JULY 2019 WEATHER SUMMARY
FOR THE CENTRAL CALIFORNIA INTERIOR

By Brian Ochs, Climate Services Focal Point
Jim Andersen, Assistant Climate Services Focal Point
WFO San Joaquin Valley-Hanford

Slightly below average temperatures and dry conditions were the rule for the first four days of the month. Highs were mainly in the 90s in the warmest locations, such as the San Joaquin Valley and the Kern County desert areas, except China Lake reached just above 100 degrees during this period. Locally gusty winds developed through the passes and canyons in eastern Kern County, as well as along the west side of the San Joaquin Valley during the nights of the 2nd and 3rd. Gusts were just above 55 mph at the strongest locations in the Kern County mountains and desert (such as Mojave, Jawbone Canyon, and Indian Wells Canyon to the west of Ridgecrest), while gusts reached around 40 to 45 mph below the passes of the mountains along the west side of the Central Valley (such as Pacheco Pass along Highway 152 and Cottonwood Pass along Highway 41 in southwestern Kings County).

On the 5th and 6th, temperatures briefly reached a few degrees above average, and the warmest locations reached in the mid-90s to around 100 degrees. A dry southwest flow aloft continued over the region, so all storm activity remained well to the north of Central California.

The flow aloft turned more westerly, and daytime highs lowered back to the lower to mid 90s in the San Joaquin Valley during the 7th-11th. A low pressure system brought an intrusion of marine air into the Central Valley, especially on the 7th and 8th, or the coolest days of the period. Locally gusty winds also developed on the evening of the 7th; gusts reached around 35 to 40 mph at the passes along the west side of the San Joaquin Valley (such as near Pacheco Pass) and around 50 miles per hour in the Kern County mountain and desert areas (mainly near Mojave and Jawbone Canyon). Otherwise, temperatures warmed back to around seasonal averages in the region on the 9th-11th.

Another warming trend commenced on the 12th and continued until the 14th due to a ridge of high pressure. However, dry flow aloft continued, and no significant moisture was present. Thus, dry conditions persisted. The warmest temperatures of the month thus far occurred, as highs reached around 105 degrees in the warmest spots, especially on the 14th.

During the following week, the high pressure ridge weakened enough so that temperatures fell by a few degrees. Daytime highs rose to the upper 90s to near 100 degrees from the 15th through the 21st. Very little moisture influenced the weather during this period, except for a few mid and high level clouds at times.

On the 22nd, high pressure rebuilt over the region. While high temperatures reached at least a few degrees above average, a significant increase in moisture arrived from the southeast. Low temperatures also warmed considerably due to the additional moisture and increased mid and high level clouds. Moisture was sufficient for afternoon instability, and a few showers and thunderstorms developed during the afternoon and evening over the Sierra Nevada. More moisture arrived by the following morning, and additional coverage of showers and isolated thunderstorms resulted in much of Kern County, including at Bakersfield Meadows Field Airport, where a trace of rain was reported. Additional showers and thunderstorms developed over the Sierra Nevada on the afternoon of the 23rd; however, generally light rain was reported (less than 0.20 inch). On the afternoon of the 24th, storm development occurred fairly early, or by around 1-2 PM. Locally heavy rain fell in the higher elevations of the Sierra Nevada, mainly in Tulare and Fresno Counties. As much as 0.70 inch of rain fell at Wishon Dam that afternoon, and a few other Sierra Nevada locations received around 0.50 inch during the afternoon of the 24th. On the 25th, a similar weather pattern occurred, and another 0.25 to 0.50 inch of rain fell in the Sierra Nevada. At times, there were residual clouds and light showers in the San Joaquin Valley during the late nights and mornings that produced trace to around 0.10 inch amounts, although a few locations elsewhere, including in the Kern County desert and mountain regions, as well as the Sierra Nevada foothills. This pattern continued until the 26th, as additional afternoon and evening showers and thunderstorms developed over the mountains.

On the 26th, storm coverage over the Sierra Nevada was limited and occurred mainly until the early afternoon hours. There were even a few showers or sprinkles that remained in the southern San Joaquin Valley, lower Sierra Nevada foothills, and the Kern County desert regions. However, little or no rainfall was reported that day. A dry flow with a slightly westerly component began to develop over the region that day so that significant moisture moved towards the lee side of the Sierra. However, the high pressure ridge remained strong, and above average temperatures prevailed until the 29th. The warmest day of the month was on the 28th, as temperatures rose to over 10 degrees above average.

The last two days of the month were generally dry with seasonal temperatures, as the ridge of high pressure weakened and shifted back towards the east and allowed a southwesterly flow aloft to return to the region.

Overall, temperatures ranged from as much as a couple of degrees below average to a couple of degrees above average (Fig 1). Below average precipitation accumulated this month (Fig 2); however, most of Central California, besides the Sierra Nevada, typically receives little or no precipitation during July.

Table 1 – July 2019 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	85.1	+1.3	Trace	0.00
Fresno	84.2	+1.2	Trace	-0.01
Hanford	81.6	+2.4	0.00	-0.02
Madera	79.0	+0.3	0.00	-0.02
Merced	78.7	+0.9	0.00	-0.01

Table 2 – Seasonal Precipitation for ASOS locations (ending on July 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	6.50	+2.11	Trace	0.00	7.80	+1.45
Fresno	9.52	+1.67	Trace	-0.01	11.85	+0.53
Hanford	7.63	+0.85	0.00	-0.02	9.50	-0.41
Madera	8.43	+0.41	0.00	-0.02	11.42	-0.33
Merced	9.40	+0.71	0.00	-0.01	13.27	+1.07

Table 3 – Warmest High Temperatures and Coolest Low Temperatures of the Month for ASOS locations				
Location	**High**	**Date(s)**	**Low**	**Date(s)**
Bakersfield	110	28th	64	9th
Fresno	107	28th	61	9th
Hanford	106	26th & 28th	57	2nd, 8th & 9th
Madera	105	28th	54	9th
Merced	105	28th	55	4th & 9th

Temperature/Precipitation Rankings for July 2019

Bakersfield – 39th warmest July on record; tied for second lowest precipitation (with multiple Julys) on record.
Fresno – 22nd warmest July on record; tied for second lowest precipitation (with multiple Julys) on record.

Daily Records Set in July 2019

Bakersfield

23rd - Record high daily precipitation of a trace tied for the date in 2007.

25th - Record high daily precipitation of a trace set for the date; old record was 0.00 inches.

Fresno

26th – Record high minimum temperature of 80 degrees tied for the date in 1931; record high daily precipitation of a trace tied for the date in 1964.

Number of Days with Highs at or Above 100 Degrees in Bakersfield and Fresno

Bakersfield

July – 12 days (average 13 days)
May through July - 20 days (average 20 days)

Fresno

July – 15 days (average 14 days)
May through July - 22 days (average 21 days)

Fig 1 – Departure from Average Temperature for July 2019

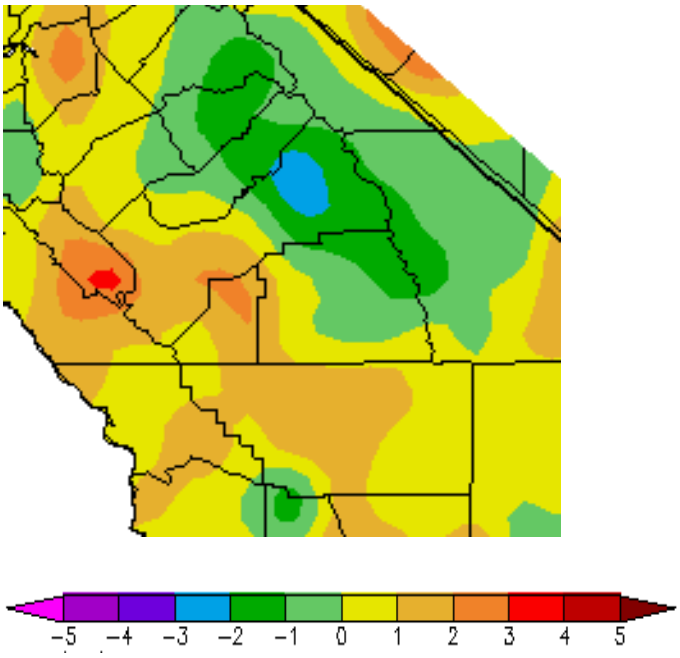
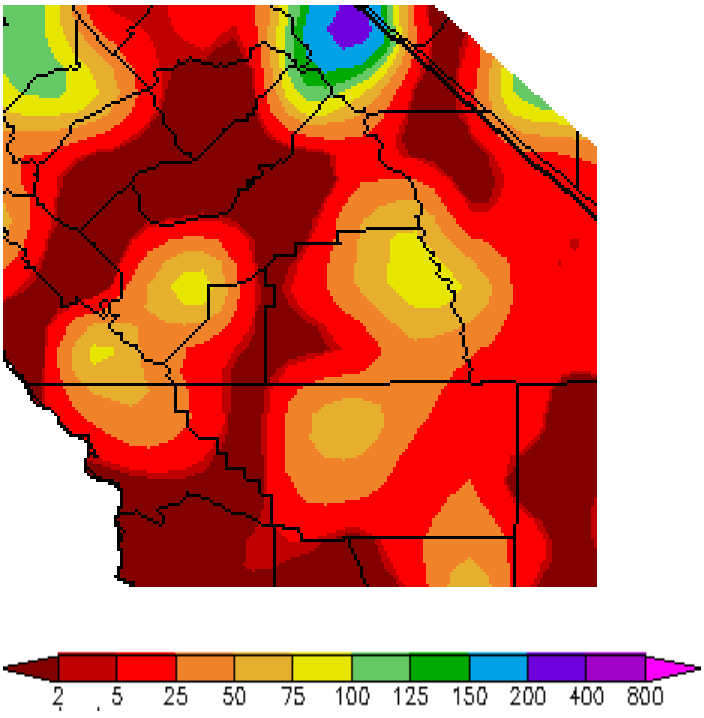


Fig 2 – Percent of Average Precipitation for July 2019



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