**JUNE 2016 WEATHER SUMMARY**
**FOR THE CENTRAL CALIFORNIA INTERIOR**

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Much warmer than average temperatures prevailed during the first several days of this month due to a strong ridge of high pressure. On the 1st, Fresno reached record high temperatures, including both record high minimum and maximum temperatures (the high was 105 degrees with a low of 71). In addition, record high maximum temperatures were set at both Bakersfield and Fresno on the 4th. Otherwise, minor temperature fluctuations with dry conditions occurred for the first seven days of the month. Daily low temperatures were generally slightly above average, including the mid-60s to lower 70s in the San Joaquin Valley and Kern County desert areas.

The high pressure ridge began to weaken by the 8th, and high temperatures finally dropped below 100 degrees in most locations in the San Joaquin Valley. In Merced high temperatures reached the lower 90s, as marine air had already begun to flow into the northern parts of the San Joaquin Valley. However, locations further south, such as the Kern County desert areas, remained above 100 degrees; in the northeastern part of the county (such as Ridgecrest and much of the Indian Wells Valley), the high temperatures reached 105 degrees and above. On the night of the 8th, cooler marine air began to flow further south into the San Joaquin Valley through the passes along the west side with locally breezy conditions, so that temperatures fell even more by the night of the 8th. During that night, winds gusted around 40 mph near the passes and canyons in eastern Kern County and around 30 mph along the west side of the San Joaquin Valley. Low temperatures returned back to around seasonal averages (upper 50s to lower 60s) in much of the San Joaquin Valley on the morning of the 9th; however, temperature recovery remained poor in the Kern County desert, as low temperatures only remained in the lower to mid-70s.

On the 10th, showers and thunderstorms returned to the mountain areas, mainly along the Sierra Nevada crest, as a low pressure system approached the coast of southern California. Shower activity increased in area and intensity during the next couple of days; the bulk of the activity occurred during the overnight hours of the 11th and into the morning of the 12th, as the low moved inland over Los Angeles. Scattered showers and thunderstorms developed mainly along the Sierra Nevada crest during the evening of the 11th. Late that night, another complex of storms developed over the Sierra Nevada and also formed over the adjacent foothills and much of the San Joaquin Valley mainly from northern Kern County and northward. Thunderstorms rumbled over the San Joaquin Valley by around 12:30 AM and progressed northward for the next several hours. Rainfall amounts were generally around one to two tenths of an inch, as the storms tended to move quickly. However, a few storm cells produced rainfall amounts at around a half inch in

the Sierra Nevada and adjacent foothills, including near Oakhurst and at Wishon Dam in Fresno County. As for the higher elevations, or at and above 10,500 feet, around two to three inches of snow fell during the overnight hours. As for elevations just below, there was a dusting of snow, such as at Tioga Pass (elevation around 9,900 feet). An additional two inches also fell later during the afternoon and early evening of the 12th at the summit of Mt. Whitney (elevation 14,505 feet), as shower and thunderstorm activity redeveloped due to the proximity of the low pressure system and associated trough. For this particular round, most of the activity was confined to mainly the higher elevations of the Sierra Nevada. A dusting of snow was as low as 8,500 feet near Mineral King in Sequoia National Park, where dime-sized diameter (half inch) hail fell. Again, rainfall amounts were generally light, or around one tenth to a quarter of an inch, except some locales received around a half to three quarters of an inch (such as Tuolumne Meadows, Crane Flat, and White Wolf in Yosemite National Park). Afterward, a transition to an onshore, or cooler and drier, flow regime ensued on the 13th and 14th. Well below average temperatures occurred until the 16th, before warming back to around average on the 17th and through the 19th. Strong high pressure moved into Central California by the 20th, and many locations went from 10 degrees below normal back on the 16th to 10-15 degrees above normal by the 20th as Central California experienced a multiday warmup with strengthening high pressure. The hottest temperatures of the year so far were observed during a bout of excessive heat in the Kern County Desert on the 20th and 21st when Ridgecrest, China Lake, and Edwards Air Force Base each recorded temperatures above 110 degrees.

Temperatures began to slowly cool after the 21st as high pressure began to weaken and shift east. The near normal temperatures were short-lived as high pressure began to rebuild across the Western United States from the 23rd through 25th, and would hold a firm grip over the region through the end of the month. Some locations in the Kern County Mountains and Desert experienced smoke and haze as a result of the Erskine Fire that began on the evening of the 23rd. Satellite imagery confirmed the plume of smoke in the Kern County Desert on the 24th, and in the extreme southern portion of the San Joaquin Valley and Kern County Mountains on the morning of the 25th.

During the 26th and 27th, temperatures warmed a few degrees each day as high pressure continued to build over the area. Also on these two days, there were thunderstorms that developed in the Sierra Nevada, including as far south as the Piute Mountains in Kern County. The main threat was locally heavy rain, although a strong thunderstorm moved near Lake Isabella over an active wildfire (Erskine) and prompted issuance of a Severe Thunderstorm Warning due to gusty winds on the evening of the 27th. By the 28th, temperatures reached around 10-15 degrees above average as the warming trend and building of the high continued. Thunderstorms continued to develop during the afternoons and evenings from the 28th through the 30th, although the coverage decreased each day and shifted to mainly east of the Sierra Nevada crest. Temperatures remained above average for the remainder of the month, though the

last day was slightly cooler in some locations, as a weak onshore flow brought shallow marine air into the San Joaquin Valley.

The month was overall drier than average in Central California, though typical for June. The exceptions were above average precipitation due to showers and thunderstorms along the Sierra Nevada crest and Piute Mountains in Kern County (Fig 1). Much warmer than average temperatures prevailed throughout Central California (Fig 2), as there were prolonged periods of strong high pressure, in both the beginning and end of the month. Fresno had the 5th warmest record for the month of June, while Bakersfield was 6th warmest (see Table 1 below for monthly average temperatures and departures).

Last, but certainly not least, the July 2015-June 2016 rain year ended with below average precipitation for most locations south of Fresno; in contrast, precipitation was above average in Fresno and in locations to the north (Table 2).

**Table 1 –** Summary Statistics for ASOS Locations

**Table 1 - June 2016 Summary Statistics for ASOS locations**

| Location | Monthly Avg Temp | Departure From Normal | Total Monthly Precipitation | Departure From Normal |
|---|---|---|---|---|
| Bakersfield | 82.6 | 5.1 | 0.00 | -0.08 |
| Fresno | 80.9 | 3.7 | 0.06 | -0.21 |
| Hanford | 79.1 | 4.5 | 0.04 | -0.11 |
| Madera | 77.6 | 3.4 | T | -0.19 |
| Merced | 77.1 | 3.4 | 0.00 | -0.13 |

**Table 2** – July 2015- June 2016 (Rain Year) Precipitation

**Table 2 – July 2015 through June 2016 Precipitation**

| Location | Total Precipitation | Departure From Normal |
|---|---|---|
| Bakersfield | 5.47 | -1.00 |
| Fresno | 14.84 | 3.34 |
| Hanford | 8.63 | -1.47 |
| Madera | 13.25 | 1.23 |
| Merced | 14.70 | 2.20 |

**Fig 1 -** Percent of normal precipitation for June 2016:

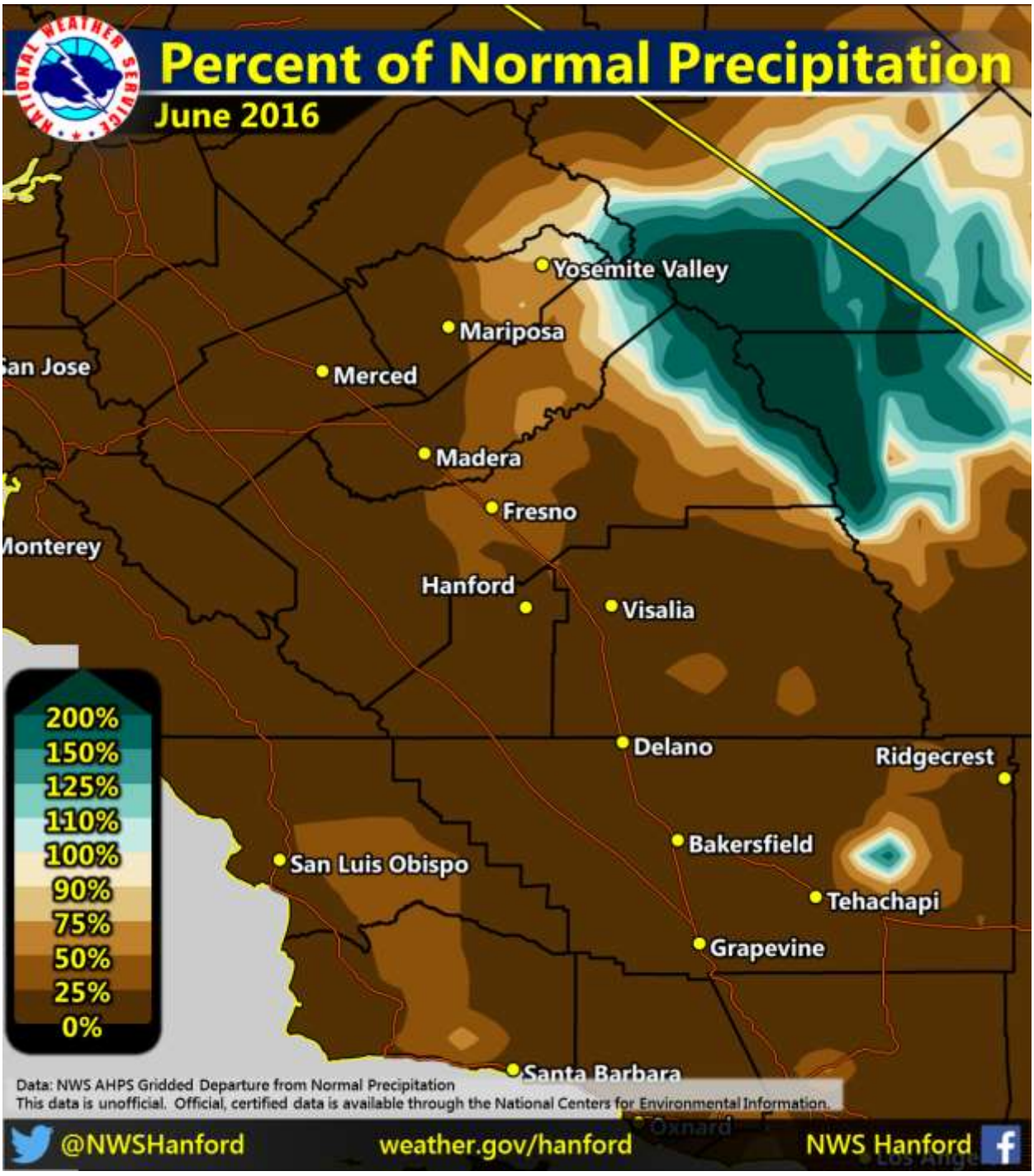

**Fig 2 -** Departure from average temperature for June 2016: