JANUARY 2023 WEATHER SUMMARY
FOR THE CENTRAL CALIFORNIA INTERIOR

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The month ended up with much above average precipitation for much of the forecast area, as the first half of the month was very active with several episodes of precipitation associated with atmospheric rivers. The weather became quiet afterward; however, there were some episodes with gusty winds and freezing overnight low temperatures in the Central Valley. In addition, dense fog development was frequent between precipitation events in the San Joaquin Valley, as is typical during January. Despite the anomalously high precipitation, the month was still significantly warmer than average in most locations.

Table 1 – January 2023 Summary Statistics– NWS Hanford, CA ASOS Sites

Location	Monthly Average Temp (deg F)	Departure from Average (deg F)	Temperature Rank	Total Monthly Precipi-tation (inches)	Departure from Normal (inches)	Precipitation Rank
Bakersfield	50.4	+0.9	26th warmest	1.97	+0.78	16th highest
Fresno	49.6	+1.6	20th warmest	3.95	+1.79	13th highest
Hanford	49.2	+2.4	12th warmest	3.16	+1.60	11th highest
Madera	48.8	+1.0	18th warmest	1.97	-0.11	40th highest
Merced	48.5	+2.2	18th warmest	6.70	+4.33	5th highest

Number of Days with Minimum Temperatures at or below 32 degrees Fahrenheit

Bakersfield: 0 days (average of 4 for January); 3 days since November 1st (average 10 days)
Fresno: 1 day (average of 4 for January); 1 day since November 1st (average 10 days)
Hanford: 4 days (average of 8 for January); 26 days since November 1st (average 22 days)
Madera: 4 days (average of 7 for January); 16 days since November 1st (average 19 days)
Merced: 5 days (average of 8 for January); 14 days since November 1st (average 21 days)

January 1st through 5th was a wet but warm start to 2023 for the San Joaquin Valley. The 2nd was the coldest day of the week with overnight lows in the low 40s and upper 30s and highs were in the upper 40s to low 50s. About one quarter of an inch to just over two inches of rain was recorded in most Valley locations during the time with a north to south gradient. The 4th was the warmest with Bakersfield breaking its daily record high temperature at 70 degrees while most of

the Valley was in the 60s. The 6th was a mainly dry day for most of the Valley with temperatures in the upper 50s to low 60s but clouds were increasing through the day. The 7th was a few degrees warmer due to the cloud coverage which was increasing through the day as another storm was moving in. The rain on the 7th started in the late evening and continued until the 8th with this system. Another stronger system with an atmospheric river that moved directly over our forecast area arrived by the morning of the 9th and produced widespread heavy rain throughout the Central Valley, west side mountains, and the Sierra Nevada at elevations up to around 9,000 feet. This also caused widespread nuisance flooding that prompted numerous flood advisories. The strongest storms produced flash flooding and aerial flooding near rivers and waterways. Several flood warnings were issued as a result of this heavy rain, and the cities of Merced and Planada endured flood waters for several days later. Many areas in the Sierra Nevada and towards the west side mountains near Coalinga experienced increased flows in creeks, rivers, and streams. There were also quite a few reports of debris flows, including mudslides and rockslides that occurred along Highway 198 and Interstate 5 near Coalinga, Highway 168 near Shaver Lake, and Highway 140 near Mariposa and El Portal, just inside Yosemite National Park.

On the 10th, additional showers and isolated thunderstorms developed with the arrival of colder, unstable air. Some stronger storm cells produced small hail and funnel clouds, including one near Merced and another one in Woodlake, or about 12 miles northeast of Visalia. No tornado touchdowns had occurred, per reports received, as well as storm surveys conducted by NWS employees.

Some light to moderate showers continued at times on the 11th, and there was a brief break from this activity on the 12th. However, more showers returned on the 13th into the 14th throughout the region due to another low pressure system, with some brief moderate to heavy rain at times. There was a bit of a break from the rain on the 15th but some showers remained in the area. Rain resumed on the 16th with some showers. The showers tapered off on the 17th, and fog took its place that night. The 17th was also very cool as most locations had high temperatures in the low 50s. The 18th started with fog which burned off before temperatures barely climbed into the low 50s.

The 19th was the last day of rain for quite some time in most of the Central Valley before skies cleared and led to temperatures at or near freezing in the rural areas for several days starting on the 20th. During this period of near freezing temperatures, fog returned for the 20th through the 22nd. However, it did not develop on the morning of the 23rd due to a Mono Wind event (that typically produce strong winds from the northeast) in the higher elevations of the Sierra Nevada that spilled into the Kern County desert and portions of the coastal ranges adjacent to the west side of the San Joaquin Valley. Gusts of 55 to 70 mph were reported in the Sierra Nevada and the Kern County desert, while gusts of 45 to 50 mph were recorded in the mountains along the west side of the San Joaquin Valley.

An upper-level ridge of high pressure prevailed from the 24th until the 28th, along with dry weather. This feature allowed the return of dense fog in the San Joaquin Valley, although it was mainly localized. Otherwise, freezing overnight lows continued in the Central Valley until at least the 25th. A warming trend continued until the 28th that allowed overnight lows to reach just above freezing, while near to slightly above average daytime temperatures prevailed. Afternoon highs on the 26th through the 28th reached as warm as the lower to mid-60's at the warmest locations in the Central Valley and desert areas of Kern County.

On the 29th, a cooling trend began as a low pressure system approached the region. Rain and low elevation snow occurred from the afternoon of the 29th until the morning of the 30th. Snow levels were as low as 2,500 feet, and nearly one inch of snow accumulated on the Grapevine at around 4,000 feet that caused pacing of traffic during the early morning hours. In Tehachapi about one to two inches of snow accumulated that morning and also caused some travel delays along Highway 58. On the following afternoon into the evening, the Tehachapi Mountains and Grapevine in Kern County experienced dense fog, which also slowed down traffic.

For night of the 30th into the morning of the 31st, below average temperatures continued with freezing overnight lows in the San Joaquin Valley. However, temperatures were moderated in some areas, such as Hanford and Visalia, where dense fog developed. The fog and stratus cleared by the early afternoon hours of the 31st, while below average daytime temperatures prevailed.

Overall, the month was warmer than average, except for some mountain areas that ended up cooler than average (Fig 1), while much above average precipitation occurred in much of our portion of Central California (Fig 2).

Table 2 – Seasonal Precipitation for ASOS locations (ending on January 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	1.97	+0.78	4.32	+1.19	4.32	+1.24
Fresno	3.95	+1.79	9.31	+4.85	9.20	+3.82
Hanford	3.16	+1.60	6.85	+2.79	6.81	+2.81
Madera	1.97	-0.11	5.40	+0.10	4.86	-0.40
Merced	6.70	+4.33	13.11	+7.12	12.91	+6.97

Table 3 – Warmest High Temperatures and Coolest Low Temperatures of the Month for ASOS locations				
Location	**High**	**Date(s)**	**Low**	**Date(s)**
Bakersfield	70	4th & 12th	34	24th
Fresno	64	4th, 7th, 12th & 26th	32	31st
Hanford	69	4th	32	21st, 23rd, 24th & 25th
Madera	66	4th	30	23rd
Merced	65	12th	28	31st

Daily Records Set During January 2023

Bakersfield –
4th: Tied record high maximum temperature of 70 set in 2012.

9th: 0.80 inch of rain was recorded, which broke the previous record high daily precipitation of 0.75 inch set on this date in 2018.

Fresno –
9th: 1.53 inches of rain was recorded, which broke the previous record high daily precipitation of 0.57 inch set on this date in 1930.

Hanford –
9th: 1.30 inches of rain was recorded, which broke the previous record high daily precipitation of 0.82 inch set on this date in 1979.

Madera –
No daily records reached.

Merced –
9th: 1.80 inches of rain was recorded, which broke the previous record high daily precipitation of 0.80 inch set on this date in 1907.

Fig 1 – Departure from Average Temperature for January 2023

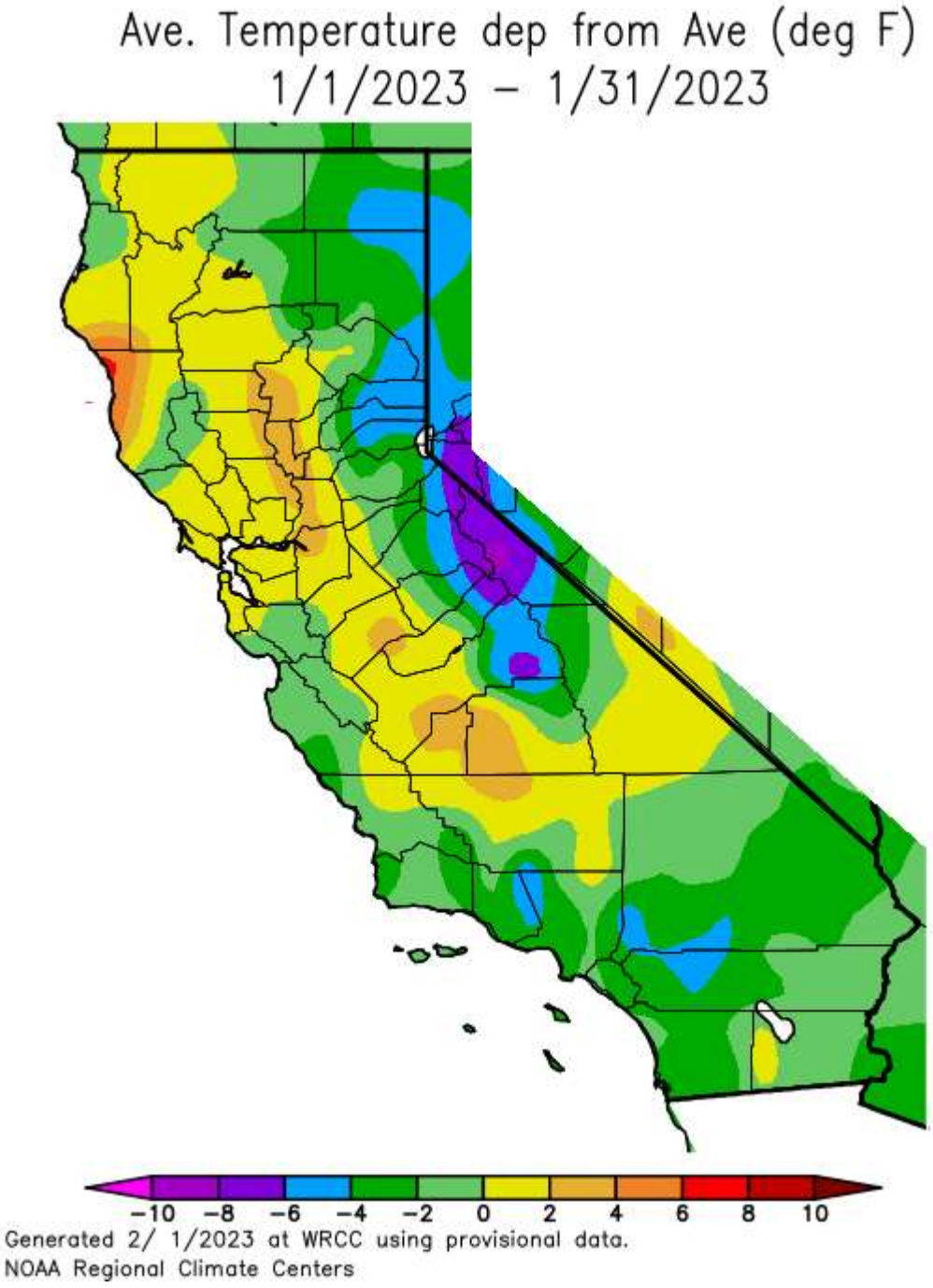

Fig 2 – Percent of Average Precipitation for January 2023