

California Monthly Climate Summary
August 2013

Weather Highlights

August 2013 was another warm, dry month for California. According to the Western Region Climate Center's [California Climate Tracker](#), the monthly average temperature was 72.0°F which is 0.2°F higher than the long-term average of 71.8°F. With a statewide average of 0.23 inches, precipitation in August was 80% of average. This is the driest January to August on record with a total of 4.81 inches of precipitation. The mean for this period is 14.47 inches. The previous record low was in 1924 when 6.13 inches was recorded. Regional maximum and minimum temperature and precipitation plots for August and for the January through August time period are shown at the end of the document.

August began with near normal temperatures for the state. A low pressure system offshore of the Pacific Northwest helped to moderate temperatures in the north while the southeast deserts topped 110°F in some places. The second week saw a low pressure system offshore of California keeping mild temperatures in place. Some drizzle along the coast and mountain thunderstorms provided the only precipitation. As the low pressure exited the region at the end of the week, temperatures began to warm. The third week saw temperatures top 100°F in the Central Valley while Southern California temperatures rose into the 90's. The only precipitation was scattered thunderstorms in the mountains. Onshore flow returned the following week and the monsoon pushed into the state at the end of the month dropping locally heavy precipitation on parts of Southern California. This led to some localized flash flooding and plenty of lightning strikes.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 65 temperature records tied or broken and 8 precipitation records set for the month. Of the 65 temperature records set, 11 were for new high maximum temperatures and 33 were for new high minimum temperatures. Records were set over 24 days of the month. Downtown San Francisco broke a 1907 daily rainfall record on August 8th when 0.03 inches of rain fell. The old record was 0.02 inches. Los Angeles International Airport set a low maximum temperature record on the 24th with a reading of 69°F. The old record of 71 was set in 2009 and 1946.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 17 stations recorded a minimum temperature below freezing during the month while 76 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 August was wet in several places but below normal overall. For the CDEC precipitation gages, the largest amount of precipitation recorded for the month was at Bodie in the North Lahontan region with 1.04 inches. This is 155% of the average precipitation for this station for the month. At the other end of the spectrum, 48 stations recorded no precipitation for the month. For the CIMIS network, Calipatria/Mulberry in Imperial County topped the precipitation charts with 4.02 inches for the month and 91 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 0.03 inches in August. On average, 0.3 inches of precipitation is recorded for the month. For the combined January to August total, the 8-Station Index is 11.33 inches which is the second lowest Jan-Aug total in the period of record which dates back to water year 1921. The lowest value was 11.32 inches set in 1924. Statewide, the average precipitation for the month was 81.0% 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

August 2013 continues California's fifth 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 August 26, 2013 is shown at the end of the document. As of the end of August, California has 1046 volunteers signed up spanning 53 of California's 58 counties. The counties without volunteers are Alpine, Colusa, Glenn, Modoc, and Tuolumne. The county with the most volunteers at the end of August is Sonoma with 98 volunteers. San Diego County is close behind with 94 volunteers. For the month of August, 9,263 reports were recorded for California. The largest daily rain total for CoCoRaHS- CA in August was in San Bernardino County where 2.48 inches was recorded on 8/30/2013. There were no snowfall reports recorded and no total snow for August. No hail reports were submitted in August. To join CoCoRaHS or find more information, please visit <http://www.cocorahs.org>.

Snowpack and Water Supply Conditions

The Water Supply Index (WSI) for WY2013 for the Sacramento Basin fell into the dry category and the San Joaquin fell into the critical category. Further information 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/cqi-progs/iodir/WSIHIST>.

Drought Monitor and Seasonal Outlook

The maps for California for July 30, 2013 and August 27, 2013 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 August 27th depiction, 11.36% of California is depicted in D3 or extreme drought, 82.50% of California is depicted in the D2 or severe drought category, 4.37% of California is depicted in the D1 or moderate drought category. An additional 1.77% of the state is depicted as D0 or abnormally dry. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for September through November from NOAA depicts California in persisting drought throughout the state. 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.

For more information on water conditions in California, visit <http://www.water.ca.gov/waterconditions/>. A table showing end-of-month reservoir storage by hydrologic region is shown at the end of this document. Statewide, reservoir storage at the end of August was 79% of average. At the end of August 2012, storage was 97% of average.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is currently in neutral conditions. Equatorial sea surface temperature anomalies for the tropical Pacific have been normal with values of 0.0°C in the Niño 3.4 at the end of August. The June through August 3-month running mean of the Ocean Niño Index (ONI) is -0.4. Five consecutive ONI values need to be below the threshold of -0.5 for conditions to be classified as a La Niña event (five consecutive values above the 0.5 threshold need to be observed for classification as an El Niño event). Most forecast models have the tropical sea surface remaining near neutral conditions for the rest of the calendar year. 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 (September through November) from NOAA indicates a higher probability of above normal temperatures for the eastern half of the state. For precipitation, equal chances of above or below normal conditions apply across the 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

August 2013 saw further crop development and harvest. Rice fields continued to head and cotton bolls started to open. Fields showed signs of water and insect stress. Alfalfa and Sudan grass were cut and baled with good drying conditions. Black-eyed peas and potatoes showed signs of ripening. Wine grapes began harvest in the Napa

Valley and San Joaquin Valley. Raisin grapes were dried on the vine and in trays. Table grape harvest continued. Prune harvest was wrapping up in the Sacramento Valley and continuing in the San Joaquin Valley. Pear harvests remained active on the North Coast and Central Valley. Granny Smith and Gala apple harvests continued. Growers were topping harvested stone fruit trees. Kiwifruit, persimmons, and pomegranates continued to develop. Ruby red grapefruit, lemons, and Valencia oranges continued to be harvested. Almond harvest continued while harvest preparations were made for walnuts and pistachios. Summer vegetables, garlic and melons were also harvested across the state. Range conditions deteriorated in the warm weather and were reported to be in fair to very poor condition. Supplemental feeding continued and ranchers have been searching for winter feed. 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 – 114°F (3 stations, Colorado River Desert)

Low Temperature – 5°F (Casa Vieja Meadows, Tulare)

High Precipitation – 1.04 inches (Bodie, North Lahontan)

Low Precipitation – 0 inches (48 stations)

Statewide Extremes (CIMIS)

High Average Maximum Temperature – 109.4°F (Salton Sea East, Imperial County)

Low Average Minimum Temperature – 40.2°F (Alturas, Modoc County)

High Precipitation – 4.02 inches (Calipatria/Mulberry, Imperial County)*

Low Precipitation – 0 inches (91 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	Aug	Oct-Aug	Stations	Aug	Oct-Aug	Aug	Oct-Aug
North Coast	0.27	5	4	4	17	10	8	120.7%	84%
SF Bay	0.03	2	2	2	6	5	3	35.4%	82%
Central Coast	0.06	3	3	3	11	5	4	0.0%	53%
South Coast	0.06	3	3	3	14	9	8	67.8%	48%
Sacramento River	0.26	5	5	5	41	26	26	33.0%	85%
San Joaquin River	0.12	6	6	5	24	15	10	0.0%	72%
Tulare Lake	0.07	5	5	5	28	20	22	271.1%	60%
North Lahontan	0.04	3	3	3	13	7	6	164.2%	76%
South Lahontan	0.06	3	2	2	15	2	2	52.7%	85%
Colorado River	0.03	1	1	1	6	5	4	199.7%	88%
Statewide Weighted Average	1	36	34	33	175	104	93	81.0%	77%

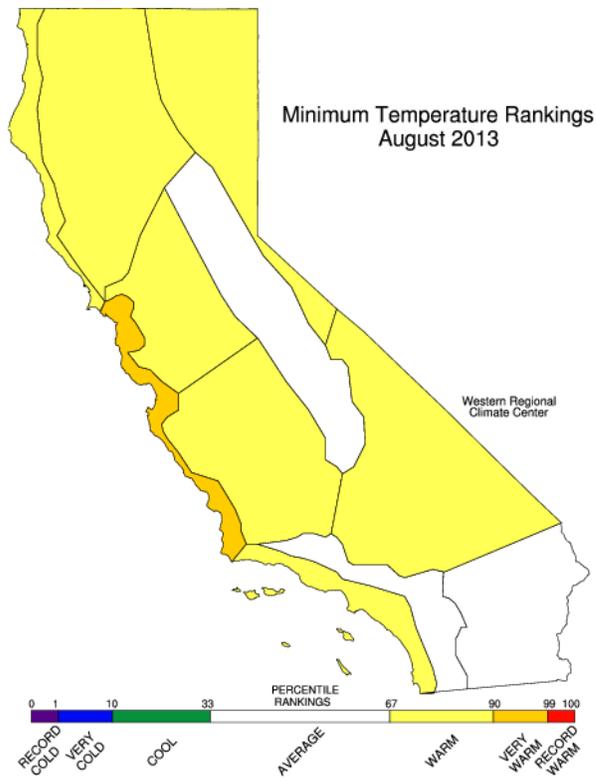
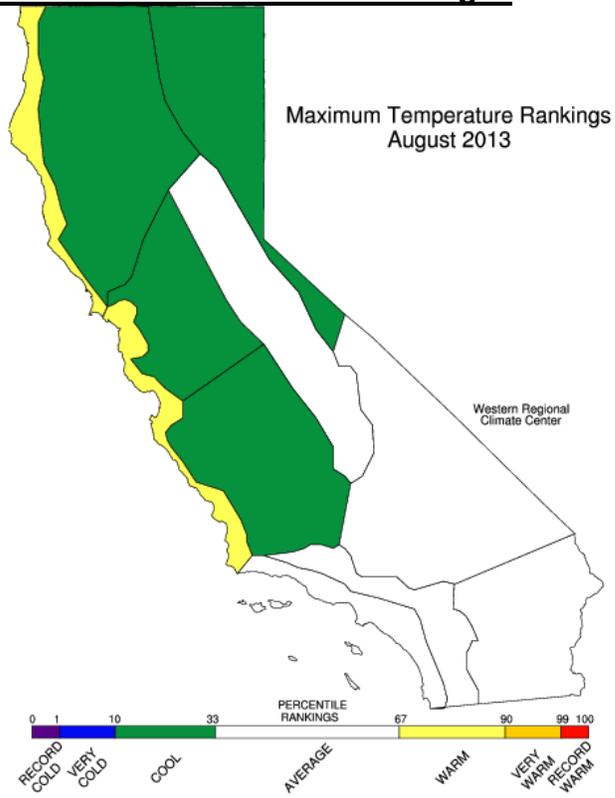
Statewide Mean Temperature Data by Hydrologic Region (degrees F)

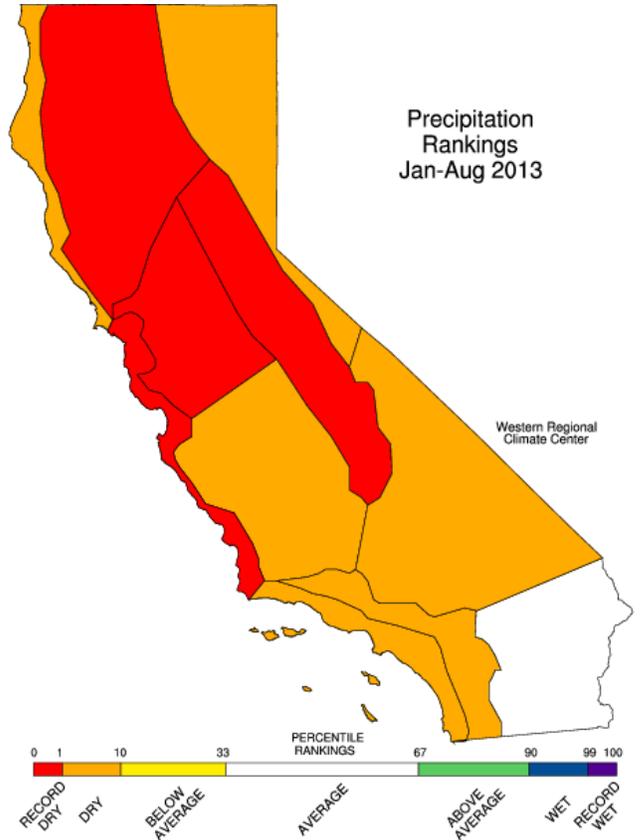
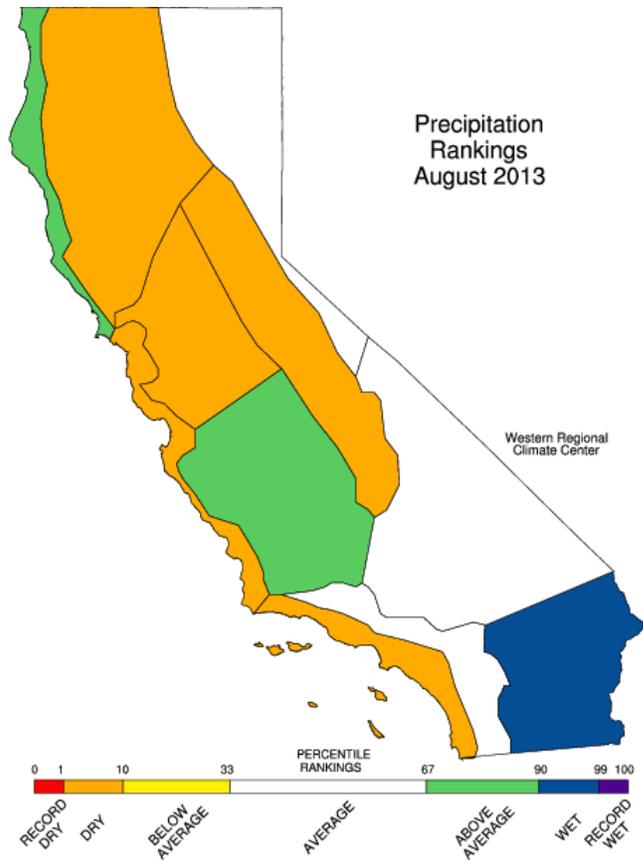
Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	18	46.1	65.8	93.0
SF Bay	10	50.2	67.0	94.8
Central Coast	10	47.9	69.8	96.5
South Coast	37	52.4	74.5	98.5
Sacramento	74	48.2	69.4	96.0
San Joaquin	44	47.0	67.2	90.8
Tulare Lake	20	39.6	59.2	79.5
North Lahontan	25	38.4	58.2	79.4
South Lahontan	14	44.6	65.0	84.9
Colorado River Desert	6	67.7	89.8	109.7
Statewide Weighted Average	258	47.2	67.6	92.6

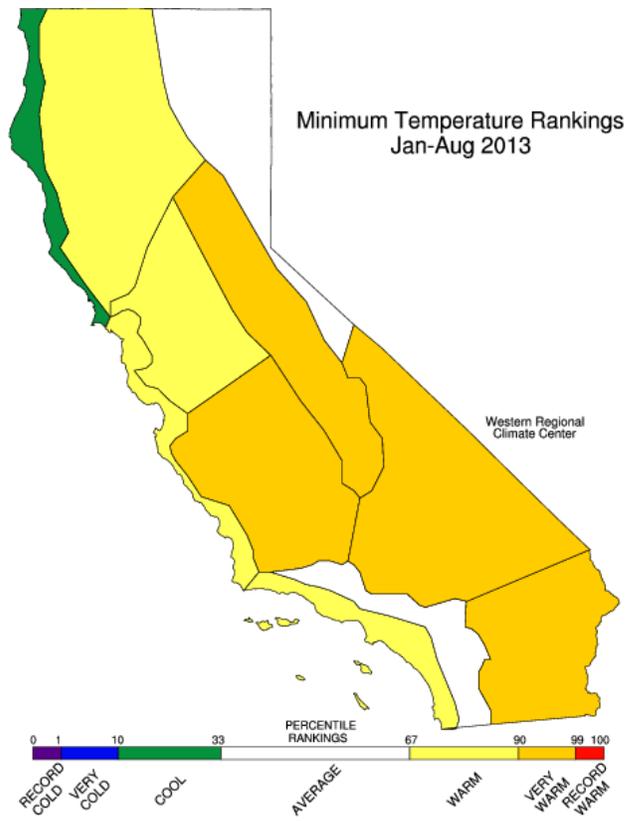
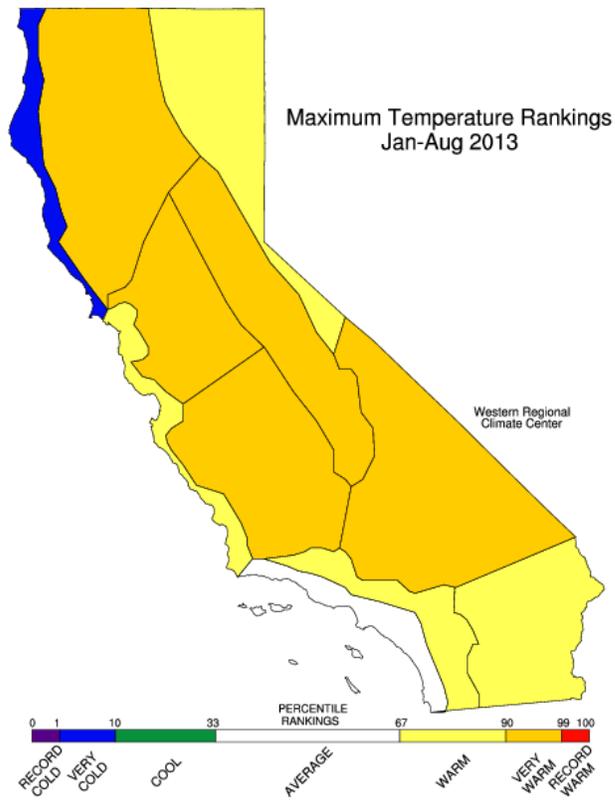
End-of-May Reservoir Storage by Hydrologic Region
Storage in Thousand Acre-Feet (taf)

End-of-August Reservoir Storage	Number of Reservoirs	Average Storage (taf)	2013 Storage (taf)	% of Average
North Coast	6	2,151	1,695	79%
San Francisco Bay	17	444	407	92%
Central Coast	6	578	308	53%
South Coast	29	1,367	990	72%
Sacramento	43	10,621	8,635	81%
San Joaquin	34	6,771	5,449	80%
Tulare	6	786	355	45%
North Lahontan	5	574	438	76%
South Lahontan	8	292	239	82%
Total	154	23,587	18,519	79%

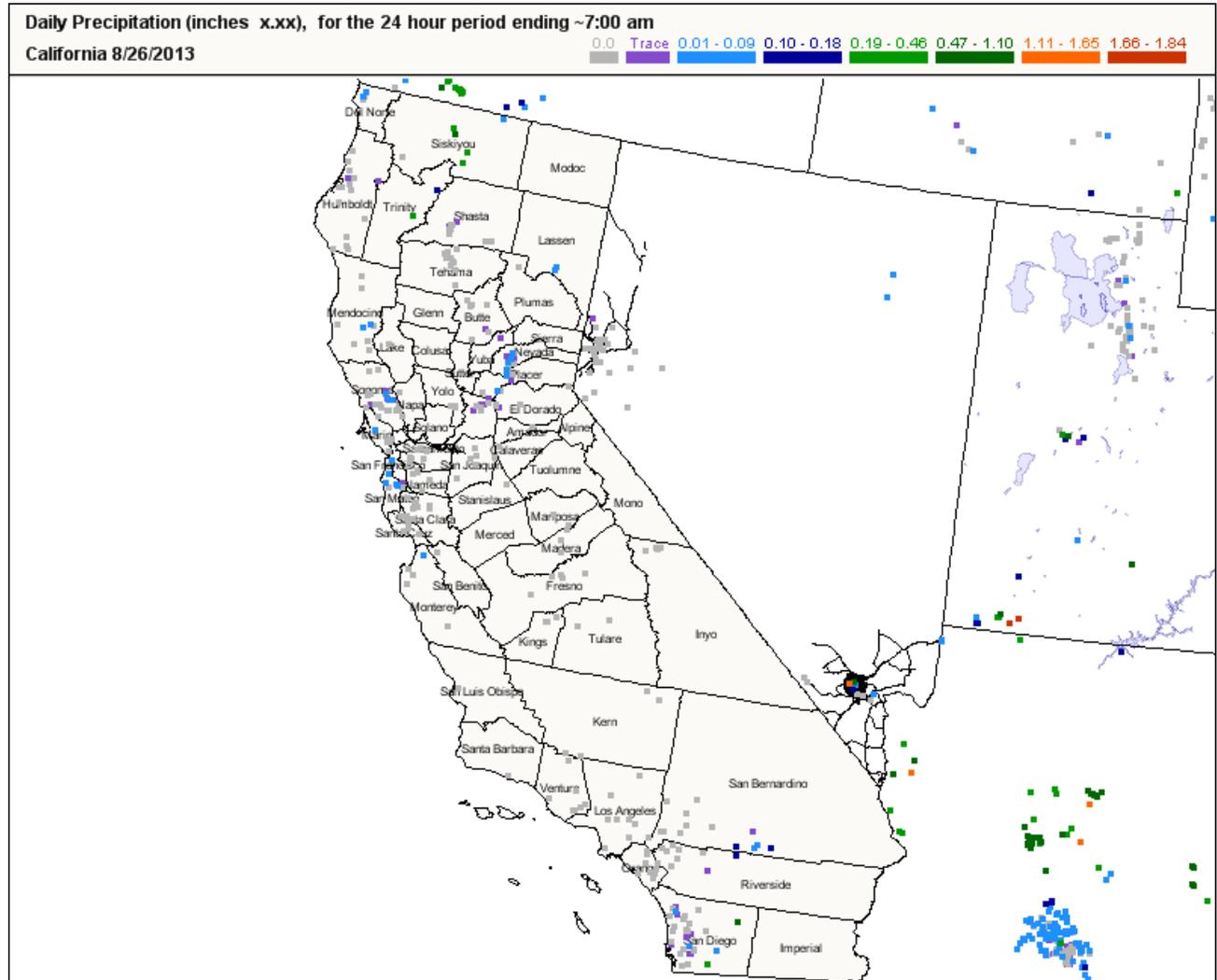
California Climate Tracker Images







CoCoRaHS Map



U.S. Drought Monitor

California

July 30, 2013
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	98.23	93.86	0.00	0.00
Last Week (07/23/2013 map)	0.00	100.00	98.23	93.96	0.00	0.00
3 Months Ago (04/30/2013 map)	0.00	100.00	64.30	32.82	0.00	0.00
Start of Calendar Year (01/01/2013 map)	31.75	68.25	55.32	22.50	0.00	0.00
Start of Water Year (09/25/2012 map)	11.95	88.05	69.41	22.27	1.14	0.00
One Year Ago (07/24/2012 map)	11.64	88.36	63.80	26.85	0.29	0.00

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://droughtmonitor.unl.edu>



Released Thursday, August 1, 2013
Brian Fuchs, National Drought Mitigation Center

U.S. Drought Monitor

California

August 27, 2013
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	98.23	93.86	11.36	0.00
Last Week (08/20/2013 map)	0.00	100.00	98.23	93.86	11.36	0.00
3 Months Ago (05/28/2013 map)	0.00	100.00	98.16	46.25	0.00	0.00
Start of Calendar Year (01/01/2013 map)	31.75	68.25	55.32	22.50	0.00	0.00
Start of Water Year (09/25/2012 map)	11.95	88.05	69.41	22.27	1.14	0.00
One Year Ago (08/21/2012 map)	11.30	88.70	69.20	23.30	0.29	0.00

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://droughtmonitor.unl.edu>



Released Thursday, August 29, 2013
Anthony Artusa, NOAA/NWS/NCEP/CPC