California Monthly Climate Summary
May 2016

Weather Highlights

May 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 60.6°F which is 1.0°F higher than the long-term average. With a statewide average of 0.74 inches, precipitation was 83% of average. Statewide plots of precipitation and temperature for the past month are included at the end of the document.

May started out with fairly constant temperatures due to a moist air mass over the State. This moist air led to mornings with radiation fog and scattered showers over most of the State. Temperatures cooled towards then end of second week as Pacific air surged inland. Precipitation continued as scattered showers with the heaviest rain in the northern Sierra Nevada Mountains. In week three temperatures jumped as a ridge developed over the State leading to dry conditions as well. Coastal areas were cooler due to the presence of the marine layer. Spotty showers returned in the following week as the ridge broke down with cooler temperatures prevailing as well. Temperatures warmed to close out the month leading to some thunderstorms over the Sierra Nevada.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 5 temperature records tied or broken and 6 precipitation records set for the month. Of the 5 temperature records set, 2 were for new high maximum temperatures. Records were set on 5 days of the month with 4 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, 87 stations recorded a minimum temperature below freezing while 22 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 May was below average across the state with the exception of the South Coast, North Lahontan Region and Tulare Lakebed Region. For the CDEC precipitation gages, the largest amount of precipitation recorded was at Blue Canyon in the Sacramento Region with 3.91 inches. This is 144% of the average precipitation for this station for the month. At the other end of the spectrum, 3 stations recorded no precipitation for the month. For the CIMIS network, Macdoel II in Siskiyou County topped the precipitation charts with 4.83 inches for the month and 14 stations recorded no precipitation. The 8-Station Index for northern California precipitation recorded 2.2 inches for the month. On average, 2.1 inches of precipitation is recorded for the 8-Station index for the month. The San Joaquin 5-Station Index recorded

1.1inches of precipitation for the month. On average, 1.8 inches of precipitation is recorded for the 5-Station Index for the month. The Tulare Basin 6-Station Index recorded 0.4 inches of precipitation for the month. On average, 1.1 inches of precipitation is recorded.

CoCoRaHS Update

California is in its 7th 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 May 7, 2016 is shown at the end of the document. California has 1,475 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 129 volunteers and Sonoma County with 120. For the month of May, 13,203 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA for the month was in Shasta County on 5/23/2016 where 2.10 inches was recorded. There were 9 reports of snowfall recorded during the month with the largest snowfall of 13 inches recorded on 5/21/2016 in Placer County. There were 7 hail reports filed for the month spanning 5 counties. Stone sizes ranged from rice to 1/2". To join CoCoRaHS or find more information, please visit http://www.cocorahs.org.

Snowpack and Water Supply Conditions

As of May 31, 2016, the northern region recorded 2 inches of snow water equivalent which is 7% of the April 1 average. The central region recorded 3 inches of snow water equivalent which is 9% of the April 1 average. The southern region recorded 2 inches of snow water equivalent which is 7% of the April 1average. 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-month 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. 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.

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 0.2°C in the Niño 3.4 at the end of May. The March through May 3-month running mean of the Ocean Niño Index (ONI) is 1.1 which is now the 14th 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 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/
Updates are posted weekly.

Agricultural Data

May2016 saw field spring crops develop and summer crops planted. Alfalfa was mowed, dried and baled and some forage hay fields were harvested. Cotton was greater than 95% planted and rice was 96% planted with 45% emerged by the end of the month. Grapes neared post fruit set and canopy management applied. Stone fruit was harvested and packed. Olives were pruned and irrigated and nut orchards were treated for weeds and pests. Summer vegetables were growing with some early harvest while onions and garlic were irrigated. Rangeland conditions began their annual dry-down with quality at 50% fair to good. 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 – 104°F (5 stations)
Low Temperature – -5°F (Casa Vieja Meadow, Tulare)
High Precipitation –3.91 inches (Blue Canyon, Sacramento Basin)
Low Precipitation – 0 inches (3 Stations)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 91.7^{0}F (Meloland, Imperial County)
Low Average Minimum Temperature – 29.4^{0}F (Big Bear Lake, San Bernardino County)
High Precipitation – 4.83 inches (Macdoel II, Siskiyou County)*
Low Precipitation – 0 inches (14 stations)

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	22	37.0	57.2	89.8
SF Bay	7	42.6	59.2	91.0
Central Coast	12	38.0	59.1	88.5
South Coast	48	41.7	59.3	87.4
Sacramento	75	36.4	57.7	88.3
San Joaquin	45	31.6	53.9	82.8
Tulare Lake	18	28.1	48.9	75.6
North Lahontan	6	28.1	50.7	80.5
South Lahontan	15	26.5	49.6	78.3
Colorado River Desert	7	51.9	75.1	99.9
Statewide Weighted Average	255	35.5	56.5	86.6

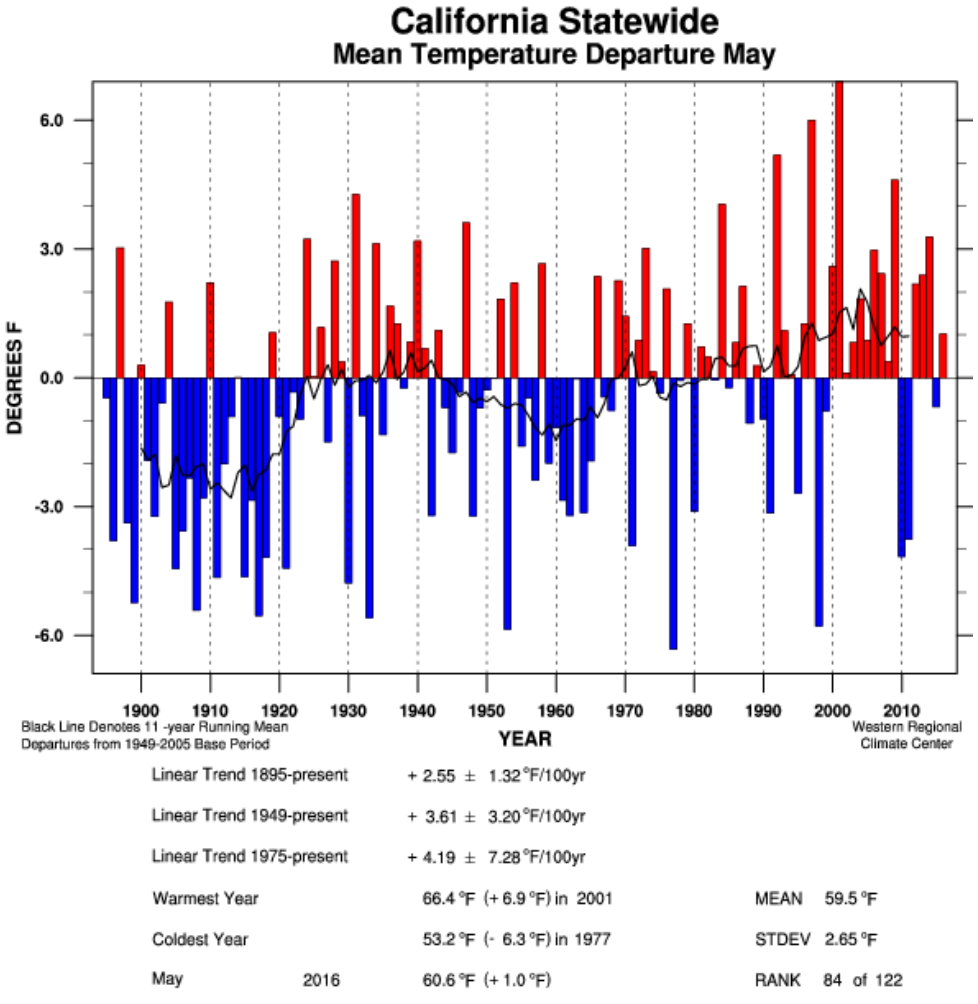
Statewide Precipitation Statistics

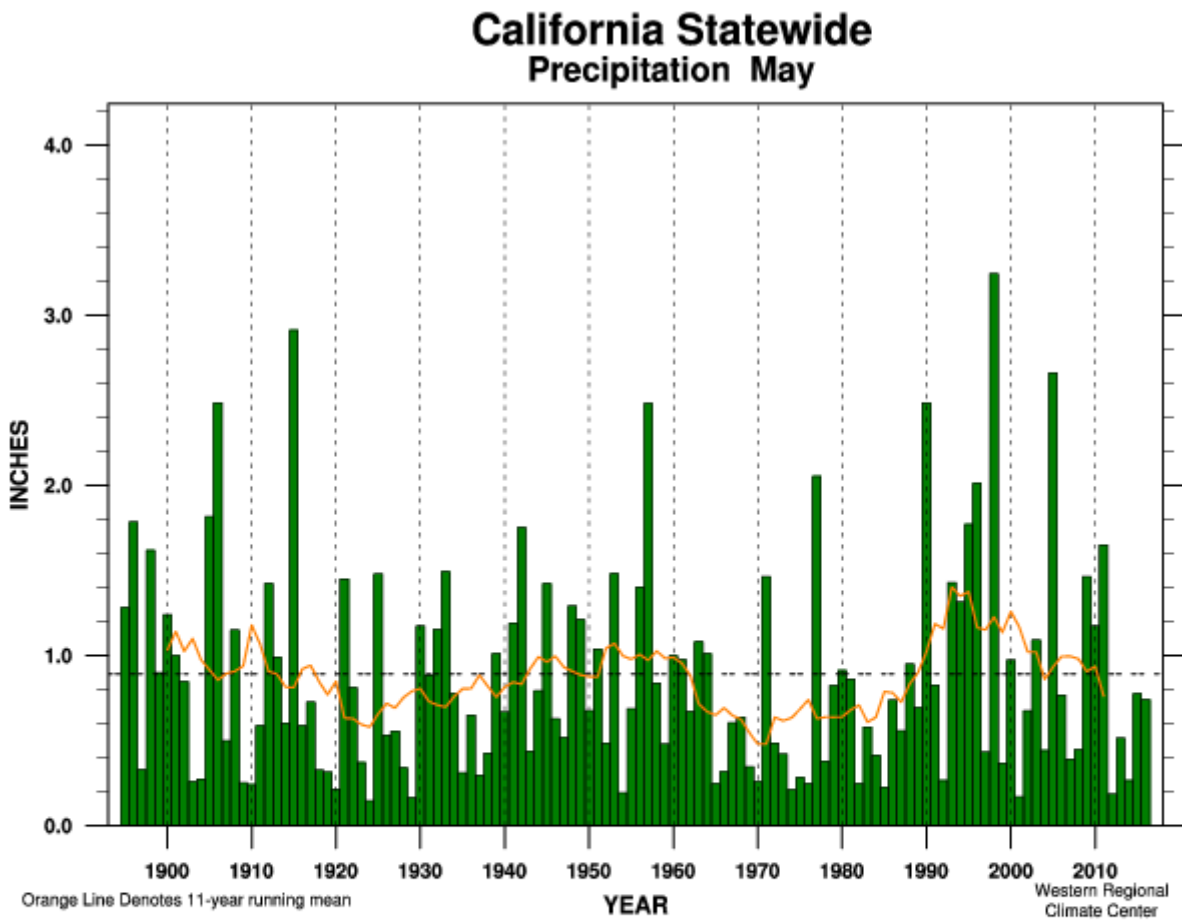
Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	May	Oct-May	Stations	May	Oct-May	May	Oct-May
North Coast	0.27	5	4	4	15	9	8	43.6%	117%
SF Bay	0.03	3	2	2	6	2	2	34.5%	102%
Central Coast	0.06	5	4	4	10	4	4	35.2%	95%
South Coast	0.06	5	5	5	14	10	10	117%	57%
Sacramento River	0.26	10	9	9	42	29	28	79.6%	116%
San Joaquin River	0.12	7	6	6	26	14	14	59.9%	114%
Tulare Lake	0.07	5	5	5	28	21	21	112%	109%
North Lahontan	0.04	6	6	5	13	10	9	184%	124%
South Lahontan	0.06	5	5	5	14	11	11	97.9%	104%
Colorado River	0.03	2	1	1	6	1	1	33.3%	63%
Statewide Weighted Average	1	53	47	46	174	111	108	71.9%	108%

End-of-May 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	2,493	1,812	73%
San Francisco Bay	17	514	507	99%
Central Coast	6	675	194	29%
South Coast	29	1,493	1,100	74%
Sacramento	43	13,331	13,969	105%
San Joaquin	34	8,953	6,343	78%
Tulare	6	1,348	1,171	87%
North Lahontan	5	645	274	42%
South Lahontan	8	269	249	93%
Total	154	28,939	25,623	89%

California Climate Tracker Images





Linear Trend 1895-present	- 0.01 ± 0.32 in.	(- 1 ± 35%) per 100 yr	
Linear Trend 1949-present	+ 0.20 ± 0.81 in.	(+ 22 ± 90%) per 100 yr	
Linear Trend 1975-present	+ 0.39 ± 1.88 in.	(+ 43 ± 210%) per 100 yr	
Wettest Year	3.24 in. (363%)	in 1998	MEAN 0.89 in.
Driest Year	0.15 in. (16%)	in 1924	STDEV 0.68 in.
May 2016	0.74 in. (83%)		RANK 64 of 122

CoCoRaHS Map