DECEMBER 2018 WEATHER SUMMARY
FOR THE CENTRAL CALIFORNIA INTERIOR

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Meteorological winter began with a cold low pressure system that brought rain and mountain snow on the 1st of the month. Rainfall ranged from a trace to a quarter of an inch in the San Joaquin Valley and up to around 2/3 inch in the Sierra Nevada foothills. Snow fell at elevations as low as 3,500 feet during the day in the Sierra Nevada and in the Kern County mountains during the following evening. Around 3 to 6 inches of snow, with a few locales that received as much as 10 inches, were reported in the Sierra Nevada high country. Lesser amounts fell in the Kern County mountain areas, but the slick and icy roads that resulted caused impacts to vehicular traffic (including vehicles spinning out and getting stuck in snow and ice) around Frazier Park and Pine Mountain Club. Around an inch or two of snow accumulated in these areas during the evening of the 1st into the morning of the 2nd. Patchy dense fog with visibility below a quarter mile and as low as 100 feet in a few spots also developed in the Central Valley during this period.

Weak high pressure set up by the afternoon of the 2nd and continued until the 4th. This feature allowed a brief return to dry conditions except for patchy dense fog in the San Joaquin Valley during the nights and mornings. A low pressure system soon followed, or by the 5th and 6th.

The system primarily affected southern portions of our forecast area, including much of Kern County and southern Tulare and Kings Counties where noticeably higher amounts of precipitation occurred. Quite a few locations in the mountains reported around 1.00 to 1.50 inches of precipitation, and even the desert areas in eastern Kern County reported around 0.50 to 1.00 inch of rain. Otherwise, the south end of the San Joaquin Valley had around 0.50 to 0.75 inch. Most of the moisture associated with this system moved south of Kern County where the heaviest amounts were reported. Precipitation amounts were generally a quarter to half of an inch in the southern San Joaquin Valley and around a tenth to a quarter inch in the Central Valley portions of Fresno County and northward. Light snow accumulated near the upper areas of the Grapevine along Interstate 5 during the 6th, as snow levels reached around 3,500 feet.

By the night of the 6th and morning of the 7th, dense fog developed in the San Joaquin Valley. Low clouds persisted for much of the day on the 7th and even during the 8th. Fog in the Merced area persisted for the entire day with visibility below one mile and down to around 1/8 mile for most of the day. During the morning and early afternoon of the 9th, low clouds persisted over the San Joaquin Valley, but the fog had lifted. On the morning of the 9th, the only place that reported

dense fog and poor visibility (as low as 50 feet) was the Grapevine, or from around Lebec to the runaway truck ramp just south of Grapevine along Interstate 5. Fog and low clouds persisted for the next couple of days over the San Joaquin Valley, while mainly clear skies and dry conditions prevailed elsewhere.

On the 13th, high pressure and mainly dry weather continued over the region, although high temperatures rose to around 5 to 15 degrees above average through the 16th. However, dense fog in the Central Valley was almost nonexistent during this period. The next storm system arrived by the evening of the 16th.

During the night of the 16th through the morning of the 17th, a storm system brought showers and mountain snow to elevations above 7,000 feet. Precipitation amounts were around a tenth of an inch to around an inch in the San Joaquin Valley, while around 0.50 inch to around an inch fell in the Sierra Nevada foothills. Several inches of snow fell, or around 3 to 6 inches, in the Sierra Nevada, while little or no snow fell in the Kern County mountains. No measurable precipitation was reported in the Kern County desert, although winds increased with gusts around 55 mph below the passes and canyons, as well as over some ridgetops.

During the 18th through the 23rd, high pressure once again prevailed, and patchy dense fog formed over the Central Valley with visibility below ¼ mile and down to around 200 feet during the nights and mornings. Low clouds otherwise persisted throughout much of the daytime hours over the San Joaquin Valley and Sierra Nevada foothills. Dense fog even developed in parts of the Sierra Nevada foothills and Tehachapi Mountains, and visibility was also quite low at times in the nights and mornings, even as low as 50 feet along Interstate 5 through the Grapevine. The low clouds prevailed over the lower elevations for much of this period, except for the Kern County desert areas. A weak upper-level disturbance moved over mainly Central California on the night of the 21st into the morning of the 22nd, but it was strong enough to provide lift for the low clouds to produce drizzle over many areas in the San Joaquin Valley.

On the evening of the 24th through the morning of Christmas Day, a fairly strong low pressure system brought brief heavy rain to some areas in the Sierra Nevada, including at elevations below 6,000 feet and down into the foothills. About three quarters of an inch up to two inches of rain fell in these areas, including as far south as Tulare County. Around two to six inches of snow fell at reporting stations at elevations above 6,000 feet in the Sierra Nevada. Otherwise, a few hundredths to around four tenths of an inch of rain was reported, or in the San Joaquin Valley. Patchy dense fog once again developed in the San Joaquin Valley during the early morning hours of Christmas Day.

Weak ridging on the 26th that had brought patchy morning fog to parts of the San Joaquin Valley gave way to a series of mostly dry cold troughs through the end of the month. This brought gusty

mountain and desert winds and cold morning temperatures and frost to the area, including sub-freezing temperatures to many locations in the San Joaquin Valley on December 29th and the 30th. A few locations even reported lows in the upper 20s. The heat islands of the urban areas were slightly warmer and spared the freezing temps.

Table 1 – December 2018 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	51.1	3.2	0.62	-0.40
Fresno	50.0	3.5	0.56	-1.21
Hanford	48.6	4.1	0.42	-1.21
Madera	50.6	5.3	0.87	-0.83
Merced	47.7	3.1	1.51	-0.01

Temperature/Precipitation Rankings for December

Bakersfield – 16th warmest December on record (Tied with 2002, 1976, 1969, 1922, 1915); 68th wettest December on record (Tied with 1993).
Fresno –13th warmest December on record (Tied with 1939); 34th driest December on record (Tied with 1883).

Figure 1 – Departure from Average Temperature for December 2018

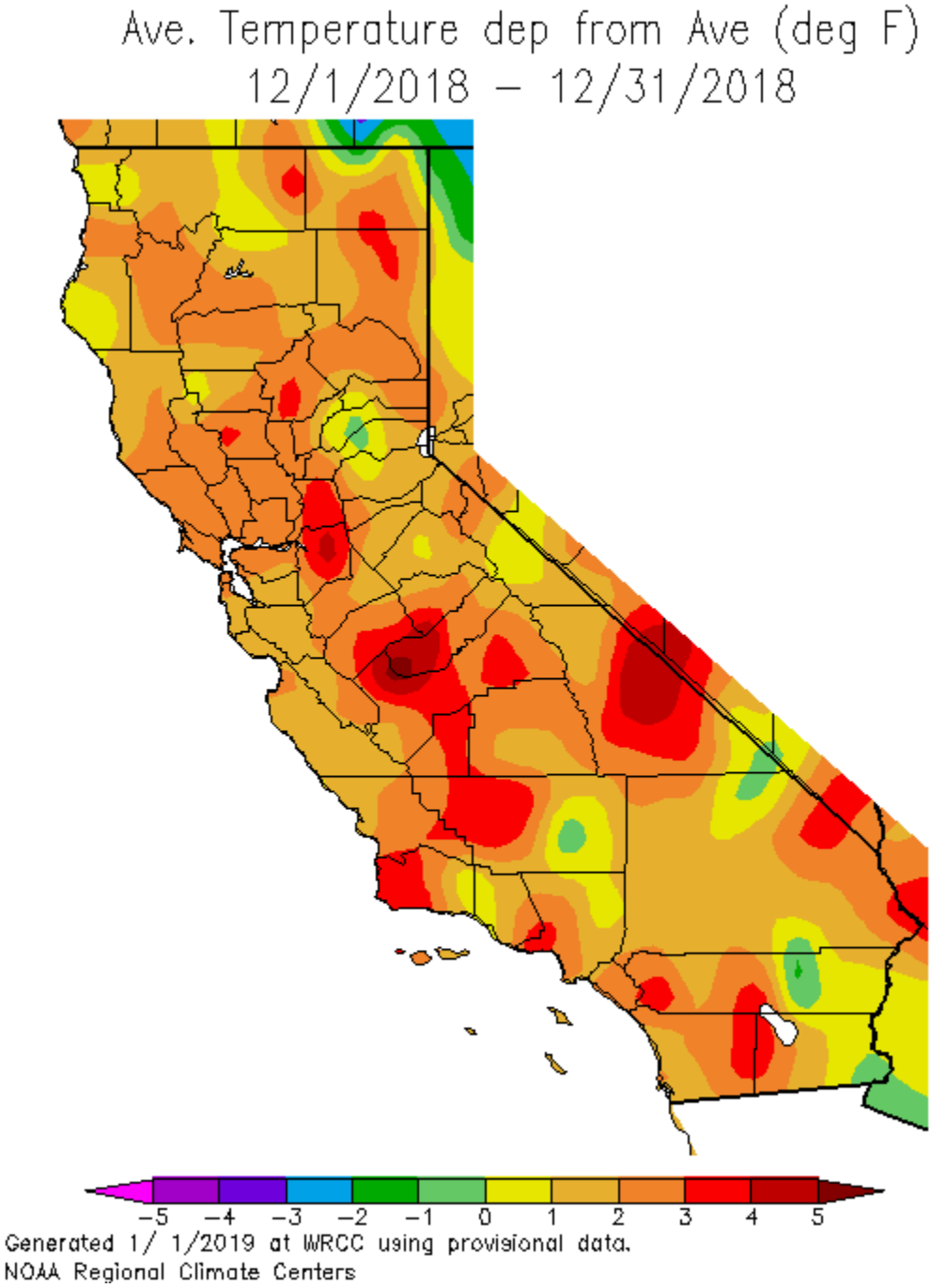
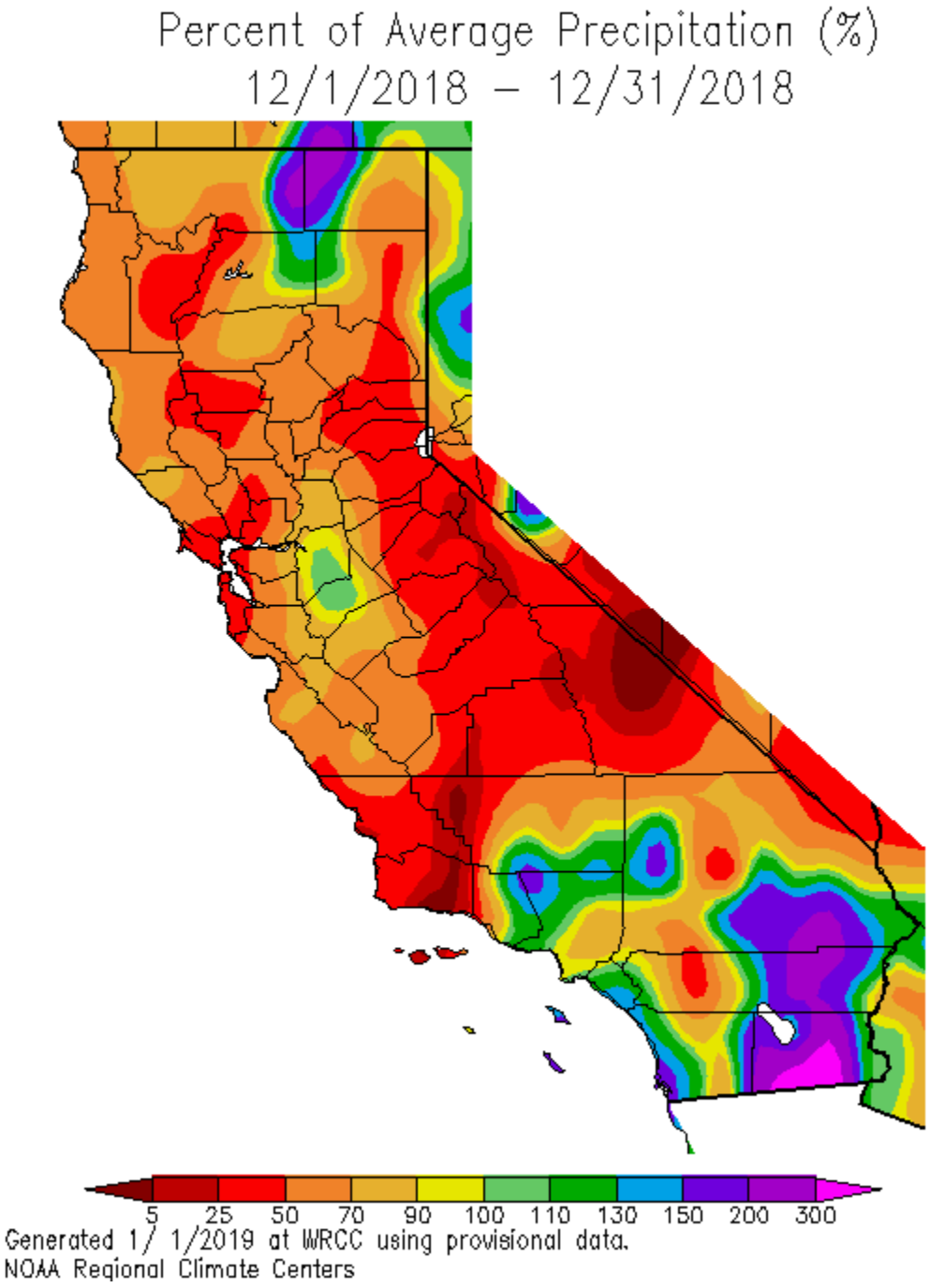


Figure 2 – Percent of Average Precipitation for December 2018



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