

California Monthly Climate Summary
September 2007

Weather Highlights

September finished water year 2007 with a flourish. Rain, hail, snow, and a tornado occurred somewhere in California during the month. According to the Western Region Climate Center's [California Climate Tracker](#), September 2007 was 1.5°F lower than the long-term average temperature of 68.4°F. With a statewide average of 0.44 inches, precipitation for September was 107% of the long term average.

September weather was much more active than usual this year. September started hot and dry with a strong high pressure system dominating the weather. Temperatures passed the 100°F in many parts of the state and San Francisco Bay Area temperatures reaching into the 80s. Subtropical moisture was entrained into the circulation over California which interacted with a weak disturbance to spark thunderstorms over parts of California. In Kern County, a thunderstorm near Rosamond spawned a tornado rated as an EF0 on the Enhanced Fujita scale. The collapse of the thunderstorm also produced gusting winds that caused blowing dust and knocked down power poles. Half inch hail was reported in Boron, CA. The Mojave Air and Spaceport recorded a wind gust of 83 mph. Hot weather persisted into the second week of September. At Death Valley the minimum temperature was still 100°F on September 10. By the middle of the week a pattern shift had occurred as a result of a weak system pushing through that brought northerly flow to the state. This resulted in smoke from Plumas county fires being pushed into the Central Valley which blocked solar heating. Lower than average temperatures were recorded at many sites. Conditions continued to alternate between ridging and offshore flow and cooler onshore flow with weak systems until the third week of the month. An unusually strong cut-off low moved out of the Gulf of Alaska bringing widespread showers to many parts of the state and snow to the high country. After pausing offshore southwest of Santa Barbara, the system quickly pushed north and east. The month finished with cooler temperatures and more thunderstorms for the Sierra Nevada.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 88 temperature records tied or broken and 27 precipitation records tied or broken for the month. Fifty-six of the 88 records were new low temperature records with 40 of those being new high minimum temperatures. On September 1, Indio Fire Station recorded a new high minimum of 93°F which broke the old record set in 1952 by six degrees. On the second, Riverside set a new high maximum of 113 which broke the old record set in 1948 by one degree. Towards the end of the month, Redding airport tied a low temperature record of 43°F set back in 1920 on the 25th. On September 23rd, Lake Arrowhead set a new low temperature record of 36°F. The old record was 39°F set back in 1998. Precipitation records ranged from a new record in Stockton on the 22nd for a trace of rainfall to 0.69 inches of rain at Bob Hope Airport (Burbank) on the 22nd. No rain had been previously recorded for the 22nd of September for Stockton or Burbank with records dating back to the 1940s.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 93 recorded a maximum temperature above 100°F. For minimum temperatures, 115 stations recorded a minimum temperature below freezing. Statewide extremes from the CDEC network of temperature gages are shown below. Also shown

are the 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 September was spotty, but still spread across most of the state. The largest amount of precipitation recorded in the CDEC precipitation gages for September 2007 was at the De Sabla, Grass Valley and Lake Arrowhead sites where 1.5 inches of rain fell. Mount Wilson recorded 1.49 inches for the month as well. Seven other sites also posted more than one inch of precipitation for the month. Thirty-nine stations in the CDEC and CIMIS databases reported zero precipitation for the month. The 8-Station Index for northern California precipitation recorded 0.7 inches of precipitation. On average, September would have 0.9 inches of precipitation recorded for the 8-station index. A table of October through September 8-Station Index totals can be found at the end of the summary. The water year finished with 37.2 inches for the index which is 74% of the long term average and ranks as the 26th driest year in the last 87 years. Note that last year was the 5th wettest year. Statewide, the average precipitation for September was 112% 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 Drought Monitor maps which can be found on the National Drought Mitigation Center's (NDMC) website <http://drought.unl.edu/dm/> have shown only modest changes for California during the month of September in response to the cut-off low that brought precipitation to several areas in the state. These maps are largely a reflection of precipitation and soil moisture deficit estimates. The northwest part of the state is depicted as abnormally dry (D0). Moderate drought conditions (D1) are shown for the Sacramento and lower San Joaquin Valleys. The Central Coast, Sierra Nevada and North Lahontan regions are depicted as severe drought (D2). The southern parts of the state are depicted by the NDMC as being in extreme drought (D3). Maps are updated weekly.

The latest U.S. Seasonal Drought Outlook from NOAA depicts conditions for the next three months. For California, the map shows improving conditions for the northern part of the state and persistence of drought conditions in the south. Maps and information can be found at

http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html

Water supply information for California can be found at

http://cdec.water.ca.gov/water_supply.html. For water year 2007, the Sacramento River system has been classified as dry, and for the San Joaquin it has been classified as critical. 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 with conditions intensifying over the next couple of months. Equatorial sea surface temperature anomalies for the eastern tropical Pacific are running between -0.7° C and -2.0° C. Both statistical and dynamical models forecast La Niña conditions lasting into the first part of 2008. More information on the topic 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. Current climate indicators including ENSO conditions indicate a warmer than average October through December period for most of California. Precipitation forecasts show above normal totals for the next three months for the northern two-thirds of the state and equal chance of above, near, or below normal precipitation for the rest of the state except the southeast corner which shows a below normal conditions. Long-range outlook plots of precipitation and temperature 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 continued the harvest for many crops. Safflower harvest continued along with sugar beets, corn silage, grains, and alfalfa. Table, wine, raisin, and juice grape harvests continued throughout the state. Central Valley peaches, plums, nectarines, and pluots continued to be harvested along with apples, figs, pears, quinces, and pomegranates. Vegetable crops were harvested across the state. Good yields are occurring in the almond harvest and pistachio and walnut harvests began. Olives were reported to have a good fruit set and were being sprayed for olive fruit fly. Cooler weather was positive for fall calving and milk production. Beef cows in foothill pastures are receiving supplemental feed and nutrients. Stock sheep and goats were grazing in harvested fields. Honey bees were in melon and vine seed fields. 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 – 118° F (Cahuilla, Colorado River Desert)

Low Temperature - 12° F (Casa Vieja Meadows, Tulare Basin)

High Precipitation – 1.5 inches (4 stations)

Low Precipitation –0 inches (3 stations)

Statewide Extremes (CIMIS)

High Temperature – 100° F (Salton Sea East, Imperial County)

Low Temperature - 33° F (Alturas, Modoc County)

High Precipitation – 1.61 inches (Monrovia, Los Angeles County)

Low Precipitation – 0 inches (36 stations)

Statewide Precipitation Statistics

Hydrologic Region	Region Weight	Basins Reporting			Stations Reporting			Percent of Historic Average	
		Basins	Sep	Oct-Sep	Stations	Sep	Oct-Sep	Sep	Oct-Aug
NORTH COAST	0.27	5	4	3	19	8	6	34.0%	92%
SAN FRANCISCO BAY	0.03	2	2	2	6	5	4	83.2%	74%
CENTRAL COAST	0.06	3	3	3	11	7	5	95.7%	52%
SOUTH COAST	0.06	3	3	3	15	12	9	166.3%	31%
SACRAMENTO RIVER	0.26	5	5	5	43	14	13	133.5%	65%
SAN JOAQUIN RIVER	0.12	6	4	4	25	9	7	112.0%	61%
TULARE LAKE	0.07	5	2	2	28	9	9	218.1%	56%
NORTH LAHONTAN	0.04	3	3	3	14	7	7	131.5%	62%
SOUTH LAHONTAN	0.06	3	3	3	15	8	8	244.2%	48%
COLORADO RIVER	0.03	1	1	1	6	3	3	49.3%	14%
STATEWIDE WEIGHTED AVERAGE	1.00	36	30	29	182	82	71	112.2%	66%

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	34	36.1	60.4	89.2
SF Bay	19	48.1	63.6	85.0
Central Coast	32	47.2	62.5	83.9
South Coast	66	47.6	68.3	98.1
Sacramento	93	36.4	62.1	90.9
San Joaquin	74	42.2	62.0	86.5
Tulare Lake	18	30.1	54.6	83.3
North Lahontan	27	25.4	51.4	76.8
South Lahontan	23	36.6	60.6	86.0
Colorado River Desert	22	63.3	82.4	101.5
Statewide Weighted Average	408	38.6	61.6	88.7

Northern California 8-Station Index October through June Values

Month	Precipitation (inches)	% of Average
October	0.5	17
November	5.7	90
December	8.5	101
January	1.4	16
February	13.6	170
March	1.6	23
April	3.1	79
May	1.2	55
June	0.4	40
July	0.5	250
August	0	0
September	0.7	78
Water Year Total	37.2	74%