MARCH 2020 WEATHER SUMMARY
FOR THE CENTRAL CALIFORNIA INTERIOR

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A weak storm system passed over the Central California interior region on the 1st. Very little precipitation was reported, but temperatures lowered by about 10 to 15 degrees compared to the previous day. Relatively cool weather prevailed until the 2nd, and high pressure returned during the 3rd through the 6th, along with a warming trend. Highs reached into the upper-70s to the mid-80s throughout the San Joaquin Valley during the 4th through the 6th, and record highs were reached on the 6th at Bakersfield, Hanford, and Madera.

The high pressure weakened on the 7th, and temperatures were quite a bit lower. However, highs still reached several degrees above average. A low pressure system arrived on the 7th and brought mainly sprinkles and light precipitation in the San Joaquin Valley with some light showers and snow above 5,000 feet in the Sierra Nevada. After the low passed, below average temperatures prevailed on the 8th throughout Central California. On the following day, or on the 9th, temperatures remained relatively cool, though rose to near or slightly above seasonal averages ahead of a stronger, deeper low pressure system that was off the coast of Southern California.

On the morning of the 10th, the low pressure system that was located off the coast of California began bringing moisture into our forecast area from the south. Mainly light rain fell in the Kern County mountains and desert initially, and additional subtropical moisture continued to stream further north. As a result, showers and thunderstorms developed by the afternoon. The stronger storms produced heavy rain and flash flooding in the desert towards California City and near Red Rock Canyon (over an inch of rain fell in a relatively short time period), as well as some mudslides around Frazier Park (which received nearly three inches of rain through the course of the day). The radar even showed some of the thunderstorm cells with fairly strong rotation over southeastern Kern County (or in the desert), so three tornado warnings were issued. Otherwise, some moderate to brief heavy rain fell in the San Joaquin Valley and the adjacent higher terrain, with the highest amounts generally in Kern County (including the south end of the valley and into the Temblor Range). Most Central Valley locations reported around a quarter to two thirds of an inch of rain.

On the 11th through the 12th showers and thunderstorms continued to develop over the higher terrain during the afternoons and evenings. A flash flood warning was issued near Shaver Lake on the afternoon of the 11th, and a flood advisory was issued for heavy rain in the Tehachapi Mountains during the late night hours of the 12th into the early predawn hours of the 13th.

Afterward, light showers persisted in the Kern County mountains and desert well into the morning hours after sunrise, as the upper-level low moved over the Desert Southwest and continued to bring warp-around moisture from the east. There was a break from precipitation, at least over the San Joaquin Valley, during the 14th and 15th, before the next storm that brought widespread precipitation arrived.

On the 16th, the storm brought around 0.50 to 1.00 inch of rain in the San Joaquin Valley with several inches up to three feet of feet of snow in the Sierra Nevada at elevations mainly above 5,500 feet. The low pressure system moved inland by the 17th so that precipitation ended in the mountains that day. On the 17th and 18th, cool temperatures otherwise prevailed, especially during the mornings when lows reached near freezing in the coldest spots in the San Joaquin Valley.

A weak upper-level disturbance brought shower activity on the 19th through the 21st before the next storm arrived. Some isolated thunderstorms developed in the afternoon hours along the west side of the San Joaquin Valley on the 19th, and thunderstorm activity shifted towards the east side of the valley and into the Sierra Nevada foothills on the 20th. Frequent lightning, small hail, and brief heavy rain accompanied the strongest storms. There was even a funnel cloud reported by law enforcement near Selma on the afternoon of the 20th. Shower activity remained on the 21st, but was not as strong. Meanwhile, a cutoff low pressure system remained over the Great Basin that allowed disturbances to rotate around it into our region of Central California.

On the 22nd and 23rd, quite a bit of rain and mountain snow fell in our region. Another 0.50 to near 1.00 inch of rain accumulated in the San Joaquin Valley. Snow levels were initially around 7,000 feet on the 22nd as some warmer air made a brief return and allowed temperatures to rise back to around seasonal averages. However, cooler temperatures soon returned, as snow levels soon fell to around 5,500 feet on the night of the 23rd into the morning of the 24th. Colder air continued to filter into Central California, and by the 25th, snow levels had dropped as low as 3,000 feet, including in the Kern County mountains and the Sierra Nevada foothills. Isolated thunderstorms also occurred in parts of the San Joaquin Valley on the afternoon into the evening of the 25th when the atmosphere became sufficiently unstable. There was a report of a funnel cloud in the early evening on the east side of Bakersfield near Rio Bravo.

On the 26th and 27th, a quiet weather period prevailed with continued cooler than average temperatures. Lows reached into the upper 30s to the lower 40s in much of the Central Valley; otherwise, highs were several degrees below average.

Showery weather returned on the 28th and 29th due to a relatively weak low pressure system, although little precipitation fell during this period. Fresno reported 0.05 inch of rain on the 29th, and Hanford had 0.16 inch. Other Central Valley locations received around a trace up to a few

hundredths of an inch. Snow amounts were generally light in the mountains. Afterward, seasonal temperatures with mostly sunny skies prevailed for the last two days of the month.

Overall, the month was near average in terms of temperatures (Fig 1). Variable precipitation accumulated this month throughout the region. Much of the San Joaquin Valley, as well as the Kern County mountain and desert areas received near to above average precipitation, while the southern Sierra Nevada (mainly Tulare County) received below average precipitation (Fig 2). Unfortunately, the long-term precipitation and snowpack deficits remain for the season; snowpack is currently about 53 percent of normal in the southern Sierra Nevada.

Table 1 – March 2020 Summary Statistics for ASOS locations

Location	Monthly Average Temp (deg F)	Departure from Average (deg F)	Total Monthly Precipitation (inches)	Departure from Normal (inches)
Bakersfield	57.5	-0.1	1.57	+0.36
Fresno	56.6	0.0	2.32	+0.29
Hanford	54.7	-0.7	2.24	+0.61
Madera	54.0	-0.2	1.53	-0.27
Merced	53.8	+0.2	2.11	+0.04

Table 2 – Seasonal Precipitation for ASOS locations (ending on March 31st)

Location	Since Jan 1st (inches)	Departure from Average (inches)	Since Jul 1st (inches)	Departure from Average (inches)	Since Oct 1st (inches)	Departure from Normal (inches)
Bakersfield	1.82	-1.79	4.43	-1.23	4.41	-1.16
Fresno	2.98	-3.27	5.86	-4.05	5.86	-3.86
Hanford	3.05	-2.35	5.36	-3.38	5.36	-3.17
Madera	2.17	-4.21	4.43	-5.97	4.43	-5.68
Merced	2.84	-4.18	7.80	-3.04	7.80	-2.73

Table 3 – Warmest High Temperatures and Coolest Low Temperatures of the Month for ASOS locations				
Location	**High**	**Date**	**Low**	**Date**
Bakersfield	85	5th	39	17th
Fresno	82	5th	38	2nd
Hanford	82	5th	33	17th
Madera	81	5th	30	2nd
Merced	79	5th	31	2nd

Temperature/Precipitation Rankings for March 2020

Bakersfield – 56th warmest March on record; 30th highest precipitation for March on record.
Fresno – 50th warmest March on record; 39th highest precipitation for March on record.

Daily Records Set During March 2020

Bakersfield – 7th – Record high maximum temperature of 82 degrees tied that was also set for the date in 1972.

Fresno – No daily records set.

Fig 1 – Departure from Average Temperature for March 2020

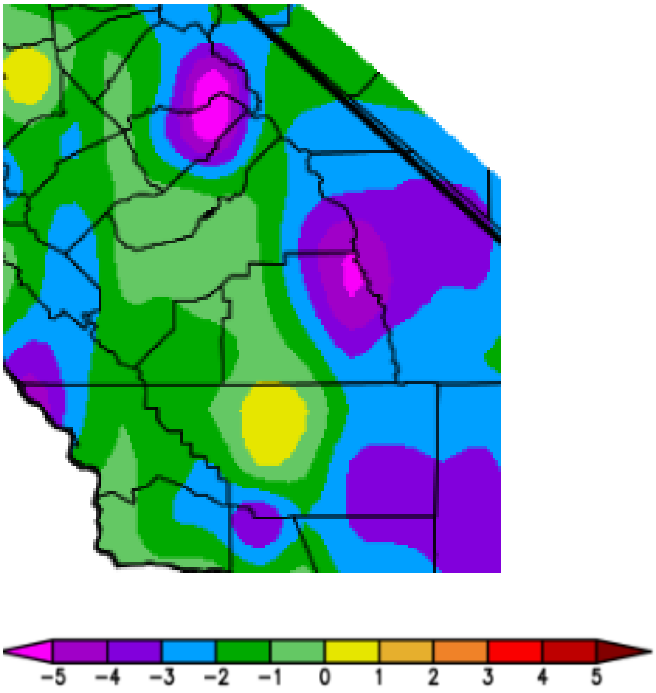

Fig 2 – Percent of Average Precipitation for March 2020

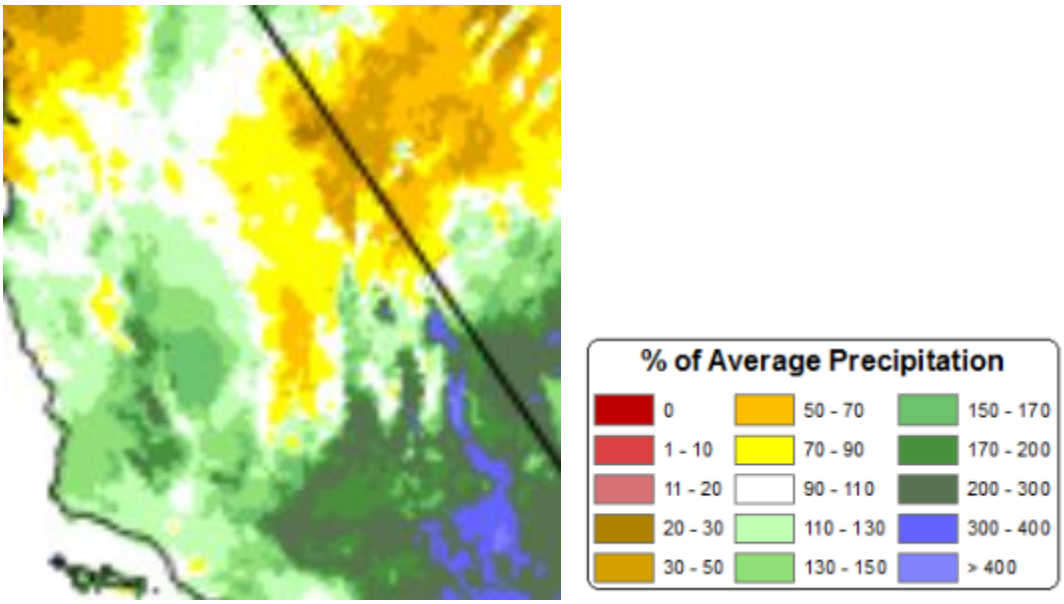

*Fig 1 image courtesy of Western Region Climate Center; Fig 2 images courtesy of PRISM Climate Group at Oregon State University