JULY 2020 WEATHER SUMMARY
FOR THE CENTRAL CALIFORNIA INTERIOR

By Brian Ochs, Climate Services Focal Point
Colin McKellar, Assistant Climate Services Focal Point
WFO San Joaquin Valley-Hanford

Dry weather and mainly clear skies with near to slightly below average temperatures prevailed for the first three days this month. Gusty winds developed in the West Side Hills on the 1st through the 3rd during each evening; gusts reached around 40 miles per hour at Pacheco Pass as onshore flow allowed the coastal marine layer to deepen and eventually flow into the San Joaquin Valley. Highs in the San Joaquin Valley were in the low to mid-90s during this period.

High pressure moved westward from the Desert Southwest on the 4th, so high temperatures rose to slightly above average. However, high temperatures in much of the San Joaquin Valley barely remained under 100 degrees on that day and even through the next couple of days (except for a high of 100 degrees at Fresno on the 5th). Meanwhile, a dry southwest flow aloft allowed for mainly clear skies to continue.

Temperatures lowered to a few degrees below average on the 6th and 7th due to an upper-level trough that passed over mainly Northern California. Gusty winds developed along the west side of the San Joaquin Valley on the 6th and the previous evening; gusts reached around 40 miles per hour at Pacheco Pass as marine air flowed over the pass into the San Joaquin Valley. This marine air was enough to lower temperatures by several degrees on the 6th with cooler overnight lows. Highs in the lower to mid-90s prevailed in much of the Central Valley on the 6th, and highs warmed slightly each day for the next few days as high pressure gradually began to move westward from the Desert Southwest.

On the 9th, highs returned to the triple digits in parts of the Central Valley. The warming trend continued until the 12th. Highs were around 7 to 10 degrees above average on both the 11th and 12th; much of the San Joaquin Valley reached 105 degrees and above. Very hot temperatures occurred in the Kern County desert, as highs reached over 110 degrees on the 11th through the 13th, including as high as 114 degrees at China Lake NAF on the 12th. However, starting on the 13th, temperatures were afterward on a downward trend once again as an upper-level trough passed to the north of the region with a weak upper low that set up along the California coast. However, temperatures had not begun to lower noticeably in some areas, such as the Kern County desert, until after the 13th. Gusty winds developed by the evening at the passes along the west side of the San Joaquin Valley.

On the 14th and 15th, temperatures were around seasonal averages due to ocean-cooled air that flowed into the San Joaquin Valley. Highs dropped below 100 degrees in much of this region during this time, with highs in the mid to upper 90's on both days. Due to the weak upper-level low that moved to just off the coast of Southern California, instability was sufficient for afternoon and evening thunderstorm development over the Sierra Nevada crest, mainly in Fresno County and northward.

Seasonably warm temperatures returned to the region on the 16th through the 19th as high pressure nudged westward from the Desert Southwest. Triple digit high temperatures once again occurred in the San Joaquin Valley during this period. Thunderstorm development over the Sierra Nevada crest was confined to areas around Yosemite and northward on the 16th through the 19th.

On the 20th, temperatures lowered slightly in the San Joaquin Valley, with highs in the mid to upper 90s but little or no change elsewhere. Thunderstorms became more widespread in the higher elevations of the Sierra Nevada, including from Yosemite to Tulare County. Gusty winds developed through the mountain passes leading into the Kern County desert areas on the afternoon of the 20th into the early morning hours of the 21st; the strongest gusts reported were around 45 mph. Below average temperatures continued in portions of the San Joaquin Valley on the 21st, as daytime highs reached into the lower to mid-90s.

Temperatures briefly warmed on the 22nd but were still slightly below average. Another push of marine air allowed temperatures to once again lower to several degrees below average in the Central Valley on the evening of the 22nd and into the 23rd. Gusts on the evening of the 22nd reached around 35 miles per hour at the passes that lead into the western San Joaquin Valley that day.

High pressure returned to Central California on the 24th through the 27th, and temperatures gradually warmed back up by a few degrees. By the 26th, daytime highs reached a few degrees above average. Atmospheric instability was sufficient along the Sierra Nevada crest to produce afternoon and early evening showers and thunderstorms. Storms occurred daily in the higher elevations of the Sierra Nevada, mainly from Yosemite to Kings Canyon National Parks, although the activity was confined to Yosemite and northward at times, especially during the latter days of this period. Little rainfall was measured with these storms, as significant moisture was lacking.

By the 28th, there was no longer a daily threat of thunderstorms in the higher elevations of the Sierra Nevada, as dry southwest flow aloft set up over the region. This pattern continued until the end of the month. In addition, very warm temperatures remained, and daytime highs were at least a few degrees above average for this period. The warmest highs occurred on the 31st in the Kern

County desert, as highs once again reached 110 degrees and slightly above at China Lake NWTC, Ridgecrest and Inyokern. Otherwise, triple digit heat occurred throughout this period in the San Joaquin Valley, with highs around 100 to 104 degrees.

Overall, the month was near average to warmer than average (Fig 1). Below average precipitation accumulated this month (Fig 2), although thunderstorms were fairly frequent along the Sierra Nevada at times throughout the month.

Table 1 – July 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	85.5	+1.7	0.00	0.00
Fresno	84.6	+1.6	0.00	-0.01
Hanford	81.4	+2.2	0.00	-0.02
Madera	78.9	+0.2	0.00	-0.02
Merced	79.6	+1.8	0.00	0.00

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 Average (inches)
Bakersfield	4.61	+0.22	0.00	0.00	4.61	+0.22
Fresno	4.75	-3.10	0.00	-0.01	7.63	-3.69
Hanford	4.31	-2.47	0.00	-0.02	6.62	-3.29
Madera	3.76	-4.26	0.00	-0.02	6.02	-5.73
Merced	4.58	-4.11	0.00	0.00	9.54	-2.65

* Rain Year 2020-2021: July 1st, 2020 thru Jun 30th, 2021
*Water Year 2019-2020: Oct 1st, 2019 thru Sep 30th, 2020

Table 3 – Warmest High Temperatures and Coolest Low Temperatures of the Month for ASOS locations				
Location	**High**	**Date(s)**	**Low**	**Date(s)**
Bakersfield	108	12th	64	3rd
Fresno	108	12th	61	7th
Hanford	106	12th	56	2nd
Madera	105	11th & 12th	53	7th
Merced	106	11th	56	7th

Temperature/Precipitation Rankings for July 2020

Bakersfield – 34th warmest July on record; tied for lowest precipitation in July on record.
Fresno – 21st warmest July on record; tied for lowest precipitation in July on record.
Hanford – 36th warmest July on record; tied for lowest precipitation in July on record.
Madera – 60th warmest July on record; tied for lowest precipitation in July on record.
Merced - 37th warmest July on record; tied for lowest precipitation in July on record.

Note: No precipitation is often reported in July throughout the San Joaquin Valley.

Daily Records Set During July 2020

Bakersfield – No daily records set or tied.
Fresno – No daily records set or tied.
Hanford – No daily records set or tied.
Madera – No daily records set or tied.
Merced – No daily records set or tied.

Number of Days with Maximum Temperature of 100 Degrees or Above for July 2020 and Total for 2020 (May-July)

Bakersfield – July total: 15 (average 13); 2020 total so far: 27 (average 19)
Fresno – July total: 17 (average 14); 2020 total so far: 31 (average 21)
Hanford – July total: 14 (average 9); 2020 total so far: 26 (average 14)
Madera – July total: 11 (average 10); 2020 total so far: 23 (average 15)
Merced – July total: 7 (average 9); 2020 total so far: 18 (average 14)

Fig 1 – Departure from Average Temperature for July 2020

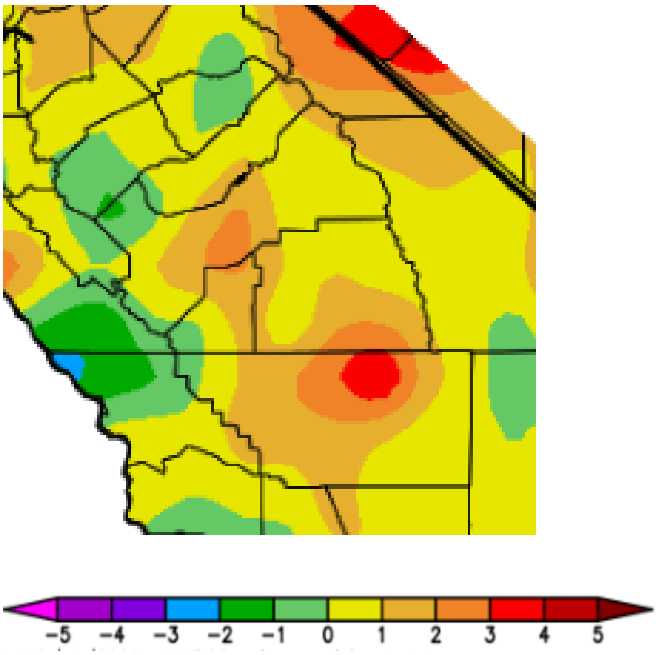
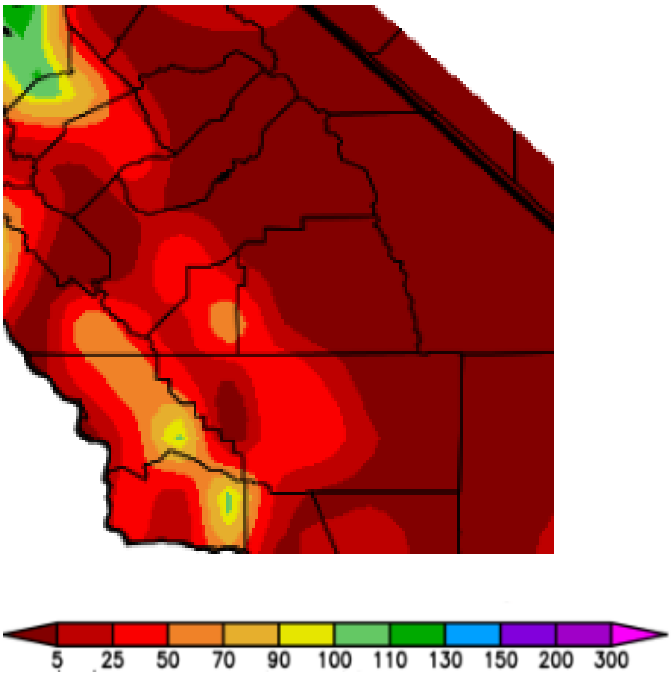


Fig 2 – Percent of Average Precipitation for July 2020



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