

California Monthly Climate Summary
February 2009

Weather Highlights

February ended up changing the long running pattern of warm and dry months for California. According to the Western Region Climate Center's [California Climate Tracker](#), the monthly average temperature was 43.4°F which is 1.1°F lower than the long-term average of 44.4°F. With a statewide average of 4.88 inches, precipitation for February was only 133% of the long term average.

February started out unseasonably warm and dry across most of the state. Towards the end of the first week, two Pacific storms came ashore bringing widespread rain. The south coast and south central coast saw the heaviest precipitation from these events. During the second week, the storminess continued with a slow moving system bringing valley rain and mountain snow to the northern part of the state. Temperatures were kept down due to a cold air mass embedded in the system. Tightening pressure gradients led to gusty wind conditions at the end of the week. The rain and snow continued in week three with a cold system bringing snow down to the foothills of northern California and to the Grapevine in southern California. A following system tapped into a more tropical moisture source which raised snow levels and brought periods of heavy rain. The storms of the latter part of the month were focused more on the northern half of the state with offshore flow and warm temperatures resulting for the southern part of the state.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 55 temperature records tied or broken and 9 precipitation records tied and broken for the month. Of the 55 temperature records, 25 were for new high maximum temperatures. Records were set over 13 days of the month and 7 of the 9 Weather Forecast Offices had new records to report. On February 3rd, San Jose broke a 1906 high temperature record by one degree with a reading of 74°F. Santa Rosa tied its 1906 high temperature record on the 3rd with a reading of 73°F. New high temperature records were also tied or set on the 3rd at Moffett Field, Bakersfield's Meadows Field and Madera's municipal airport. One week later, new low temperature records were being set across the state. San Luis Obispo got down to 34°F on February 11th tying a 1986 record. Camarillo got down to 33°F breaking their 1965 record of 35°F. Woodland hills dipped below freezing with a reading of 30°F that tied the old record set in 1956. On February 22nd, Big Bear Lake likely set a new high minimum temperature record, but data problems prevented a proper recording of the temperature. Nearby sensors recorded values of 35°F which would have been five degrees greater than the 2007 record of 30°F for that day.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 204 stations recorded a minimum temperature below freezing in February. 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 and CIMIS networks is also shown.

Precipitation in February was abundant with the series of storms that crossed the state. The largest amount of precipitation recorded in the CDEC precipitation gages for February 2009 was De Sabla in the Sacramento Basin (Butte Creek) with 22.84 inches. Normally this station records 10.47 inches of precipitation in February. At the other end of the spectrum, Imperial Valley in the Colorado River Desert region recorded 0.37 inches for February. This is still greater than the February average of 0.36 inches for that station. For the CIMIS network, Oakville in Napa County topped the precipitation charts with 13.19 inches for the month. The 8-Station Index for northern California precipitation recorded 11.9 inches in February with 22 days showing precipitation. On average 8.9 inches of precipitation is recorded for the 8-Station index. Statewide, the average precipitation for February was 135% of the long-term average based on the California Data Exchange Center (CDEC) gages. Precipitation percentages by region from the CDEC gages are shown in a table at the end of this document.

The precipitation provided ample runoff into the state's reservoirs in February. Lake Shasta gained over one million acre feet (MAF) of storage in February going from 1.41 MAF to 2.01 MAF. Lake Oroville gained over 380,000 acre feet of storage jumping from 1.02 MAF to 1.38 MAF. Folsom Lake moved from 247,000 thousand acre feet (taf) to 432 taf in February coming close to reaching the storage limits for flood control season. This jump in storage is a far cry from January when Lake Shasta and Lake Oroville were approaching record low storages.

For February, the Drought Monitor showed improvement across the northern part of the state due to the heavy rains. The maps for California for February 3, 2009 and March 3, 2009 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. The very northwest part of the state is not considered in any drought condition. The rest of California is depicted in either D0 (abnormally dry), D1 (moderate drought) conditions, D2 (severe drought), or D3 (extreme drought) conditions. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for March through May from NOAA depicts California with persisting drought conditions across most of the state. Improvement is expected for the North Coast and parts of the Sacramento Basin. Updates are provided twice per month. Maps and information can be found at http://cdec.water.ca.gov/water_supply.html

Outlooks for the water year 2009 water supply index categories are critical for the Sacramento Basin and dry for the San Joaquin Basin. Water supply information for California 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>.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is being classified as a La Niña pattern, although conditions have weakened. Equatorial sea surface temperature anomalies for the tropical Pacific for February were around 0.5°C below average for most regions with the exception of the Niño 1+2 region which has transitioned to a positive anomaly of 0.4°C. The December through February 3-month running mean of the Ocean Niño Index is -0.8 which is the 2nd consecutive 3-month running mean value to be below the threshold value of -0.5°C. Five consecutive values need to be below the threshold for the event to be classified as a La Niña event. Both statistical and dynamical models forecast La Niña conditions to weaken while lasting into spring of 2009. 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 (March through May) from NOAA indicates an equal chance of above, below or near normal temperatures for most of the state with above normal temperatures expected for southeastern California and for the north coast which is forecast to have below normal

temperatures. For precipitation, below average conditions are forecast for the very southeast 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

February saw the start of nut tree flowering and the beginning of spring planting efforts. The wheat crop is in excellent condition and winter vegetables grew well in the cool weather. Citrus harvest continued with good quality reported. Kiwis were also harvested along with farmer's market crops. Orchard site preparation was winding down while vineyard preparation continued. Bees were placed in orchards prior to bud break. The almond bloom pollination was hindered by the rains and wet weather hampered some field activities. Some beef cow calving was reported and spring lambing and kidding continued. Dairy herds were reduced in response to low market conditions. The market was low on most commodities. While the rain improved nonirrigated rangeland, growth was slow and supplemental feeding continued. More spring rains will be needed to continue rangeland improvements. 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 – 93°F (Buttercup, Colorado River Desert)

Low Temperature – -12°F (Charlotte Lake, Tulare)

High Precipitation – 22.84 inches (De Sabla, Sacramento Basin)

Low Precipitation – 0.37 inches (Imperial Valley, Colorado River Desert)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 79.6°F (Borrego Springs, San Diego County)

Low Average Minimum Temperature – 18.9°F (Big Bear Lake, San Bernardino County)

High Precipitation – 13.19 inches (Oakville, Napa County)

Low Precipitation – 0 inches (6 stations)

Statewide Precipitation Statistics

Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	Feb	Oct-Feb	Stations	Feb	Oct-Feb	Feb	Oct-Feb
North Coast	0.27	5	5	5	17	12	9	110%	70%
SF Bay	0.03	3	3	3	6	4	4	239%	98%
Central Coast	0.06	5	3	3	10	4	4	147%	79%
South Coast	0.06	5	5	5	15	12	9	120%	84%
Sacramento River	0.26	10	10	10	43	40	37	153%	80%
San Joaquin River	0.12	8	7	7	27	21	20	119%	90%
Tulare Lake	0.07	5	5	5	27	25	25	120%	87%
North Lahontan	0.04	6	6	5	14	11	10	65%	64%
South Lahontan	0.06	5	3	3	14	7	7	218%	119%
Colorado River	0.03	2	2	2	6	4	2	131%	108%
Statewide Weighted Average	1	54	49	48	179	140	127	135 %	82.3 %

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	31	26.2	41.6	65.0
SF Bay	17	36.0	47.7	61.7
Central Coast	37	37.9	50.1	67.8
South Coast	67	33.2	50.5	74.6
Sacramento	88	23.5	40.8	64.6
San Joaquin	70	25.8	42.6	63.8
Tulare Lake	12	15.2	36.4	63.1
North Lahontan	29	6.0	30.1	53.3
South Lahontan	18	20.3	38.6	59.1
Colorado River Desert	23	39.9	56.4	75.5
Statewide Weighted Average	392	25.4	42.2	64.8

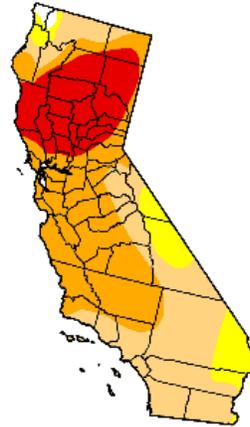
U.S. Drought Monitor California

February 3, 2009
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.8	99.2	89.4	54.7	19.0	0.0
Last Week (01/27/2009 map)	1.2	98.8	88.2	48.9	15.9	0.0
3 Months Ago (11/11/2008 map)	4.7	95.3	86.0	41.3	0.0	0.0
Start of Calendar Year (01/06/2009 map)	1.7	98.3	88.2	41.3	2.8	0.0
Start of Water Year (10/07/2008 map)	0.0	100.0	95.9	55.0	0.0	0.0
One Year Ago (02/05/2008 map)	18.2	81.8	36.6	14.1	0.0	0.0

Intensity:

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



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



Released Thursday, February 5, 2009

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<http://drought.unl.edu/dm>

U.S. Drought Monitor California

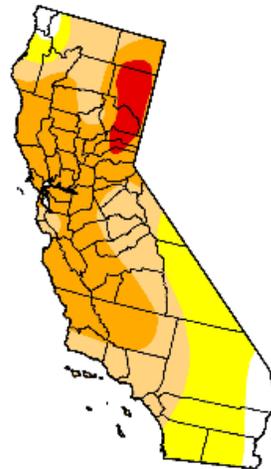
March 3, 2009

Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	5.2	94.8	70.7	41.8	4.4	0.0
Last Week (02/24/2009 map)	5.2	94.8	70.7	49.7	14.8	0.0
3 Months Ago (12/09/2008 map)	0.0	100.0	87.4	49.2	3.2	0.0
Start of Calendar Year (01/06/2009 map)	1.7	98.3	88.2	41.3	2.8	0.0
Start of Water Year (10/07/2008 map)	0.0	100.0	95.9	55.0	0.0	0.0
One Year Ago (03/04/2008 map)	44.5	55.5	34.3	13.3	0.0	0.0

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