JULY 2018 WEATHER SUMMARY
FOR THE CENTRAL CALIFORNIA INTERIOR

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Seasonal temperatures, although slightly below average at times, prevailed for the first five days of the month along with dry weather. Mainly cumulus cloud buildups occurred during the afternoons and early evenings over the Sierra Nevada crest during this period. Low pressure brought noticeably cooler temperatures to the west side of the San Joaquin Valley on the 3rd and on Independence Day due to an influx of marine air.

Temperatures warmed back to a few degrees above average by the 6th and the next few days as high pressure built over the region. A very dry airmass brought single digit relative humidity during the afternoons of the 5th through the 7th to the Kern County mountains, including in Tehachapi and Frazier Park. Very hot temperatures prevailed in the Kern County desert where highs reached around 110 to 113 degrees during this period. On the 8th and 9th, the airmass remained about the same or slightly warmed in the Central Valley and most of Central California but slightly moderated over the desert areas in Kern County.

By the 10th, monsoonal moisture began impact the higher elevations of the Sierra Nevada; isolated thunderstorms developed during that afternoon. On the following two days, thunderstorm development began earlier in the day and well into the evening hours due to increasing moisture and tropical disturbances moving from the east. During the 11th, thunderstorms developed over the mountains by around Noon, including over Tulare and Kern Counties. Thunderstorms developed late that afternoon just to the east of Kern County in the western Mojave Desert but generally weakened by the time they reached eastern Kern County. As a result, outflow winds with gusts around 40 mph with some localized blowing dust moved into Ridgecrest and California City due to these collapsing thunderstorms. Rainfall over the mountain areas on the 11th, was mainly 0.10 to 0.30 inch due to the thunderstorms. On the 12th, as much as an inch of rain fell in the Sierra Nevada at the Bald Mountain ranger lookout station in Sequoia National Forest due to a strong thunderstorm. Otherwise, stations in the Sierra Nevada over mainly Fresno and Tulare Counties received around 0.10 to 0.50 inch of rain due to showers and thunderstorms. A few locations further north, or towards Yosemite, also received light rainfall. On the evening of the 12th, cloud cover from decaying thunderstorms moved westward into the San Joaquin Valley. A few locations on the east side of the Central Valley, such as Clovis, Visalia, and Porterville, received sprinkles or very light rain.

Thunderstorm activity decreased on the 13th through the 16th and remained over the highest elevations of the Sierra Nevada in Fresno and Tulare Counties as the flow aloft shifted towards the south and southwest. Temperatures remained warmer than average by a few degrees during each day, while highs continued to reached into the triple digits in much of the San Joaquin Valley during this period. A large fire broke out in very rough terrain with dead vegetation, including a large number of trees that did not survive the recent drought, in the Sierra Nevada foothills in Mariposa County near Yosemite on the afternoon of the 13th and grew quickly over the next several days.

On the 17th through the 24th, high pressure remained strong over the region. Hot temperatures continued throughout the region with afternoon and early evening thunderstorms mainly over the Sierra Nevada crest due to lingering mid-level subtropical moisture. Smoke from the Ferguson Fire mitigated some heating in the San Joaquin Valley at times, although the smoke was thick and close enough to Yosemite to force the park to close on the 24th. Very hot temperatures prevailed at times when the smoke remained over the Sierra Nevada and adjacent foothills. For example, daytime highs in the San Joaquin Valley exceeded 105 degrees on the 17th through the 20th, while highs reached above 110 degrees in the Kern County desert, and low temperatures remained mainly in the mid-70s to the lower 80s. Due to the very hot and dry conditions in the Sierra Nevada foothills, the Ferguson Fire continued rapid growth, or increased in size by at least a thousand acres each day from since the fire began until the 24th. In addition, showers and thunderstorms continued to develop in the higher elevations of the Sierra during this period and beyond, or until the 27th.

A very long stretch of 100-degree and warmer daily maximum temperatures prevailed in the San Joaquin Valley and much of the lower elevation areas in the region through the end of the month. The record for the most consecutive days of triple digit highs in Fresno (i.e., 21 days) was tied on the 26th. However, the record was broken on the following day, as the high temperature also reached above 100 degrees and for the next several days. At the last day of the month, Fresno reported 26 days in a row with highs at or above 100 degrees, and the record is expected to continue to lengthen into the month of August. Nonetheless, the average high temperature in Fresno during this period ranges from 97 to 99 degrees, so triple digit highs themselves are not at all unusual for this time of year. However, the length of the stretch of triple digit highs is unusual. As for Bakersfield, there were 21 days in a row with triple digit high temperatures (during the 11th-31st); this is the 9th longest stretch on record. Thunderstorm activity was temporarily absent during the 28th and 29th over the Sierra Nevada, but isolated thunderstorms returned during the 30th and 31st due to another episode of subtropical moisture that moved into the region from the Desert Southwest.

Smoke from wildfires throughout the state (including the aforementioned Ferguson Fire) plagued much of the region for the last half of the month. July 2018 was characterized with below

average to average precipitation, except well above average occurred in the higher elevations of the Sierra Nevada due to thunderstorm activity (Fig 1). In addition, most locations in the San Joaquin Valley and the adjacent Sierra Nevada foothills did not report measurable precipitation. The month was much warmer than average throughout the region (Fig 2). There Fresno reached its warmest July on record, while Bakersfield had its second warmest.

Table 1 – July 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	89.6	+5.7	0.00	-0.00*
Fresno	88.2	+5.2	0.00	-0.01
Hanford	85.2	+6.0	0.00	-0.02
Madera	82.9	+4.2	0.00	-0.02
Merced	82.1	+4.3	0.00	-0.01

*****Bakersfield average July precipitation is a trace.

Temperature/Precipitation Rankings for July

Bakersfield – 2nd warmest July on record with an average temperature of 89.6 degrees (5.8 degrees above average). Tied for driest July on record with no precipitation reported. (Usually no measurable rain falls in July here).

Fresno – Warmest July on record with an average temperature of 88.2 degrees (5.2 degrees above average). Tied for driest July on record with no precipitation reported. (Usually no measurable rain falls in July here).

Figure 1 – Departure from Average Temperature for July 2018

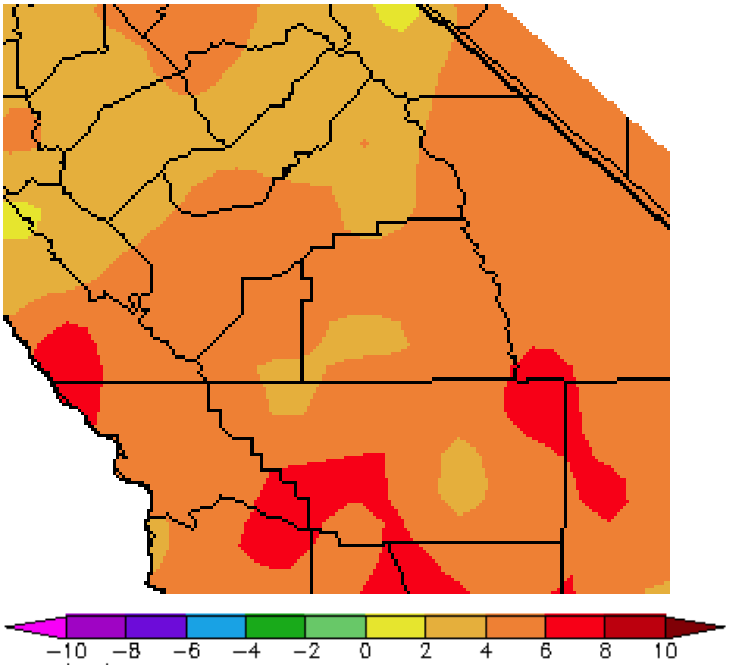
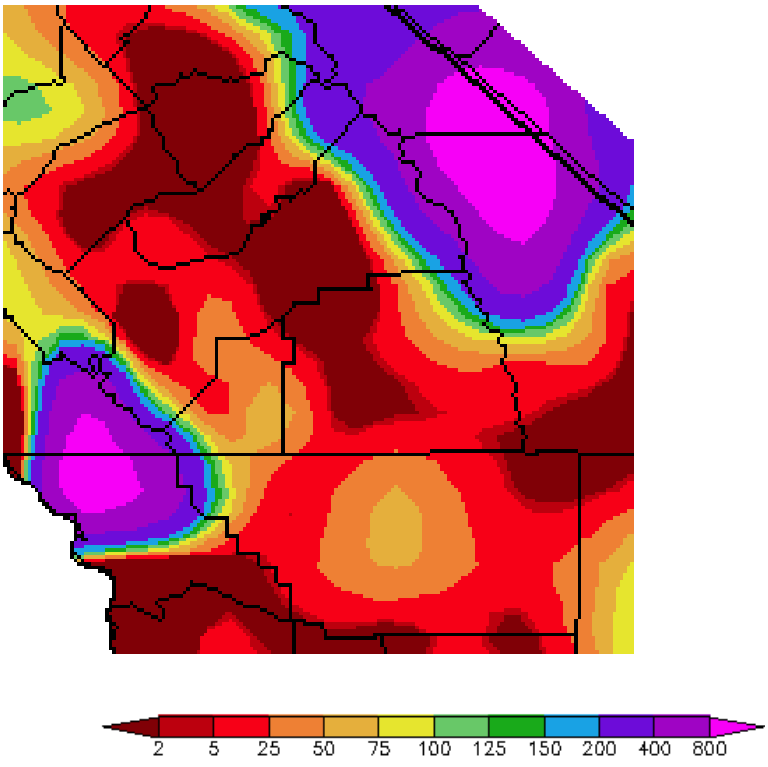


Figure 2 – Percent of Average Precipitation for July 2018



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