

California Monthly Climate Summary
June 2009

Weather Highlights

June 2009 was a cool, wet and unusual month for California. According to the Western Region Climate Center's [California Climate Tracker](#), the monthly average temperature was 65.3°F which is 1.4°F lower than the long-term average of 66.7°F. This is first cooler than average June since 2005. With a statewide average of 0.58 inches, precipitation for June was 164% of the long term average.

June's weather was unusual and at times a bit wild. The month started with some wild weather as a trough with subtropical moisture connections moved over the state. The unstable air spawned thunderstorms that brought hail, lightning and the possibility of a tornado in the north part of the state. In southern California, strong thunderstorms yielded lightning and strong winds that brought down trees. The lightning caused some fires to be started across the state. A persistent trough of low pressure off the south coast kept temperatures cooler than average into the second week of June. Thunderstorms continued over the mountain regions of the state. Summer officially made its entrance on June 20th at 10:46 pm pacific daylight time. A series of weak troughs passed over the state during the third week of June continuing the streak of cool weather and thunderstorm activity. However, temperatures in the desert southeast did cross over the century mark during this time. A strong dome of high pressure moved over the state to close the month causing temperatures to quickly transition from around 10 degrees below normal to 10-15 degrees above normal. Temperatures over 100 degrees were widespread across the state as June closed out.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 30 temperature records tied or broken and 9 precipitation records tied or broken for the month. Of the 30 temperature records, 13 were for new high maximum temperatures. Records were set over 14 days of the month. Bishop, California continues its record setting ways setting a new daily precipitation record on June 16th. The 0.30 inches of rain that fell breaks the old record of 0.1 inches set back in 1969 and exceeds the monthly average precipitation of 0.21 inches. On June 20th, Burbank, Los Angeles International Airport, and Camarillo all recorded at least a trace of precipitation which marks the first time precipitation was recorded for this day at these sites. Fresno, California on the other hand, continues its streak of 132 years with no official precipitation recorded on June 21st. On the temperature side, the downtown Los Angeles and Los Angeles International airport spent the entire month of June at or below their normal temperatures. For the downtown Los Angeles site, the temperature exceeded 80°F on only two days. The average daily high temperature for June for the downtown site was only 74.5°F which is just 0.3°F higher than the average high temperature recorded for January 2009. At the airport, the average high temperature was only 71°F which is the coldest monthly maximum temperature for any June since records began being kept at the site in 1944.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 62 stations recorded a minimum temperature below freezing in June while 87 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.

Precipitation in June exceeded normal amounts everywhere except the North Coast and southeast desert/mountain regions of the state. Redding saw its wettest June since 1982. In spite of the wet month, southern California completed its fourth year of drought for the 2008/2009 precipitation year (July 1 to June 30). For the CDEC precipitation gages for June 2009, the largest amount of precipitation recorded was Mount Shasta City with 2.83 inches. This is 267% of the average precipitation for this station for June. At the other end of the spectrum, ten stations recorded no precipitation for the month. For the CIMIS network, Five Points in Fresno County topped the precipitation charts with 9.23 inches for the month and 44 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 1.4 inches in June with 12 days showing precipitation. On average, only 1.0 inches of precipitation is recorded for the 8-Station index. Statewide, the average precipitation for June was 194% 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.

In October 2008, California joined the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS). 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. By the end of June 2009, California has had more than 500 volunteers sign up spanning 48 of California's 58 counties. The county with the most volunteers at the end of June is Sonoma with more than 80 volunteers. For the month of June 6,613 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in June was in Shingletown, Shasta County with 2.65 inches recorded on 6/3/09. Nine hail reports were filed with sizes ranging from rice size to 0.5 inch grape size stones. To join CoCoRaHS, please visit <http://www.cocorahs.org>.

Snowpack and Water Supply Conditions

Statewide, the April through July runoff forecast is approximately 70% of average. April through July runoff forecasts can be found in the Department's [Bulletin 120](#). Outlooks for the water year 2009 water supply index categories are dry for both the Sacramento Basin and 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>.

Drought Monitor and Seasonal Outlook

For June, the Drought Monitor showed a one-category degradation for the south coast region of the state. The maps for California for May 26, 2009 and June 30, 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 and southeast parts of the state are not considered in any drought condition. As of the June 30th depiction, the rest of California is depicted in either D0 (abnormally dry), D1 (moderate drought) conditions, or D2 (severe drought) conditions. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for July through September from NOAA depicts California with persisting drought conditions across the state based on climatology. Updates are provided twice per month. Maps and information can be found at http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html.

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 for May have been positive with values of 0.8°C in the Niño 3.4 region and 0.9°C for the Niño 1+2 region. The April through June 3-month running mean of the Ocean Niño Index (ONI) is 0.2 which is the first positive ONI value since the February through April 2007 value of 0.1. For conditions to be classified as an El Niño event, five consecutive values need to be above the threshold value of 0.5. Most forecast models have the tropical sea surface temperatures remaining in El Niño conditions through the early part 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 (July through September) from NOAA indicates above normal temperatures for all areas of the state except the coastal areas. For precipitation, equal chances are forecast for the entire 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

June's wild weather impacted agricultural activities in June. Hail at the beginning of the month damaged tomato and onion crops in Fresno County. The wheat harvest was slowed due to rains and some loss of the cherry crop resulted from fruit splitting from the rain. Increased humidity increased pest pressures for nut trees. On the

other hand the cooler weather decreased stress on livestock and improved dairy production. During the month of June, the third cutting of alfalfa was completed and the fourth cutting started. Dry lima bean and corn planting continued while oats were cut and baled. Safflower and sunflowers grew well and bloomed during the month. In the Central Valley, strawberry harvests completed while blueberry, blackberry, and boysenberry harvests continued. Summer vegetable harvest continued along with melon and sweet corn. Livestock were moved to their summer pastures while rangeland conditions continued their seasonal degradation. Supplemental feeding continued in central and southern areas due to poor rangeland conditions. 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 – 117°F (Buttercup, Colorado River Desert)

Low Temperature – 13°F (Casa Vieja Meadows, Tulare)

High Precipitation – 2.83 inches (Mount Shasta City, Sacramento Basin)

Low Precipitation – 0 inches (10 Stations)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 98.4⁰F (Seeley, Imperial County)

Low Average Minimum Temperature – 35.4⁰F (Big Bear Lake, San Bernardino County)

High Precipitation – 9.23 inches (Five Points, Fresno County)*

Low Precipitation – 0 inches (44 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	June	Oct-June	Stations	June	Oct-June	June	Oct-June
North Coast	0.27	5	5	5	17	9	9	137.6%	81%
SF Bay	0.03	3	3	3	6	5	5	8.8%	91%
Central Coast	0.06	5	2	2	10	4	4	88.2%	69%
South Coast	0.06	5	5	5	15	11	11	238.8%	66%
Sacramento River	0.26	10	8	8	43	29	27	145.1%	90%
San Joaquin River	0.12	8	7	7	27	20	19	178.7%	89%
Tulare Lake	0.07	5	5	5	27	25	25	338.6%	80%
North Lahontan	0.04	6	6	6	14	10	9	133.3%	77%
South Lahontan	0.06	5	3	2	14	7	6	802.1%	118%
Colorado River	0.03	2	2	2	6	2	3	16.7%	84%
Statewide Weighted Average	1	54	46	45	179	122	118	193.9%	85%

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	28	41.0	60.4	87.9
SF Bay	19	48.5	62.9	89.7
Central Coast	37	49.1	61.4	80.8
South Coast	67	48.4	64.1	90.2
Sacramento	90	44.0	63.8	93.0
San Joaquin	72	44.7	63.9	89.3
Tulare Lake	19	33.6	54.8	83.6
North Lahontan	9	37.4	58.7	83.4
South Lahontan	22	39.7	60.1	84.7
Colorado River Desert	23	62.9	81.6	100.3
Statewide Weighted Average	386	43.3	62.2	88.9

U.S. Drought Monitor

California

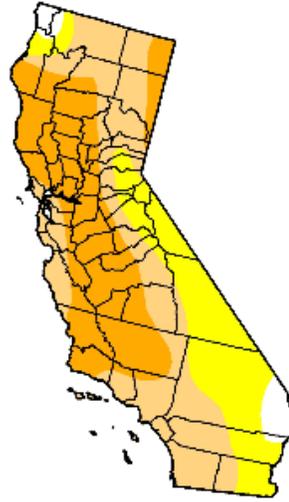
May 26, 2009
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	3.6	96.4	72.1	35.3	0.0	0.0
Last Week (05/19/2009 map)	3.6	96.4	72.1	35.3	0.0	0.0
3 Months Ago (03/03/2009 map)	5.2	94.8	70.7	41.8	4.4	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 (05/27/2008 map)	8.9	91.1	47.5	9.3	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

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



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U.S. Drought Monitor

California

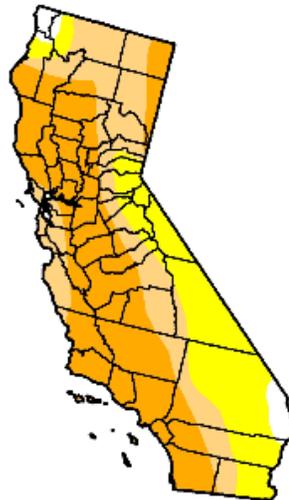
June 30, 2009
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2.9	97.1	72.0	44.3	0.0	0.0
Last Week (06/23/2009 map)	2.9	97.1	72.0	44.3	0.0	0.0
3 Months Ago (04/07/2009 map)	5.2	94.8	62.7	35.5	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 (07/01/2008 map)	0.2	99.8	89.2	18.1	0.0	0.0

Intensity:

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



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



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