DECEMBER 2019 WEATHER SUMMARY
FOR THE CENTRAL CALIFORNIA INTERIOR

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The active period during the last week of the previous month continued. At least three storms passed over the region during the 1st through the 8th. The first system brought abundant moisture to Merced and Mariposa Counties during the 1st and 2nd, and around 2-3 inches of rain fell during this period at elevations below 8,000 feet. Elsewhere, precipitation amounts were around a quarter to half of an inch. Over a foot of snow accumulated above 8,000 feet with this system, especially around Yosemite National Park. Gusty winds continued at times through the Grapevine on the 1st and until the morning of the 2nd; gusts reached up to around 70 miles per hour at the base of the Grapevine on the Kern County side.

The second storm of the month arrived on the 4th and brought light to moderate rainfall in the San Joaquin Valley and Kern County desert. Rain amounts reached near an inch in Merced County to around a quarter to one half inch in Kern County. Some localized roadway flooding occurred in portions of the San Joaquin Valley and the Kern County desert. Snow levels were around 7,000 feet with this system.

On the 5th and 6th, the weather was fairly quiet, but patchy dense fog developed in parts of the Central Valley during the nights and mornings. However, there were a couple of reports of rocks and debris on some of the roadways in the Sierra Nevada foothills due to the recent rainfall and some melting snow (such as along Highway 140 near the Ferguson-Briceburg burn scars and Highway 168 at elevations around 3,000 feet below Shaver Lake).

The third system brought light to moderate precipitation on the 7th with relatively high snow levels (above 8,000 feet at times) once again. When the colder, unstable air aloft passed over Central California on the 8th, scattered showers and thunderstorms developed that produced heavy rain, including in portions of Fresno and much of the southern San Joaquin Valley. Around 0.50 to 1.00 inch of rain fell in an hour that afternoon with the stronger storms, while snow levels lowered to around 6,000 feet over the mountains. In addition, a funnel cloud was reported near Lemoore.

After these storm systems, more widespread dense fog developed in the Central Valley with visibility to near zero at times in some places. There were a couple of days, or on the 9th and 10th, when the fog was slow to lift and remained until the early afternoon hours but quickly returned in the early evening hours shortly after sunset. Another storm system arrived on the early

morning hours of the 11th, but moisture was limited and only briefly inhibited dense fog development. Visibility reached near zero at Bakersfield on that morning, as the storm system passed mainly to the north of Kern County. A brief quiet weather period followed on the 12th and 13th, but dense fog developed once again in the San Joaquin Valley on the morning of the 12th. Temperatures warmed to several degrees above average on the 13th, but the valley fog was further inhibited.

A weak upper-level low pressure system brought light showers to portions of the Sierra Nevada and San Joaquin Valley on the night of the 14th into the daytime hours of the 15th. Dense fog returned to parts of the Central Valley during the morning of the 15th even with mid-level cloud cover due to the low pressure system. After the low pressure system passed and colder air filtered into the region during the night of the 15th and into the morning of the 16th, gusty winds developed in the mountain and desert areas of eastern Kern County. Gusts as high as 80 miles per hour occurred at the exposed ridge tops and over 50 miles per hour at quite a few desert locations. Otherwise, low cloud cover persisted over the Grapevine, Tehachapi Mountains, and even into Bakersfield through the evening of the 15th.

Dry weather with chilly overnight lows occurred on the 16th through the 20th, with the coldest spots in the San Joaquin Valley reaching near to just below freezing in the morning and overnight hours. However, east to southeast winds developed during the late night hours of the 16th over the Tehachapi Mountains and spilled into the south end of the San Joaquin Valley, including in Bakersfield where a gust of 50 miles per hour was observed, by the morning of the 17th. Gusts were similar at the Grapevine and over the ridge tops in the Tehachapi Mountains (mainly around 50 to 55 miles per hour). As a result of the increased winds, temperatures rose much warmer by sunrise. Otherwise, high temperatures reached a few degrees above average on the 18th through the 20th due to a dry airmass in place, while little or no fog developed in the San Joaquin Valley.

A low pressure system arrived on the 22nd and brought precipitation to Central California. Gusty winds briefly developed along the west side of the San Joaquin Valley and at the base of the Grapevine in Kern County; the strongest gusts were around 45 to 50 miles per hour. Snow was falling at elevations around 6,000 feet in the Sierra Nevada during the daytime. The snow levels gradually lowered to around 5,000 feet by the following evening, and precipitation continued until late on the 23rd in the Central Valley. Light snow showers lingered into the 24th in the mountain areas at around 5,000 feet and above. Outside of the Sierra Nevada, mainly seasonal temperatures with partly sunny skies occurred on the 24th and continued into Christmas Day. However, patchy dense valley fog developed on each night and morning starting on the night of the 23rd into the morning of the 24th and again on Christmas Eve until the morning of Christmas Day.

A strong low pressure system arrived over Kern County and Southern California during the night of the 25th into the morning of the 26th. Colder air filtered into this region and produced snowfall as low as 2,000 feet in the Kern County mountain and desert areas. Both Highway 58 and Interstate 5 were closed through the mountain passes for periods up to around 36 hours. Highway 58 was briefly opened on the afternoon and evening of the 26th, but it was closed again when ice formed on the roadways. Light freezing rain was even reported in Tehachapi during the late night hours. However, Interstate 5 remained shut down until the late morning hours of the 27th, as ice had formed on the roadway, especially on the Grapevine, or near Lebec and Frazier Park. Other major travel routes were shut down that pass through Kern County due to snow and ice. Snow amounts with this storm were around one to two feet in much of the Kern County mountain areas, with the heaviest amounts at elevations above 5,000 feet, including towards Pine Mountain Club and Cuddy Valley (or west of the Grapevine). Quite a bit of snow fell in the Kern County desert above 2,500 feet, and amounts reached at least several inches at these locations. Liquid precipitation amounts exceeded an inch at Edwards AFB, Ridgecrest and Mojave, which fell mostly as rain before the changeover to snow that occurred during the late morning hours of the 26th.

A brief respite from the active weather occurred on the 28th and much of the 29th before another system arrived on the evening of the 29th. This system was also relatively cold and brought snow mainly to Tehachapi and above the Grapevine. However, snow amounts in Kern County were much lighter compared to the previous system, as this storm tracked mainly offshore and was off the coast of Central Baja California as of the evening of the 30th. Patchy fog and low developed in the San Joaquin Valley on the morning of the 30th, but visibility was not low enough to cause traffic issues.

Overall, the region reported near to well above average temperatures this month (Fig 1). Near average to above average precipitation accumulated (Fig 2).

Table 1 – December 2019 Summary Statistics for ASOS locations

Location	Monthly Average Temp (°F)	Departure From Average (°F)	Total Monthly Precipitation (inches)	Departure From Normal (inches)
Bakersfield	52.5	+4.7	1.52	+0.50
Fresno	51.0	+4.5	2.16	+0.39
Hanford	49.7	+5.2	1.64	+0.01
Madera	50.2	+4.8	1.71	+0.01
Merced	49.3	+4.7	2.78	+1.26

Table 2 – Seasonal Precipitation for ASOS locations (ending on December 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	9.11	+2.64	2.61	+0.53	2.59	+0.63
Fresno	12.40	+0.90	2.88	-0.78	2.88	-0.59
Hanford	9.94	-0.16	2.31	-1.03	2.31	-0.82
Madera	10.69	-1.33	2.26	-1.76	2.26	-1.47
Merced	14.36	+1.86	4.96	+1.14	4.96	+1.45

Table 3 – Warmest High Temperatures and Coolest Low Temperatures of the Month for ASOS locations				
Location	**High**	**Date(s)**	**Low**	**Date(s)**
Bakersfield	74	22nd	35	28th
Fresno	68	2nd	37	16th, 19th, 28th
Hanford	67	6th & 12th	31	28th
Madera	69	6th	30	28th
Merced	69	6th	29	28th

Temperature/Precipitation Rankings for December 2019

Bakersfield – Tied for 8th warmest December on record (with 1955 & 2010); tied for18th highest precipitation (with 1941) for December on record.
Fresno – Tied for 4th warmest December on record (with 1940 & 2005); 39th highest precipitation for December on record.

Daily Records Set During December 2019

Bakersfield – Record high daily precipitation of 0.62 inch on the 26th, which broke the old record of 0.18 inch for the date in 1968.
Fresno – Record high daily precipitation of 0.78 inch on the 1st, which tied the record for the date in 1952.

Fig 1 – Departure from Average Temperature for December 2019

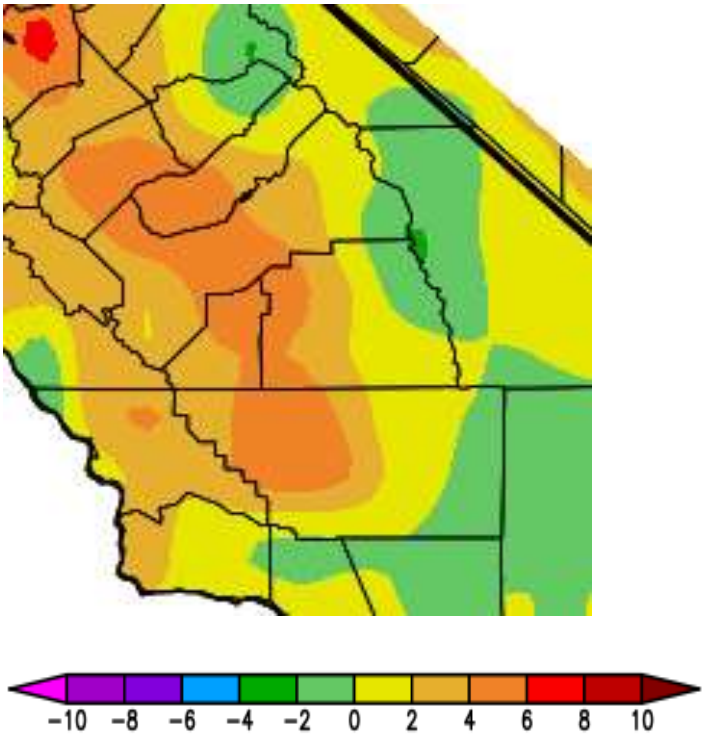
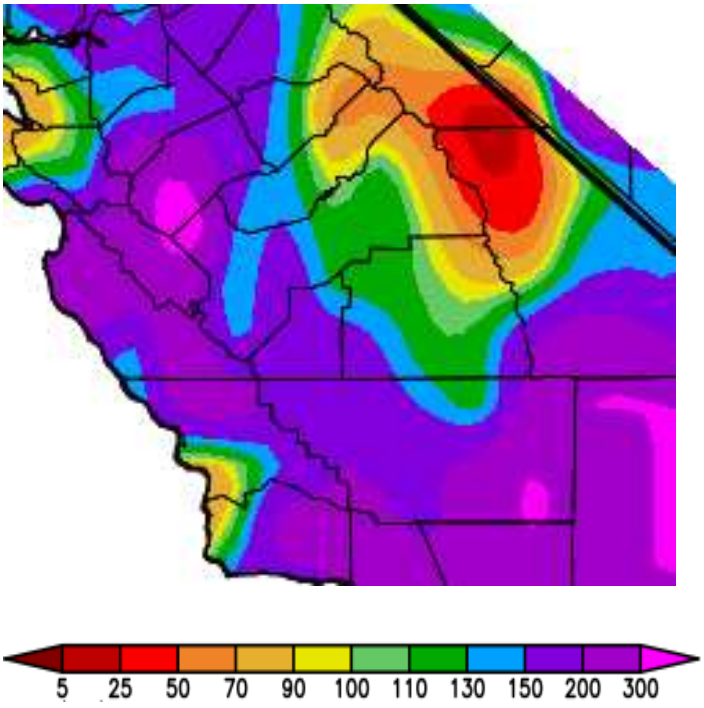


Fig 2 – Percent of Average Precipitation for December 2019



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