



National Weather Service

Storm Data and Unusual Weather Phenomena



December 1998

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CALIFORNIA, South Central

CAZ020

10	0600PST 1000PST				0	4	50K		Fog
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Dense fog with visibilities of only 100 feet contributed to a six-vehicle pileup in Madera County. The accident was at 0640 PST east of Madera in rural Madera County. Other areas of concern were black ice formation in Merced, Mariposa, Madera, and Fresno Counties due to temperatures below the freezing mark and the moisture within the fog.

CAZ020>021

20 27	0030PST 0800PST				0	0	596M		Extreme Cold
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On December 19th an arctic airmass began moving over Central California. The resulting cold air pool from advection and radiational cooling in the lowest levels of the atmosphere led to a devastating freeze to crops, especially citrus, in the Central and Southern San Joaquin Valley from December 20th through 27th. Estimates of direct crop loss reached \$596M for the Central and Southern San Joaquin Valley with an indirect economic loss estimated at \$2.7B to local area economies. The largest percentage of area crop losses were to lemons and oranges but several other unharvested fruit and vegetable crops, including avocados and broccoli, also suffered widespread damage. Mornings of freezing temperatures lasted from the 20th through the 30th but the coldest mornings of concern to agriculture generally ended on the 27th. On the morning of the 23rd, for example, minimum temperatures dropped to the 16-24 deg F. range with time durations less than 28 deg F. in excess of 16 hours in many locations. Fresno had a record low maximum temperature of only 34 deg F. on the 21st eclipsing the old record of 35 deg F. set in 1908. A record low maximum temperature was seen in Bakersfield on the 22nd with the mercury only reaching 34 deg F. and only 35 deg F. for Fresno. Subsequently a record low temperature was tied in Bakersfield on the morning of the 23rd with a 19 deg F. reading. This freeze was eerily reminiscent of a similar event during the same time period in December of 1990.

CAZ022

20	1300PST 1730PST				0	0	10K		Heavy Snow
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CAZ020

20 21	2000PST 0900PST				2	0	1M		Ice Storm
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M18VE, F60VE

In conjunction with the freeze event affecting area agriculture, the combination of moisture and unusually cold air led to the development of black ice on Central San Joaquin Valley roadways. Two fatalities occurred during the evening hours of the 20th in the city of Fresno due to black ice on roadways. In addition over 200 accidents were reported in the Fresno/Madera County area. Some additional vehicular accidents were also reported in Merced and Mariposa Counties due to black ice, including stretches of Highways 59, 99, and 152 on the San Joaquin Valley floor. Snow fell on the San Joaquin Valley floor very early in the morning of the 20th although only recorded as a trace at NWS observing sites beginning around 0700 PST.

From the late morning hours until 17:30 PST on the 20th, 8 inches to a foot of new snow fell in the Sierra Nevada Foothill town of Mariposa at approximately the 3000-foot elevation. Over 6,000 local power utility customers went without power the night of the 20th due to the snowfall.

CAZ021

29	0600PST 1000PST				0	10	100K		Fog
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Dense fog formation led to an 8-vehicle pileup on Highway 198 near Lemoore. Visibilities were near zero around Lemoore and less than 100 feet in several other areas along Highway 198 in Kings County. There were several other accidents in Kings County along Highway 41 and other rural roads during the morning dense fog episode.



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