

California Monthly Climate Summary
April 2010

Weather Highlights

April 2010 was a cooler and wetter than average month for California. According to the Western Region Climate Center's [California Climate Tracker](#), the monthly average temperature was 49.2°F which is 3.5°F lower than the long-term average. With a statewide average of 3.30 inches, precipitation for April was 202% of the long term average.

April started with below normal temperatures and a series of weak systems that brought light precipitation for Northern California. By the end of the week a second low pressure system rolled across the state from north to south bringing widespread precipitation and some gusty winds. As this system kicked out of the state at the end of the week, Southern California returned to dry and mild conditions while another storm system raced across Northern California. The third week brought more low pressure systems to Northern California with unusually low snow levels for this time of year. By the end of the third week a high pressure system had built in over the state resulting in drier, warmer conditions. The fourth week of the month saw dry, mild weather for most of the week before another cool, showery system passed over the state. April ended with a strong storm bringing valley rain and mountain snows. Two to three feet of snow fell above 5000 feet.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 48 temperature records tied or broken and 16 precipitation records tied or broken for the month. Of the 48 temperature records set in April, 1 was for a new high maximum temperature, while 24 were for new low minimum temperatures. Records were set over 14 days of the month. For the month as a whole, Bishop recorded its 8th coldest April since 1944 with an average monthly temperature of 49.9°F. The coldest April was in 1967 with an average monthly temperature of 44.9°F. The average April temperature for Bishop is 53.9°F. On April 12th, Oakland set a new daily precipitation record with 0.81 inches. The old record for April 12th was 0.59 inches set back in 1956. Ukiah also set a new daily precipitation record on the 12th with a reading of 2.25 inches. The old record of 1.40 inches was set in 2006. The lone high maximum temperature record set this month was in Oakland on April 25th with a reading of 79°F. The previous record of 78°F was set in 1997.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 210 stations recorded a minimum temperature below freezing in April 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 April ranged was above average for everywhere except the southeast part of the state. For the CDEC precipitation gages for April 2010, the largest amount of precipitation recorded was the Gasquet Ranger Station in the Smith River Basin on the North Coast with 14.23 inches. This is 220% of the average precipitation for this station for April. At the other end of the spectrum, Needles in the Colorado River Desert reported zero inches of precipitation for the month. For the CIMIS network, Camino in El Dorado County topped the precipitation charts with 7.40 inches for the month and 8 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 8.2 inches in April with 17 days showing precipitation. On average, 3.9 inches of precipitation is recorded for the 8-Station index in April. Statewide, the average precipitation for April was 205% 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

April 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 April 2010, California has 660 volunteers signed up spanning 51 of California's 58 counties. The county with the most volunteers at the end of March is Sonoma with 85 volunteers. For the month of April 9,169 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in April was in San Bernardino County with 4.15 inches recorded on 4/12/10. There were 26 hail reports submitted in April from 12 Counties. Reports were for grape-size hail or smaller. Ninety-three snow reports were included with the precipitation reports with a 22 inch depth being the largest new snow total from Placer County on the 5th. The largest total snow depth reported was 99 inches in Placer County from the first through the 14th. To join CoCoRaHS or find more information, please visit <http://www.cocorahs.org>.

Snowpack and Water Supply Conditions

From the May 1st Bulletin 120, the statewide snowpack is estimated to be 105% of average after April provided storms to add to the pack. April 1 is considered to be the traditional peak of snowpack accumulation in California. As of May 10th, the northern region (from the Trinity to the Feather and Truckee Basins) shows 34 inches of snow water equivalent which is 211% of average for this date. The central region (the Yuba Basin to the Merced/Walker Basins) shows 24 inches of snow water equivalent which is 121% of average for this date. The southern region (the San Joaquin Basin to the Kern Basin) shows 24 inches of snow water equivalent which is 133% of average for this date. The latest water supply index forecast for 2010 shows the Sacramento Basin in the Below Normal category and the San Joaquin Basin in the Above Normal category. Water year 2009 resulted in a Dry category for the Sacramento Basin and

Below Normal for 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

The maps for California's depiction by the Drought Monitor for March 30, 2010 and April 27, 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 April 27th 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 northeast corner of the state on the lee side of the Cascades and Sierra. Drought free area in California was 72.8% for the depiction on April 27th. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for May through July from NOAA depicts California with persisting drought conditions in the remaining drought areas as depicted by the Drought Monitor. This forecast is 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.

The California Nevada River Forecast Center has produced 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 April, the Eight Station Index is in drought free conditions for both the 12-month period and for the 24 month period. The Five Station Index is drought free for both periods as well. For the reservoirs for end-of-April storage, Lake Tahoe is at aD2 storage, and Trinity, Oroville, Berryessa, San Luis and Casitas are at a D1 level. The Nacimiento/San Antonio reservoir pair are 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 in a transition state from El Niño conditions to ENSO neutral conditions. Equatorial sea surface temperature anomalies for the tropical Pacific have been positive with values of 0.3°C in the Niño 3.4 at the beginning of May. The February through April 3-month running mean of the Ocean Niño Index (ONI) is 1.2 which is the tenth 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 (May through July) from NOAA indicates a higher probability of above normal temperatures for the State. For precipitation, 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

April 2010 saw delays in planting and harvesting due to the wet and stormy weather. Barley, oat and wheat fields matured at a slower rate while dryland crops benefitted from the rains. The cherry bloom occurred in April with some damage reported due to hail. Hail also impacted each, nectarine, and plum orchards. Almond development was strong in the cool wet weather although fungicide applications became necessary. Vegetable and field crop plantings were delayed by the wet weather. Carrots, asparagus and lettuce were harvested in April. Range conditions showed improvement in April due to the cool, wet weather. Supplemental feeding continued to be scaled back. Lambing began in Lassen County while late calving finished in other areas. 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 – 99°F (Squaw Lake, Colorado River Desert)
Low Temperature – -12°F (Big Meadows, Tulare Basin)
High Precipitation – 12.79 inches (Gasquet Ranger Station, North Coast)
Low Precipitation – 0 inches (Needles, Colorado River Desert)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 90.8°F (UC San Luis, Imperial County)
Low Average Minimum Temperature – 23.5°F (Big Bear Lake, San Bernardino County)
High Precipitation – 7.40 inches (Camino, El Dorado County)*
Low Precipitation – 0 inches (8 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	Apr	Oct-Apr	Stations	Apr	Oct-Apr	Apr	Oct-Apr
North Coast	0.27	5	5	5	19	11	11	250%	99%
SF Bay	0.03	2	2	2	6	4	4	230%	120%
Central Coast	0.06	3	3	3	11	10	10	238%	128%
South Coast	0.06	3	3	3	15	13	13	136%	109%
Sacramento River	0.26	5	5	5	43	38	36	199%	102%
San Joaquin River	0.12	6	6	6	25	22	22	214%	112%
Tulare Lake	0.07	5	5	5	28	26	24	208%	118%
North Lahontan	0.04	3	3	3	14	10	9	154%	88%
South Lahontan	0.06	3	3	3	15	13	13	139%	142%
Colorado River	0.03	1	1	1	6	5	5	40.3%	171%
Statewide Weighted Average	1	36	36	36	182	152	147	204.6%	110%

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	31	28.5	44.5	70.8
SF Bay	18	38.3	51.2	69.7
Central Coast	37	40.0	52.9	70.1
South Coast	66	37.0	53.8	77.6
Sacramento	94	27.3	45.1	72.4
San Joaquin	74	28.1	46.4	69.5
Tulare Lake	18	12.4	38.1	67.0
North Lahontan	31	12.8	35.0	59.7
South Lahontan	22	37.0	53.8	67.6
Colorado River Desert	22	47.5	66.7	85.7
Statewide Weighted Average	413	28.0	45.9	71.0

U.S. Drought Monitor

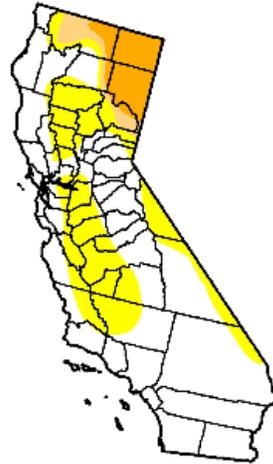
California

March 30, 2010
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	63.2	36.8	9.9	7.1	0.0	0.0
Last Week (03/23/2010 map)	64.3	35.7	9.9	7.1	0.0	0.0
3 Months Ago (01/05/2010 map)	6.6	93.4	72.8	9.0	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 (03/31/2009 map)	5.2	94.8	63.8	22.5	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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Author: M. Rosencrans, CPC/NOAA

U.S. Drought Monitor

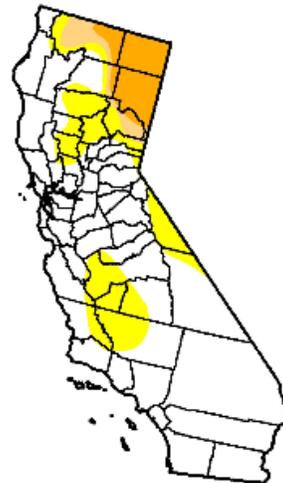
California

April 27, 2010
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	72.8	27.2	9.9	7.1	0.0	0.0
Last Week (04/20/2010 map)	67.6	32.4	9.9	7.1	0.0	0.0
3 Months Ago (02/02/2010 map)	43.2	56.8	18.8	2.2	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 (04/28/2009 map)	3.6	96.4	73.0	38.8	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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Author: Richard Heim, NCDC/NOAA