

California Monthly Climate Summary  
April 2016

**Weather Highlights**

April 2016 was a warmer-than-average and drier-than average month for California. According to the Western Region Climate Center's [California Climate Tracker](#), the monthly average temperature was 56.5°F which is 3.8°F higher than the long-term average. With a statewide average of 1.40 inches, precipitation was 85% of average. Statewide plots of precipitation and temperature for the past month are included at the end of the document.

April started out warmer than average with scattered showers over the coastal regions and the Sierra. Precipitation in the Central Valley was limited to one day. Warmer temperatures continued into the second week. Precipitation developed into widespread rainfall by the end of the week. In week three temperatures were again above average and precipitation was limited to the northern part of the State. The next week was warm and dry at the beginning with precipitation moving into the northern part of the State in the latter part of the week. Atmospheric moisture remained to close out the month with coastal fog and some radiational fog present.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 66 temperature records tied or broken and 17 precipitation records set for the month. Of the 66 temperature records set, 45 were for new high maximum temperatures. Records were set on 16 days of the month with 10 of those days coming from the San Diego Forecast Area.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 146 stations recorded a minimum temperature below freezing 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 stations is also shown at the end of the summary.

Precipitation in April was below average across the state with the exception of the Lahontan Regions and Colorado River Desert. For the CDEC precipitation gages, the largest amount of precipitation recorded was at Gasquet Ranger Station in the North Coast Region with 5.08 inches. This is 79% of the average precipitation for this station for the month. At the other end of the spectrum, 2 stations recorded no precipitation for the month. For the CIMIS network, Markleeville in the Eastern Sierra Region topped the precipitation charts with 3.89 inches for the month and 8 stations recorded no precipitation. The 8-Station Index for northern California precipitation recorded 2.8 inches for the month. On average, 3.9 inches of precipitation is recorded for the 8-Station index for the month. The San Joaquin 5-Station Index recorded 2.8 inches of precipitation for the month. On average, 3.6 inches of precipitation is recorded for the 5-Station Index for the month. The Tulare Basin 6-Station Index

recorded 1.6 inches of precipitation for the month. On average, 2.6 inches of precipitation is recorded.

### **CoCoRaHS Update**

California is in its 7<sup>th</sup> 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 April 23, 2016 is shown at the end of the document. California has 1,468 volunteers signed up spanning 55 of California's 58 counties. The counties without volunteers are Alpine, Glenn, and Modoc. The counties with the most volunteers are San Diego County with 128 volunteers and Sonoma County with 120. For the month of April, 13,612 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA for the month was in Placer County on 4/23/2016 where 2.38 inches was recorded. There were 30 reports of snowfall recorded during the month with the largest snowfall of 26 inches recorded on 4/23/2016 in Placer County. There were 7 hail reports filed for the month spanning 6 counties. Stone sizes ranged from rice to 3/4". To join CoCoRaHS or find more information, please visit <http://www.cocorahs.org>.

### **Snowpack and Water Supply Conditions**

As of April 30, 2016, the northern region recorded 13 inches of snow water equivalent which is 62% of the average for that date. The central region recorded 16 inches of snow water equivalent which is 68% of the average for that date. The southern region recorded 10 inches of snow water equivalent which is 46% of the average for that date. The median Water Supply Index (WSI) forecast for WY2016 for the Sacramento Basin is below normal while the San Joaquin Basin forecast is in the dry 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>. A table showing end-of-April reservoir storage by hydrologic region is shown at the end of this document. For more information on water conditions in California, visit <http://www.water.ca.gov/waterconditions/>.

### **Seasonal Outlook**

The U.S. Monthly Drought Outlook 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](http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html). Updates are provided twice per month. The 30 and 90-day seasonal 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](http://www.wrcc.dri.edu/anom/cal_anom.html).

### **ENSO Conditions**

The El Niño/Southern Oscillation (ENSO) is currently in El Niño conditions. Equatorial sea surface temperature anomalies for the tropical Pacific are cooling with values of 0.8°C in the Niño 3.4 at the end of April. The February through April 3-month running mean of the Ocean Niño Index (ONI) is 1.6 which is now the 13<sup>th</sup> 3-month running mean value above the 0.5 threshold for an El Niño event using the Climate Prediction Center's recomputed ONI time series. 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 temperatures cooling into the spring and summer with conditions forecast to transition into a La Niña event. More information can be found at the Climate Prediction Center's web site: [http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/enso\\_advisory/](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/)  
Updates are posted weekly.

### **Agricultural Data**

April 2016 saw field winter crops mature and spring crops develop. Winter wheat, alfalfa and oats were harvested. Grapes blossomed and leafed out while stone fruit matured and harvest began. Other orchard maintenance continued. Summer vegetables were being planted and early planted sweet corn was germinating. Artichokes and leeks were harvested while peppers and tomatoes were planted and watermelon vines trained. Rangeland conditions remained favorable enough to limit supplemental feeding. For further crop information see <http://www.nass.usda.gov/index.asp>.

### **Other Climate Summaries**

[California Climate Tracker](#) (Western Region Climate Center)

[Golden Gate Weather Service Climate Summary](#)

[NOAA Monthly State of the Climate Report](#)

### **Statewide Extremes (CDEC)**

High Temperature – 99°F (Cauhilla, Colorado River)

Low Temperature – -10°F (Casa Vieja Meadow, Tulare)

High Precipitation – 5.08 inches (Gasquet Ranger Station, North Coast)

Low Precipitation – 0 inches (2 Stations)

### **Statewide Extremes (CIMIS)**

High Average Maximum Temperature – 87.5°F (Indio 2, Imperial County)

Low Average Minimum Temperature – 27.5°F (Big Bear Lake, San Bernardino County)

High Precipitation – 3.89 inches (Markleeville, Eastern Sierra)\*

Low Precipitation – 0 inches (8 stations)

**Statewide Mean Temperature Data by Hydrologic Region (degrees F)**

| <b>Hydrologic Region</b>   | <b>No. Stations</b> | <b>Minimum</b> | <b>Average</b> | <b>Maximum</b> |
|----------------------------|---------------------|----------------|----------------|----------------|
| North Coast                | 23                  | 31.1           | 52.6           | 84.7           |
| SF Bay                     | 8                   | 39.0           | 56.6           | 82.5           |
| Central Coast              | 12                  | 36.3           | 56.8           | 86.8           |
| South Coast                | 48                  | 38.9           | 59.1           | 86.8           |
| Sacramento                 | 75                  | 31.1           | 52.6           | 81.3           |
| San Joaquin                | 46                  | 29.3           | 49.3           | 76.1           |
| Tulare Lake                | 19                  | 24.8           | 44.5           | 69.1           |
| North Lahontan             | 27                  | 21.8           | 40.6           | 63.2           |
| South Lahontan             | 16                  | 24.8           | 46.1           | 70.4           |
| Colorado River Desert      | 8                   | 48.5           | 69.7           | 92.6           |
| Statewide Weighted Average | 282                 | 31.2           | 52.0           | 80.4           |

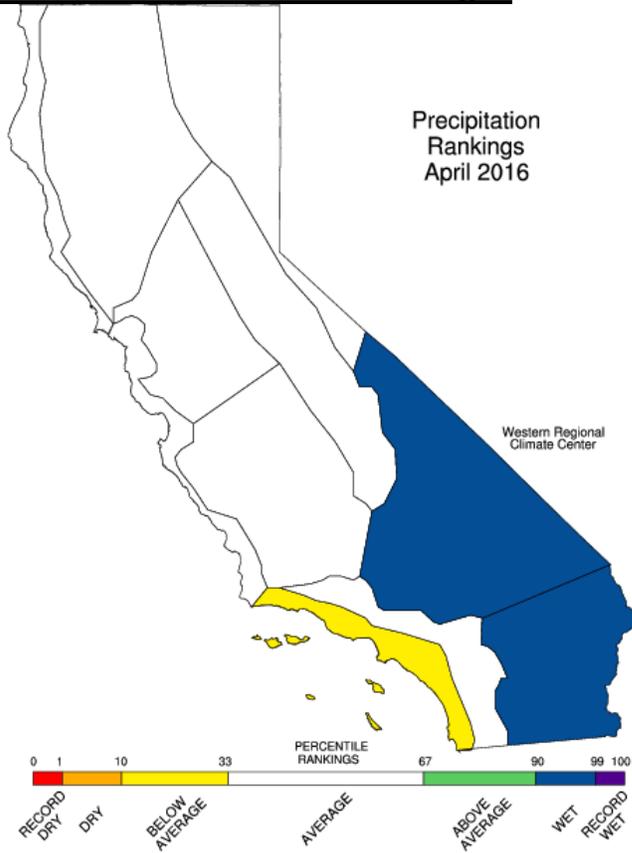
**Statewide Precipitation Statistics**

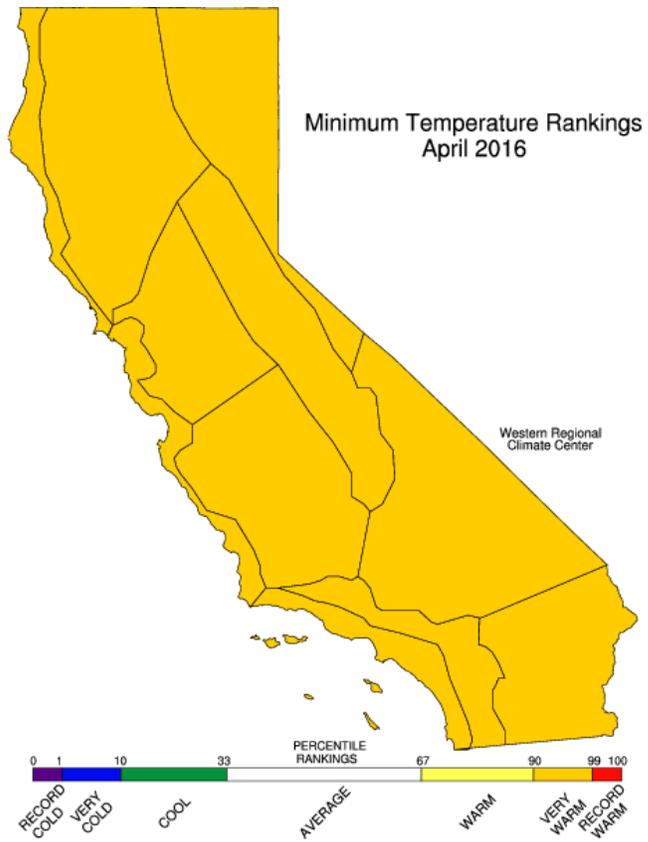
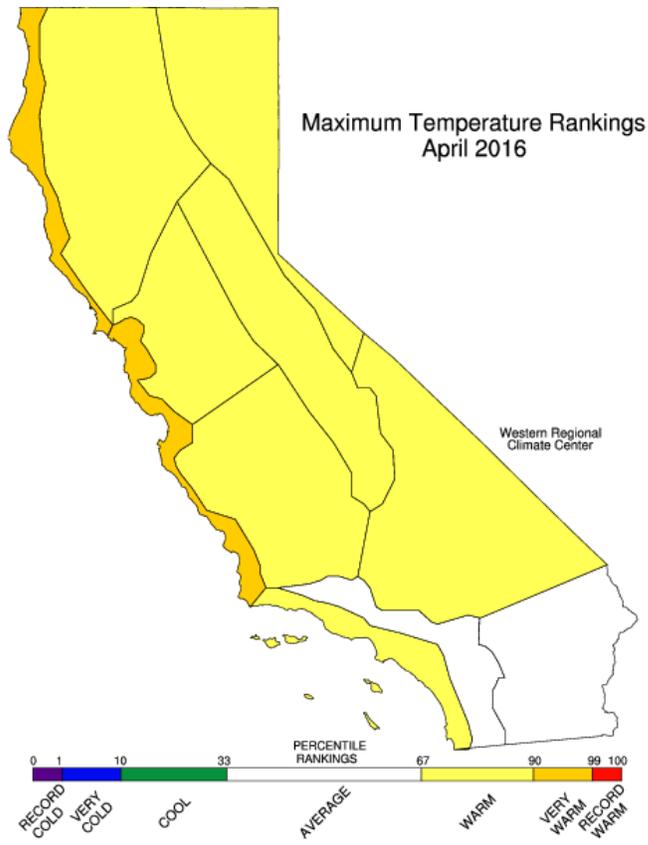
| <b>Hydrologic Region</b>   | <b>Region Weight</b> | <b>Basin Reporting</b> |            |                | <b>Stations Reporting</b> |            |                | <b>% of Historic Average</b> |                |
|----------------------------|----------------------|------------------------|------------|----------------|---------------------------|------------|----------------|------------------------------|----------------|
|                            |                      | <b>Basins</b>          | <b>Apr</b> | <b>Oct-Apr</b> | <b>Stations</b>           | <b>Apr</b> | <b>Oct-Apr</b> | <b>Apr</b>                   | <b>Oct-Apr</b> |
| North Coast                | 0.27                 | 5                      | 5          | 5              | 17                        | 9          | 9              | 79.4%                        | 119%           |
| SF Bay                     | 0.03                 | 2                      | 2          | 2              | 6                         | 3          | 2              | 54.0%                        | 96%            |
| Central Coast              | 0.06                 | 3                      | 3          | 3              | 11                        | 7          | 7              | 29.5%                        | 86%            |
| South Coast                | 0.06                 | 3                      | 3          | 3              | 14                        | 9          | 9              | 36.6%                        | 53%            |
| Sacramento River           | 0.26                 | 5                      | 5          | 5              | 41                        | 25         | 24             | 83.0%                        | 118%           |
| San Joaquin River          | 0.12                 | 6                      | 6          | 6              | 24                        | 11         | 11             | 95.8%                        | 110%           |
| Tulare Lake                | 0.07                 | 5                      | 5          | 5              | 29                        | 24         | 24             | 78.4%                        | 109%           |
| North Lahontan             | 0.04                 | 3                      | 3          | 3              | 13                        | 10         | 10             | 182%                         | 118%           |
| South Lahontan             | 0.06                 | 3                      | 3          | 3              | 15                        | 13         | 13             | 131%                         | 81%            |
| Colorado River             | 0.03                 | 1                      | 1          | 1              | 6                         | 3          | 3              | 300%                         | 77%            |
| Statewide Weighted Average | 1                    | 36                     | 36         | 36             | 176                       | 114        | 112            | 89.7%                        | 107%           |

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

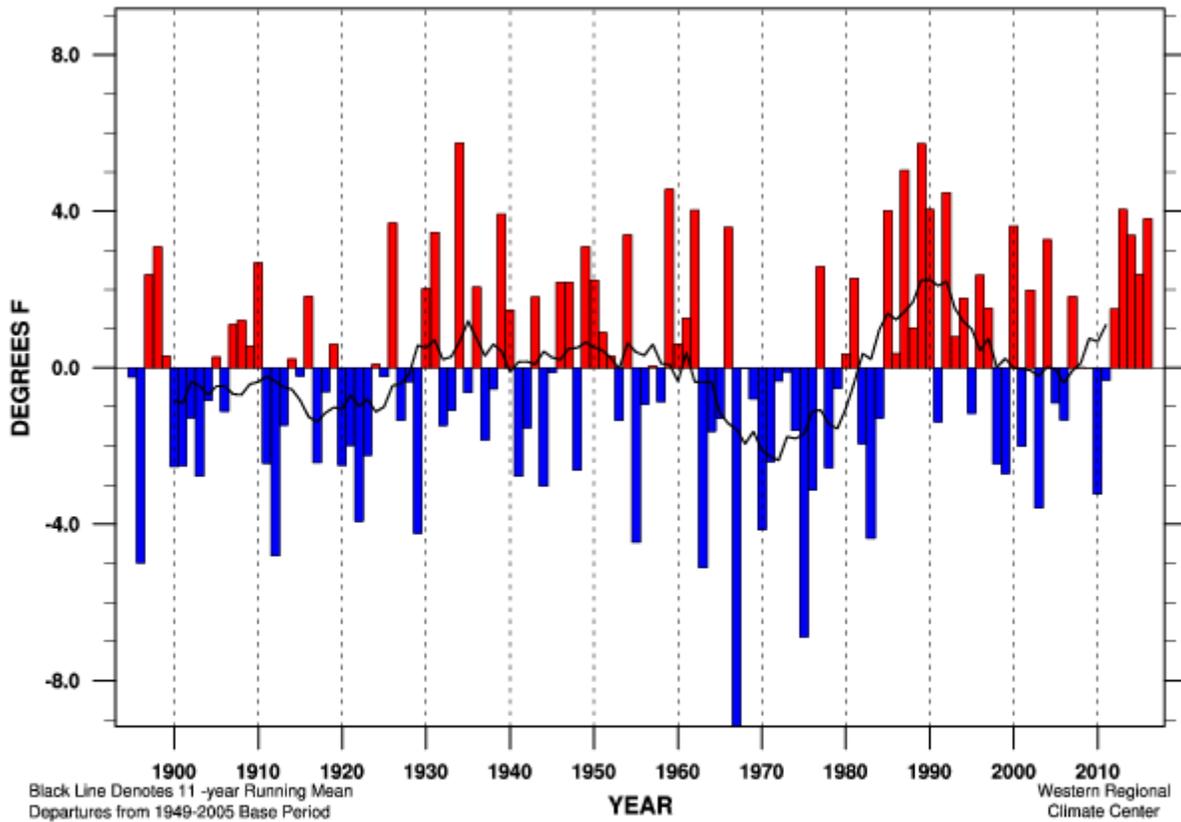
| End-of-Month Reservoir Storage | Number of Reservoirs | Average Storage (taf) | 2016 Storage (taf) | % of Average |
|--------------------------------|----------------------|-----------------------|--------------------|--------------|
| North Coast                    | 6                    | 2,459                 | 1,931              | 79%          |
| San Francisco Bay              | 17                   | 529                   | 514                | 97%          |
| Central Coast                  | 6                    | 711                   | 200                | 28%          |
| South Coast                    | 29                   | 1,524                 | 1070               | 70%          |
| Sacramento                     | 43                   | 13,043                | 13,991             | 107%         |
| San Joaquin                    | 34                   | 7,773                 | 5,926              | 76%          |
| Tulare                         | 6                    | 1,062                 | 906                | 85%          |
| North Lahontan                 | 5                    | 585                   | 181                | 31%          |
| South Lahontan                 | 8                    | 261                   | 234                | 90%          |
| Total                          | 154                  | 27,950                | 24,957             | 89%          |

**California Climate Tracker Images**



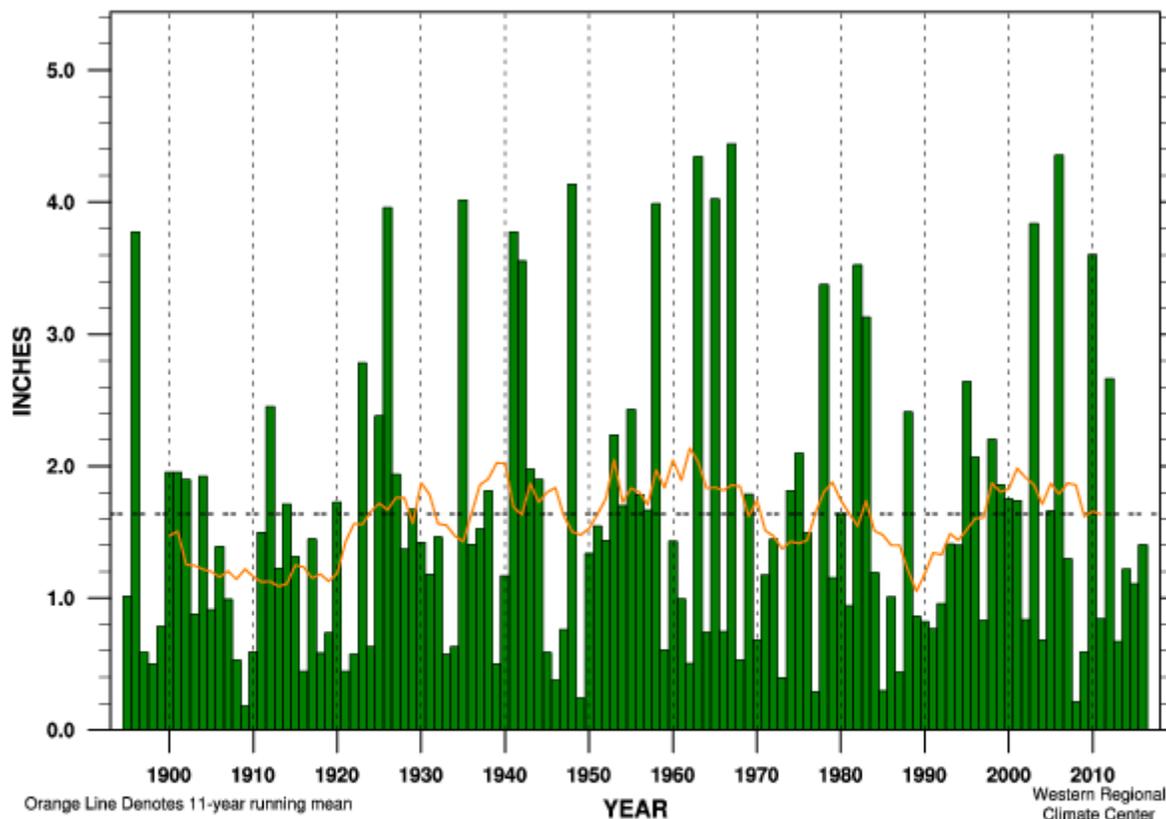


## California Statewide Mean Temperature Departure April



|                           |                            |                 |
|---------------------------|----------------------------|-----------------|
| Linear Trend 1895-present | + 1.22 ± 1.36 °F/100yr     |                 |
| Linear Trend 1949-present | + 2.41 ± 3.64 °F/100yr     |                 |
| Linear Trend 1975-present | + 5.37 ± 7.28 °F/100yr     |                 |
| Warmest Year              | 58.4 °F (+ 5.7 °F) in 1934 | MEAN 52.7 °F    |
| Coldest Year              | 43.5 °F (- 9.2 °F) in 1967 | STDEV 3.05 °F   |
| April                     | 2016 56.5 °F (+ 3.8 °F)    | RANK 112 of 122 |

## California Statewide Precipitation April



|                           |                   |                         |                |
|---------------------------|-------------------|-------------------------|----------------|
| Linear Trend 1895-present | + 0.23 ± 0.54 in. | (+ 14 ± 32%) per 100 yr |                |
| Linear Trend 1949-present | - 0.20 ± 1.37 in. | (- 12 ± 83%) per 100 yr |                |
| Linear Trend 1975-present | - 0.01 ± 2.71 in. | (- 0 ± 165%) per 100 yr |                |
| Wettest Year              | 4.44 in. ( 271%)  | in 1967                 | MEAN 1.64 in.  |
| Driest Year               | 0.18 in. ( 10%)   | in 1909                 | STDEV 1.08 in. |
| April                     | 2016              | 1.40 in. ( 85%)         | RANK 62 of 122 |

# CoCoRaHS Map

