

DECEMBER 2020 WEATHER SUMMARY FOR THE CENTRAL CALIFORNIA INTERIOR

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Below average precipitation once again occurred this month; however, there were a couple of decent events in portions of the Sierra Nevada. First, several inches snow fell above 6,500 feet on each day of the 12th and 13th, mainly from Yosemite to Sequoia National Park. Second, brief heavy rain occurred during the evening of the 12th in Merced County and the Sierra Nevada foothills in Mariposa County. With this storm, Merced reported near one half of an inch of rain. Rainfall in the Central Valley was around 0.25 to 0.50 inch in quite a few locations. Another system brought a similar amount of precipitation on the 17th. Towards the end of the month, or on the 28th, a stronger low pressure system brought about a foot of snow to the higher elevations of the Sierra Nevada and up to an inch of precipitation in the Sierra Nevada and foothills below 6,500 feet, with mainly 0.10 to 0.40 inch of rain in the San Joaquin Valley and around 0.10 to 0.25 inch in the Kern County desert. However, precipitation ended up below average in much of Central California with temperatures around a couple of degrees above average for December. Otherwise, above average daytime high temperatures prevailed throughout the month, except for quite a few chilly mornings (e.g., Table 2).

**Table 1 – December 2020 Summary Statistics –
NWS Hanford, CA ASOS Sites**

Location	Monthly Average Temp (deg F)	Departure from Average (deg F)	Temperature Rank	Total Monthly Precipitation (inches)	Departure from Normal (inches)	Precipitation Rank
Bakersfield	49.9	+2.1	36 th warmest	0.35	-0.67	34 th lowest
Fresno	48.9	+2.4	28 th warmest	1.14	-0.63	60 th lowest
Hanford	46.7	+2.2	33 rd warmest	0.54	-1.09	34 th lowest
Madera	46.6	+1.3	37 th warmest	0.61	-1.09	20 th lowest
Merced	46.2	+1.6	44 th warmest	1.20	-0.32	42 nd lowest

Table 2 – Number of Days with Freezing Low Temperatures (at or below 32 degrees Fahrenheit):

Location	December 2020	December Average	Departure
Bakersfield	2	6	-4
Fresno	0	6	-6
Hanford	13	11	+2
Madera	11	9	+2
Merced	10	10	0

The month started with warmer than average temperatures and continued dry conditions. High temperatures were several degrees above average, though nighttime lows were mainly near to below seasonal averages. A Freeze Warning remained in effect on the morning of the 1st in the San Joaquin Valley, as overnight lows dipped down to around 30 degrees. A warming trend began on the 2nd, although Chilly mornings prevailed until the 11th. By the 3rd, rather warm daytime high temperatures occurred, and easterly winds developed over the mountains. Highs peaked into the lower to mid-70s on the 3rd towards Bakersfield and much of the southern San Joaquin Valley as some winds that moved down the slopes of the Tehachapi Mountains and southern Sierra Nevada warmed temperatures. These winds which were generally in an easterly direction allowed relative humidity to plummet to the single digits during the day. Winds gusted around 50 miles per hour in the mountain areas that day and again on the 4th. Otherwise, mainly warm, dry weather prevailed for the next several days with brief periods of low humidity and breezy conditions in the mountains.

A low-pressure system that moved from the Pacific Northwest into the Great Basin as an inside-slider brought light to moderate precipitation on the night of the 11th into the morning of the 12th. Precipitation in the Central Valley was around 0.10 to 0.50 inch, and around 0.50 to 0.80 inch of rain in the Sierra Nevada and foothills below 6,500 feet. Several inches of snow fell above 6,500 feet in the Sierra Nevada in mainly Fresno County northward, with around 2-4 inches in Tulare County. As for Kern County, the mountain areas had persistent low clouds and light rain for much of the 12th. In addition, gusty winds developed that morning in the Kern County Mountains and desert. Some isolated gusts reached above 60 miles per hour (and a whopping 93 miles per hour gust was reported over Bird Springs Pass, or a ridge top in the far southern Sierra Nevada northeast of Tehachapi). Another inside-slider trough of low pressure arrived on the night of the 13th and moved southward into Kern County by the early morning of the 14th; This system brought another round of light to moderate precipitation and high elevation snow (above 6,500 feet). Similar amounts of precipitation fell with this storm, except some Sierra Nevada locations near Yosemite received around an inch of precipitation.

During the 15th and 16th, dense fog formed in the Central Valley. The fog lasted mainly until around 10:00 AM. Otherwise, this was a brief dry period prior to the next low pressure system that arrived on the late night of the 16th/early morning of the 17th. This system brought up to 0.75 inch of rain below the 6,500 foot elevation. At and above 6,500 feet, around 9 inches of snow fell, mainly in the Sierra Nevada north of Tulare County. Lesser amounts of snow accumulated in the mountains of Tulare and Kern Counties. Afterward, dense fog formed during the nights and mornings in the San Joaquin Valley. Daytime highs were generally around average to slightly above for the next few days throughout the region, except for areas in the Central Valley where low clouds remained after the fog lifted. On the 20th through the 23rd, many locations failed to top the 40's for high temperatures where the low clouds persisted for much of the day. Dense fog quickly returned by sunset in areas where the skies cleared during this period.

On the 24th and the next couple of days, more cloud cover at the mid and upper levels moved over the region due to an upper-level disturbance that formed off the coast of Southern California. Even with this increased cloud cover, daytime highs rose to at least several degrees above average. On the night of the 27th into the morning of the 28th, a stronger upper-level low brought precipitation to much of our portion Central California. A few locations in the San Joaquin Valley, the Sierra Nevada foothills, and the Tehachapi Mountains reported thunder at times. Even the Kern County desert areas received precipitation. During this time, snow accumulated on the Grapevine at just below 4,000 feet, and the CHP had to pace traffic along Interstate 5. There was also a brief closure of the freeway on the 28th, but was reopened by the afternoon. Night and morning fog returned to the Central Valley starting during the early morning of the 29th, and the fog was also reported at Edwards AFB that morning.

Another weak upper-level low arrived by the morning of the 31st. This feature was strong enough to bring snow to the Kern County mountain areas, including at the Grapevine at elevations of and above 3,000 feet. Low cloud cover persisted over this area and the San Joaquin Valley until the evening.

Overall, the month ended up with above average temperatures, except for some areas of near average temperatures (Fig 1), along with below average precipitation (Fig 2).

Table 3 – Seasonal Precipitation for ASOS locations (ending on December 31st)						
Location	Since Jan 1st (inches)	Departure from Normal (inches)	Since Jul 1st (inches)*	Departure from Normal (inches)	Since Oct 1st (inches)**	Departure from Normal (inches)
Bakersfield	5.35	-1.12	0.74	-1.34	0.74	-1.22
Fresno	6.17	-5.33	1.42	-2.24	1.42	-2.05
Hanford	4.98	-5.12	0.67	-2.67	0.67	-2.46
Madera	4.53	-7.49	0.77	-3.25	0.77	-2.96
Merced	6.86	-5.64	2.28	-1.54	2.28	-1.23

*Rain Year 2020-2021 (July 1st-date)

**Water Year 2020-2021 (October 1st-date)

Table 4 – Warmest High Temperatures and Coolest Low Temperatures of the Month for ASOS locations				
Location	High	Date(s)	Low	Date(s)
Bakersfield	74	3 rd	29	24 th
Fresno	69	5 th , 9 th	35	19 th , 21 st
Hanford	69	3 rd , 5 th	30	11 th , 30 th
Madera	71	3 rd	30	7 th 30 th
Merced	68	3 rd , 7 th	29	1 st , 7 th

Daily Records Set During December 2020

Bakersfield – No records set.

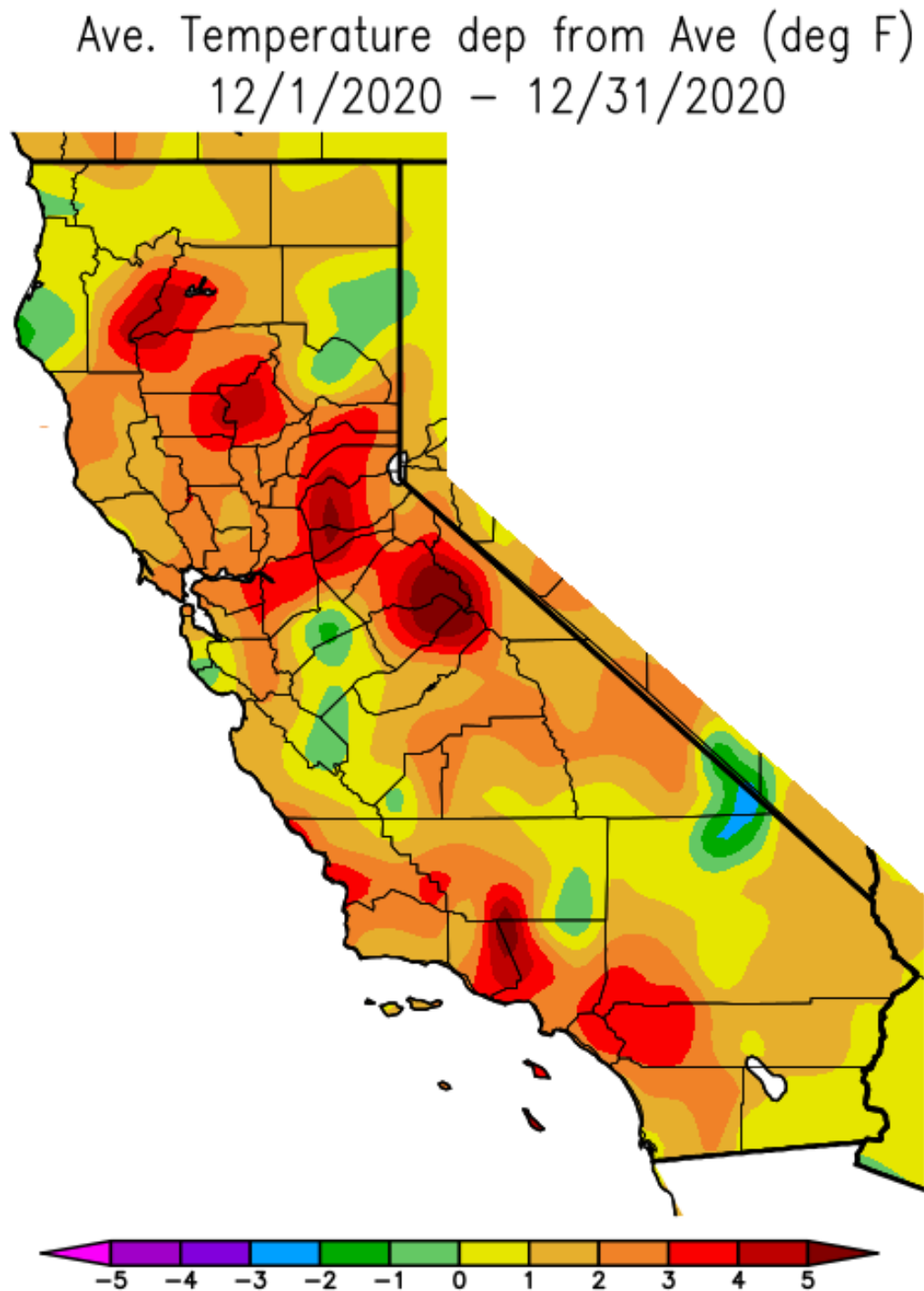
Fresno – No records set.

Hanford – No records set.

Madera – No records set.

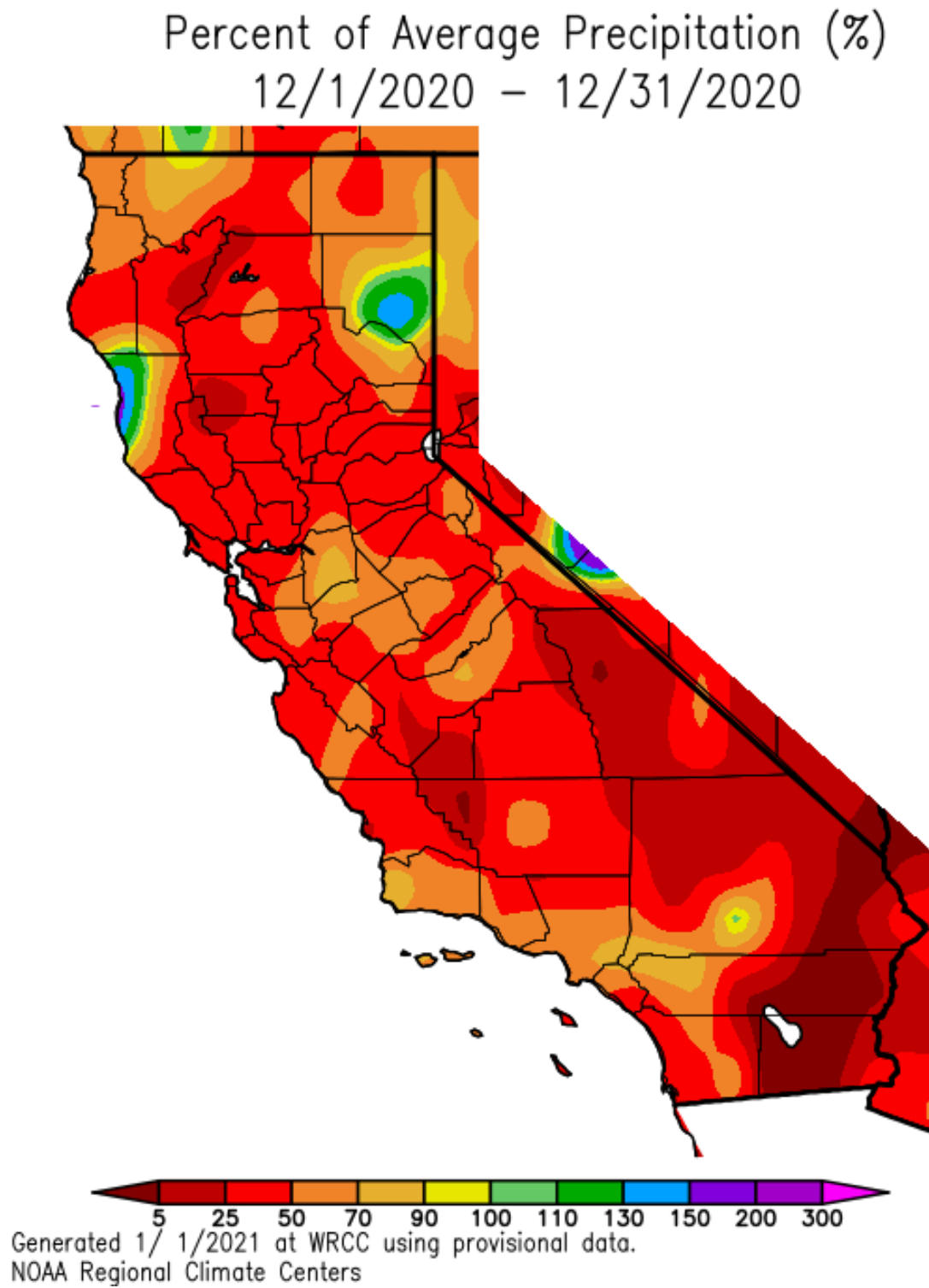
Merced – No records set.

Figure 1 – Departure from Average Temperature for December 2020



Generated 1/ 1/2021 at WRCC using provisional data.
NOAA Regional Climate Centers

Figure 2 – Percent of Average Precipitation for December 2020



*Images above (i.e., Figures 1-2) courtesy of Western Region Climate Center