures and 112 were for new high minimum temperatures. Records were set on 23 days of the month. Several locations set new monthly records for warmth and all-time records for March.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 179 stations recorded a minimum temperature below freezing while three 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 March was mixed across the state with record dry conditions in the Sierra and above average conditions in the southeast deserts. For the CDEC precipitation gages for March 2015, the largest amount of precipitation recorded was at Gasquet Ranger Station in the North Coast region with 7.96 inches. This is 72% of the average precipitation for this station the month. At the other end of the spectrum, three stations recorded no precipitation for the month. For the CIMIS network, Escondido SPV in San Diego County topped the precipitation charts with 2.31 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 1.0 inches in March. On average, 6.9 inches of precipitation is recorded for the 8-Station index for the month.

The San Joaquin 5-Station Index recorded 0.4 inches of precipitation for the month. On average, 6.1 inches of precipitation is recorded for the 5-Station Index for the month.

CoCoRaHS Update

Water Year 2015 continues California's sixth 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 March 12, 2015 is shown at the end of the document. As of the end of March, California has 1287 volunteers signed up spanning 56 of California's 58 counties. The counties without volunteers are Alpine and Modoc. During the March Madness recruitment contest, California placed 7th in the states for signing up new volunteers. The counties with the most volunteers are Sonoma and San Diego Counties with 111 volunteers each. For the month of March, 13,289 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in March was in Del Norte County where 2.47 inches was recorded on 03/24/2015. There were 25 reports of snowfall recorded during the month with the largest daily snowfall recorded in El Dorado County with 11 inches recorded on 03/1/2015. Three hail reports were filed with one each from Shasta, San Diego, and Ventura Counties. All were pea sized. To join CoCoRaHS or find more information, please visit <http://www.cocorahs.org>.

Snowpack and Water Supply Conditions

As of March 31, 2015, the regional snow pillow report shows 2 inches of snow water equivalent in the northern region. This is 5% of the April 1 average and 5% of average for the date. For the central region, 2 inches of snow water equivalent is being reported which is 6% of the April 1 average and 6% of average for the date. For the southern region 1 inches of snow water equivalent is being reported which is 5% of the April 1 average and 5% of average for the date. This is the lowest April 1 snow water equivalent on record. The previous low was 25% set in 1977 and 2014. 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/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>.

Drought Monitor and Seasonal Outlook

The maps for California for February 24, 2015 and March 31, 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 March 31 depiction, 41.41% of California is depicted in the D4 or exceptional drought category, 25.19% of California is depicted in the D3 or extreme drought category, and 26.84% of California is depicted in D2 or severe drought category, 4.67% of California is depicted in D1 or moderate drought, 1.74% depicted in abnormally dry or D0, and 0.15% with no drought depiction. Maps are updated weekly.

The U.S. Monthly Drought Outlook for April 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. 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-March 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 El Niño conditions. Equatorial sea surface temperature anomalies for the tropical Pacific have been positive with values of 0.6°C in the Niño 3.4 at the end of March. The January through March 3-month running mean of the Ocean Niño Index (ONI) is 0.5 which is the fifth 3-month running mean value above the 0.5 threshold for an El Niño event. 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 spring and summer. 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. 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

March 2015 saw the orchards leaf out and spring planting progress. Lack of rain necessitated some irrigation and pre-irrigation to have sufficient soil moisture for planting. Vineyards also saw leafing and shoot growth of 1-2 inches. Field crops were prepared and those that were planted were progressing well. Asparagus, broccoli, cauliflower and lettuce harvest was underway. The limited precipitation impacted rangeland conditions. Supplemental feeding continued due to the lack of quality forage. 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 – 102°F (Buttercup & Cahuilla, Colorado Desert)

Low Temperature – -18°F (Casa Vieja Meadow, Tulare)

High Precipitation – 7.96 inches (Gasquet Ranger Station, North Coast)

Low Precipitation – 0 inches (3 stations)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 88.5 °F (Indio 2, Imperial County)

Low Average Minimum Temperature – 24.9°F (Big Bear Lake, San Bernardino County)

High Precipitation – 2.31 inches (Escondido SPV, San Diego 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	28	29.2	49.9	75.6
SF Bay	8	40.9	58.0	79.1
Central Coast	13	36.0	58.5	85.8
South Coast	48	35.7	61.1	87.8
Sacramento	76	28.8	51.2	76.8
San Joaquin	45	24.8	49.0	74.1
Tulare Lake	19	17.5	42.6	67.2
North Lahontan	26	14.5	39.9	63.3
South Lahontan	16	16.6	45.8	71.6
Colorado River Desert	7	42.3	70.0	97.0
Statewide Weighted Average	286	28.0	51.0	76.5

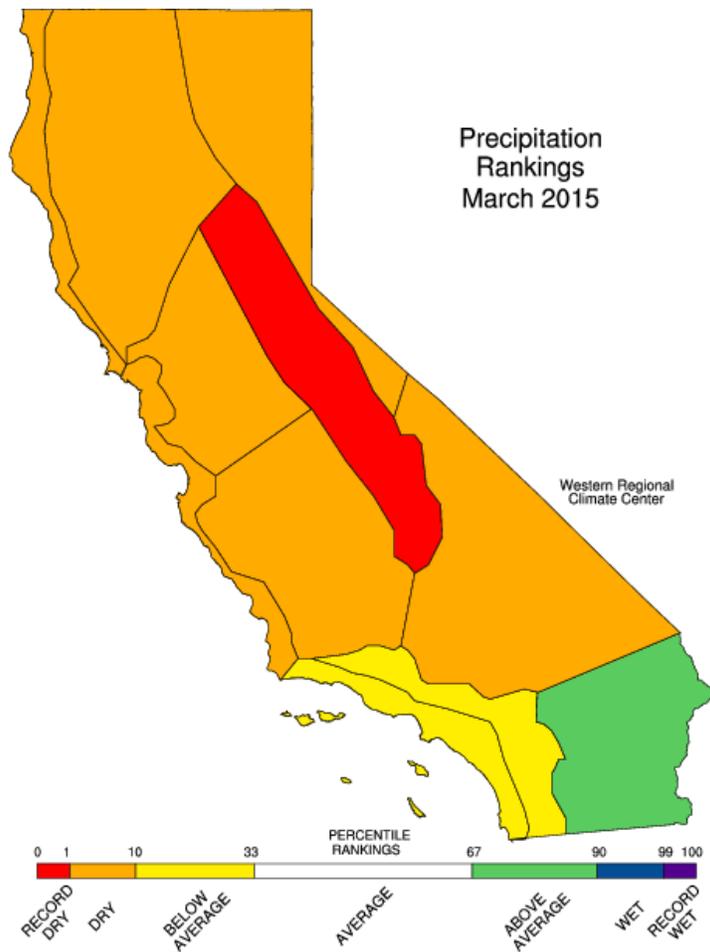
Statewide Precipitation Statistics

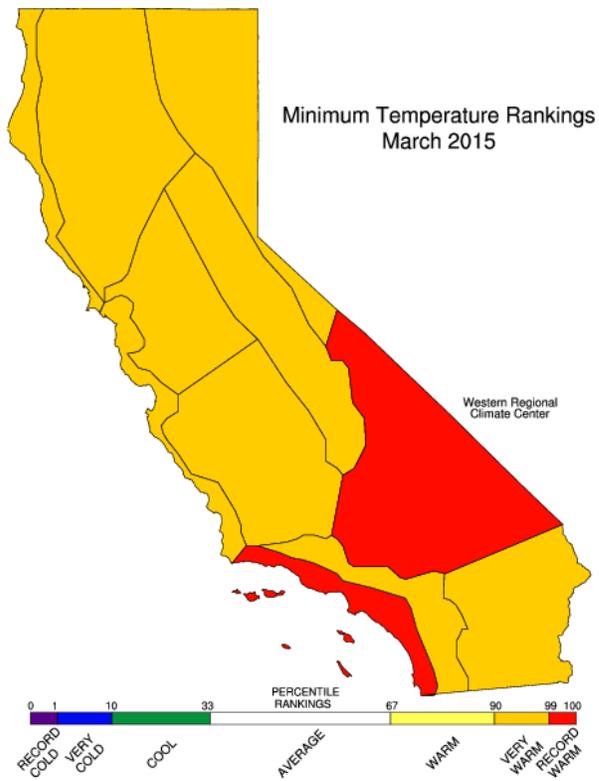
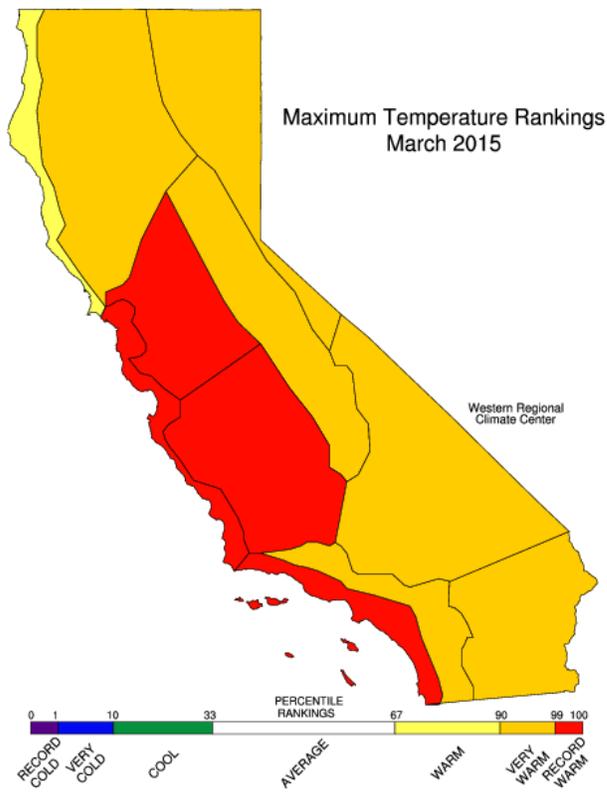
Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	Mar	Oct-Mar	Stations	Mar	Oct-Mar	Mar	Oct-Mar
North Coast	0.27	5	5	5	17	12	12	45.10%	89%
SF Bay	0.03	2	2	2	6	5	5	9.10%	88%
Central Coast	0.06	3	3	3	11	7	6	10.60%	66%
South Coast	0.06	3	3	3	14	10	9	29.70%	59%
Sacramento River	0.26	5	5	5	41	31	30	15.40%	75%
San Joaquin River	0.12	6	6	6	24	18	17	12.10%	56%
Tulare Lake	0.07	5	5	5	29	28	20	10.80%	52%
North Lahontan	0.04	3	3	3	13	11	11	20.90%	58%
South Lahontan	0.06	3	3	3	15	13	13	21.30%	80%
Colorado River	0.03	1	1	1	6	3	3	248.40%	70%
Statewide Weighted Average	1	36	36	36	176	138	126	30.65%	73.3%

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

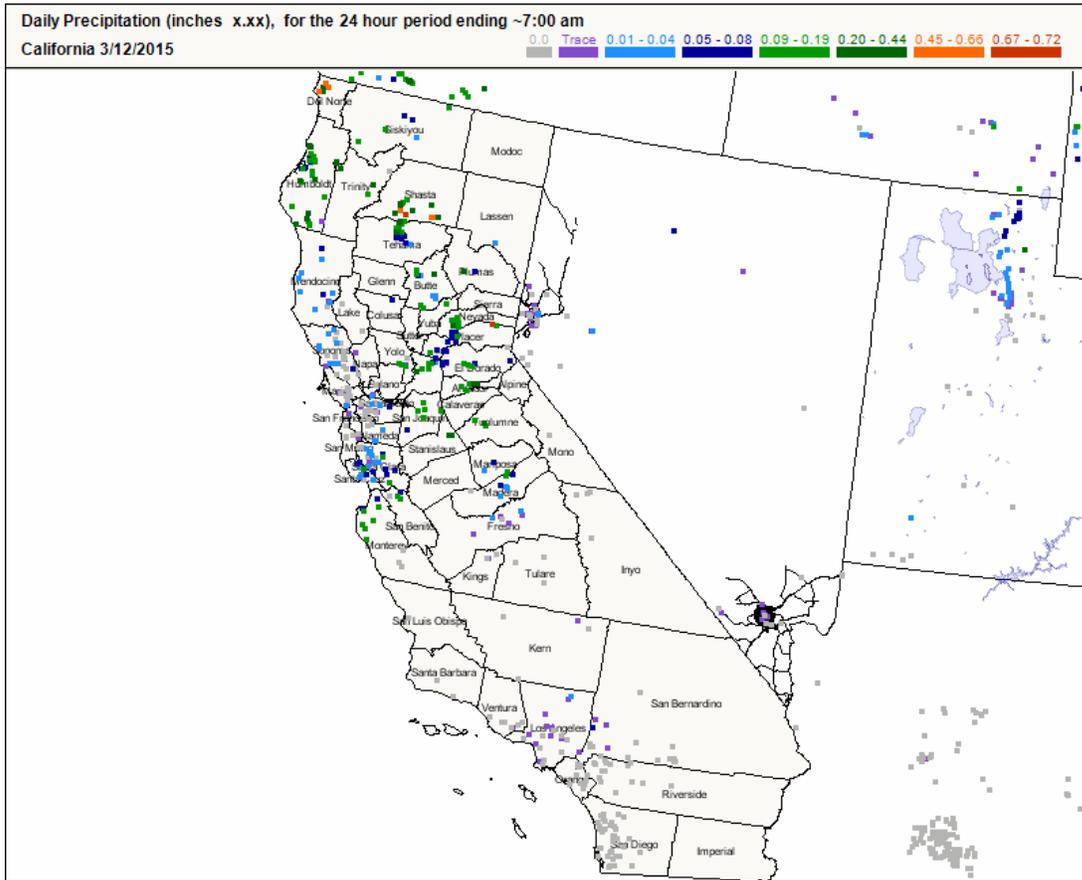
End-of-Month Reservoir Storage	Number of Reservoirs	Average Storage (taf)	2015 Storage (taf)	% of Average
North Coast	6	2,359	1,565	66%
San Francisco Bay	17	526	443	84%
Central Coast	6	701	203	29%
South Coast	29	1,509	864	57%
Sacramento	43	12,243	9,680	79%
San Joaquin	34	7,537	4,641	62%
Tulare	6	915	377	41%
North Lahontan	5	547	74	14%
South Lahontan	8	267	226	85%
Total	154	26,607	18,076	68%

California Climate Tracker Images



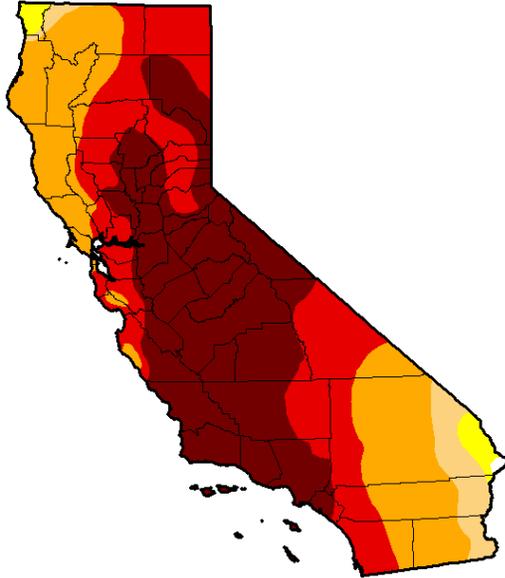


CoCoRaHS Map



United States Drought Monitor

U.S. Drought Monitor California



February 24, 2015

(Released Thursday, Feb. 26, 2015)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.16	99.84	98.10	93.44	67.46	39.92
Last Week 2/17/2015	0.16	99.84	98.10	93.44	67.46	41.20
3 Months Ago 11/25/2014	0.00	100.00	99.72	94.42	79.69	55.08
Start of Calendar Year 12/02/2014	0.00	100.00	98.12	94.34	77.94	32.21
Start of Water Year 9/30/2014	0.00	100.00	100.00	95.04	81.92	58.41
One Year Ago 2/25/2014	0.00	100.00	94.56	90.82	73.83	26.21

Intensity



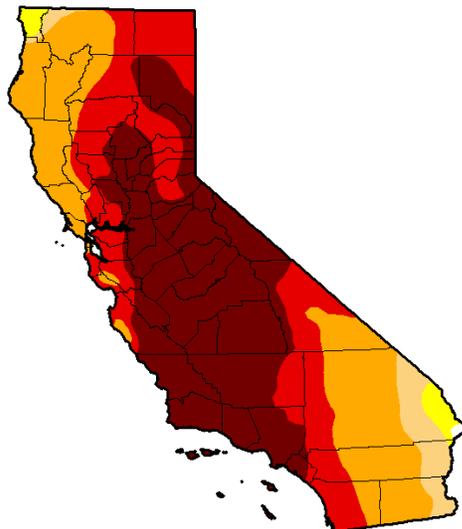
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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

U.S. Drought Monitor California



March 31, 2015

(Released Thursday, Apr. 2, 2015)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.15	99.85	98.11	93.44	66.60	41.41
Last Week 3/24/2015	0.15	99.85	98.11	93.44	66.60	41.41
3 Months Ago 12/02/2014	0.00	100.00	98.12	94.34	77.94	32.21
Start of Calendar Year 12/02/2014	0.00	100.00	98.12	94.34	77.94	32.21
Start of Water Year 9/30/2014	0.00	100.00	100.00	95.04	81.92	58.41
One Year Ago 4/1/2014	0.00	100.00	99.81	95.21	68.76	23.49

Intensity



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