

California Monthly Climate Summary
February 2010

Weather Highlights

February 2010 was a warmer than average, drier than average month for California. According to the Western Region Climate Center's [California Climate Tracker](#), the monthly average temperature was 45.0°F which is 0.6°F higher than the long-term average. With a statewide average of 3.40 inches, precipitation for February was 93% of the long term average.

February 2010 started with a continuation of storms that closed out January. The storminess continued into the second week with one of the storms bringing intense rain to the burn areas of Southern California leading to landslides and debris flows that impacted some of the residential communities. The second week closed out with high pressure building in leading to clear skies and above normal temperatures. Southern California reached and surpassed 80°F in some places. The third week of February saw a couple of low pressure systems pass below the high pressure system and brought rain and snow to many parts of the state. The storm pattern continued through the final week of February with moderate to heavy rains in Southern California. February did close out with a high pressure system building over Northern California but scattered showers continuing for Southern California.

Preliminary records, reported on the National Weather Service Record Event Report, shows that statewide there were 9 temperature records tied or broken and 9 precipitation record tied or broken for the month. Of the 9 temperature records set in February, 5 were for new high maximum temperatures. Records were set over 8 days of the month. On February 6th, the Barstow-Daggett ASOS measured 1.06 inches of precipitation which ties the highest one day total for February and broke the old daily record of 0.20 inches set in 1969. On February 23rd, Santa Rosa broke a 1916 low maximum temperature record with a reading of 49°F. The old record was 51°F. Also on February 23rd Stockton set a new daily precipitation record with 1.03 inches falling. This broke the old record of 0.33 inches set in 1998. Modesto also set a new daily precipitation record on the 23rd with 1.25 inches. The old record was 0.51 inches set in 2000. For the month of February, the Barstow-Daggett airport recorded its 8th wettest February with a total of 1.58 inches of precipitation. The wettest February for the site was 1998 when 2.54 inches fell. Records date back to 1944 for this location.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 200 stations recorded a minimum temperature below freezing in February while no 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 and CIMIS networks is also shown at the end of the summary.

Precipitation in February ranged from below normal in the northeast part of the state and Sierra to slightly above average in the south part of the state. For the CDEC precipitation gages for January 2010, the largest amount of precipitation recorded was the Dunsmuir Treatment Plant in the Upper Sacramento River Basin with 12.24 inches. This is 143% of the average precipitation for this station for February. At the other end of the spectrum, Cedarville recorded 0.21 inches of precipitation for the month. This is 15% of the average precipitation for this station for February. For the CIMIS network, Monrovia in Los Angeles County topped the precipitation charts with 11.21 inches for the month and 7 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. This is normally not an issue in the winter. The 8-Station Index for northern California precipitation recorded 6.9 inches in February with 24 days showing precipitation. On average, 8 inches of precipitation is recorded for the 8-Station index in February. Statewide, the average precipitation for February was 101% 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.

CoCoRaHS Update

February 2010 continues California's second 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 in participating states. As of the end of February 2010, California has 650 volunteers signed up spanning 51 of California's 58 counties. The county with the most volunteers at the end of February is Sonoma with 84 volunteers. For the month of February 9,035 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in February was in Los Angeles County with 5.3 inches recorded on 2/6/10. Twelve hail reports were submitted in February from 7 Counties. Reports were for 1.5 inch (ping pong ball size) hail or smaller. The ping pong ball size hail was recorded in Los Angeles County on February 9th. Forty-three snow reports were included with the precipitation reports with a 17 inch depth being the largest new snow total from Placer County on the 24th. The largest total snow depth reported was 99 inches in Placer County on the 27th. To join CoCoRaHS or find more information, please visit <http://www.cocorahs.org>.

Snowpack and Water Supply Conditions

As of March 15th, the snow pillow sensors show the statewide snowpack to be 111% of average for the date and 107% of the April 1st peak. The northern region (from the Trinity to the Feather and Truckee Basins) shows 36 inches of snow water equivalent which is 129% of average to date and 127% of the April 1st peak. The central region (the Yuba Basin to the Merced/Walker Basins) shows 28 inches of snow water equivalent which is 96% of average to date and 93% of the April 1st peak. The southern region (the San Joaquin Basin to the Kern Basin) shows 29 inches of snow water equivalent which is 113% of average to date and 108% of the April 1st peak.

October kicked off water year 2010 for the water supply index categories. Water year 2009 resulted in a dry category for the Sacramento Basin and below normal for the San Joaquin Basin. The latest water supply index forecast for 2010 has the Sacramento Basin in the dry category and the San Joaquin Basin in the Below Normal category. 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/cqi-progs/iodir/WSIHIST>.

Drought Monitor and Seasonal Outlook

The maps for California's depiction by the Drought Monitor for February 2, 2010 and March 2, 2010 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 2nd depiction, California is depicted in either D0 (abnormally dry), D1 (moderate drought) conditions, or D2 (severe drought) conditions. The coastal regions and the Sierra region are considered drought free. The D2 category is now limited to the north. Changes in areas in D0 or D1 were also observed. Drought free area in California was 64.6% for the depiction on March 2nd. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for March through May from NOAA depicts California with improving conditions in the remaining drought areas as depicted by the Drought Monitor. This forecast is based on climatology and an expectation for a wetter than average conditions to continue largely due to the evolving El Niño conditions in the tropical Pacific. Updates are provided twice per month. Maps and information can be found at http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html.

The California Nevada River Forecast Center has begun producing some drought monitoring tools for California. These tools look at the frequency associated with precipitation deficits for the Northern California Eight Station Index and the San Joaquin Five Station Index. Another tool looks at the frequency of end-of-month storage for select reservoirs in California. The frequencies of the observations are related to the Drought Monitor's drought categories D0 through D4. These tools can be found at <http://www.cnrfc.noaa.gov/climate.php>. For February, the Eight Station Index is in drought free conditions for a 12-month period and D0 for the 24 month period. The Five Station Index is drought free for both periods. For the reservoirs for end-of-February storage, Oroville is at a D3 storage while Trinity, Berryessa, Folsom, Lake Tahoe, San Luis and Casitas are at a D1 level. The Nacimiento/San Antonio reservoir pair is at a D0 level and all other reservoirs on the graphic are considered to be drought-free.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is being classified as an El Niño pattern. Equatorial sea surface temperature anomalies for the tropical Pacific have been positive with values of 1.0°C in the Niño 3.4 at the end of February. The December through February 3-month running mean of the Ocean Niño Index (ONI) is 1.7 which is the eighth ONI value above the threshold to qualify for an El Niño event. Five consecutive ONI values need to be above the threshold value of 0.5 for conditions to be classified as an El Niño event. Most forecast models have the tropical sea surface temperatures cooling through the spring of 2010. 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 equal chances for above or below normal temperatures for the southern part of the state of California and a higher probability of above normal temperatures for the northern part of the state. For precipitation, the southern has a higher probability of above normal conditions and the northern half of the state has equal chances for above or below normal precipitation. 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 2010 saw stone fruit and almond trees bloom and continued field preparations for spring planting. Rice fields were drained and weed control continued in wheat, rye, and oat fields. Tangerine, navel orange, grapefruit and lemon crops continued to be harvested with some interruptions due to weather. Foothill rangeland showed more improvement with the continued rainfall. The need for supplemental feeding started to diminish during February. Localized flooding impacted some dairy and feedlot operations. Bees continued to come in from out of state for the upcoming pollination season. 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 – 86°F (Santa Fe, South Coast)

Low Temperature – -2°F (Sawmill, South Lahontan)

High Precipitation – 12.24 inches (Dunsmuir Treatment Plant, Sacramento)

Low Precipitation – 0.21 inches (Cedarville, North Lahontan)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 75.1⁰F (UC San Luis, Imperial County)

Low Average Minimum Temperature – 17⁰F (Big Bear Lake, San Bernardino County)

High Precipitation – 11.21 inches (Monrovia, Los Angeles County)*

Low Precipitation – 0 inches (7 stations)

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

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	12	80.8%	83%
SF Bay	0.03	3	3	3	6	5	5	103.5%	108%
Central Coast	0.06	5	5	5	10	9	9	121.6%	129%
South Coast	0.06	5	5	5	15	13	13	125.2%	125%
Sacramento River	0.26	10	10	10	43	36	35	89.7%	98%
San Joaquin River	0.12	8	7	7	27	25	25	99.3%	105%
Tulare Lake	0.07	5	5	5	27	27	24	134.5%	120%
North Lahontan	0.04	6	6	5	14	11	9	64.0%	89%
South Lahontan	0.06	5	4	4	14	8	8	182.3%	163%
Colorado River	0.03	2	2	2	6	5	5	112.3%	190%
Statewide Weighted Average	1	54	52	51	179	151	145	101.25%	106%

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	29	31.6	43.5	62.5
SF Bay	17	39.9	49.4	62.4
Central Coast	37	40.6	51.3	67.1
South Coast	66	36.3	51.4	73.7
Sacramento	94	27.4	42.1	63.9
San Joaquin	75	42.5	29.3	61.1
Tulare Lake	17	17.5	34.2	58.4
North Lahontan	30	12.1	32.0	51.2
South Lahontan	22	20.7	37.6	58.5
Colorado River Desert	22	42.7	57.5	74.1
Statewide Weighted Average	409	29.2	43.1	63.0

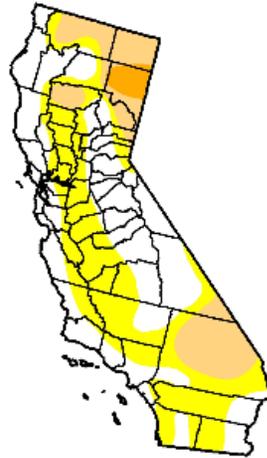
U.S. Drought Monitor

California

February 2, 2010
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	43.2	56.8	18.8	2.2	0.0	0.0
Last Week (01/26/2010 map)	42.6	57.4	19.4	2.2	0.0	0.0
3 Months Ago (11/10/2009 map)	7.6	92.4	77.3	17.7	0.0	0.0
Start of Calendar Year (01/05/2010 map)	6.6	93.4	72.8	9.0	0.0	0.0
Start of Water Year (10/06/2009 map)	0.0	100.0	73.4	45.8	0.0	0.0
One Year Ago (02/03/2009 map)	0.8	99.2	89.4	54.7	19.0	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

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



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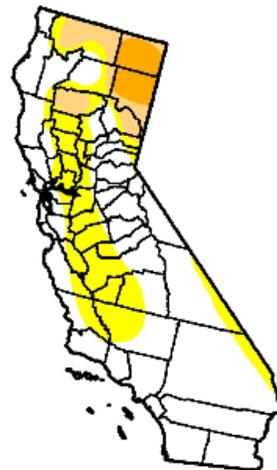
U.S. Drought Monitor

California

March 2, 2010
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	64.6	35.4	10.7	4.3	0.0	0.0
Last Week (02/23/2010 map)	64.6	35.4	10.7	4.3	0.0	0.0
3 Months Ago (12/08/2009 map)	7.7	92.3	74.0	17.3	0.0	0.0
Start of Calendar Year (01/05/2010 map)	6.6	93.4	72.8	9.0	0.0	0.0
Start of Water Year (10/06/2009 map)	0.0	100.0	73.4	45.8	0.0	0.0
One Year Ago (03/03/2009 map)	5.2	94.8	70.7	41.8	4.4	0.0



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

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