

White Christmas Feature

Monday, December 25, 2023

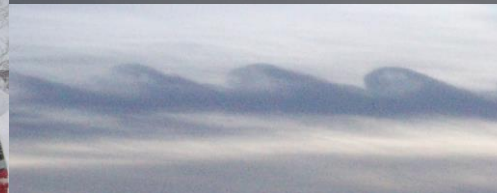
Weather Forecast Office
Albuquerque, NM
Issued December 17, 2023 3:05 PM MST



Rancho de Taos, NM | Bob Freese
December 21, 2006



Albuquerque Wave Clouds | Biran M.
December 25, 2012



Albuquerque, NM | Pat Chando
December 22, 2010



San Jon, NM | Gerald White
December 26, 2007

Angel Fire | Dave Dekema
December 30, 2006



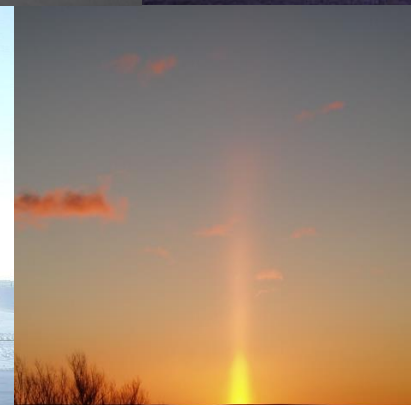
Clayton, NM | Eugene Whinnen
December 31, 2006



Clovis, NM | Ruth Ann Kelly
December 29, 2015



Encino, NM | Della Dunlap
December 27, 2008





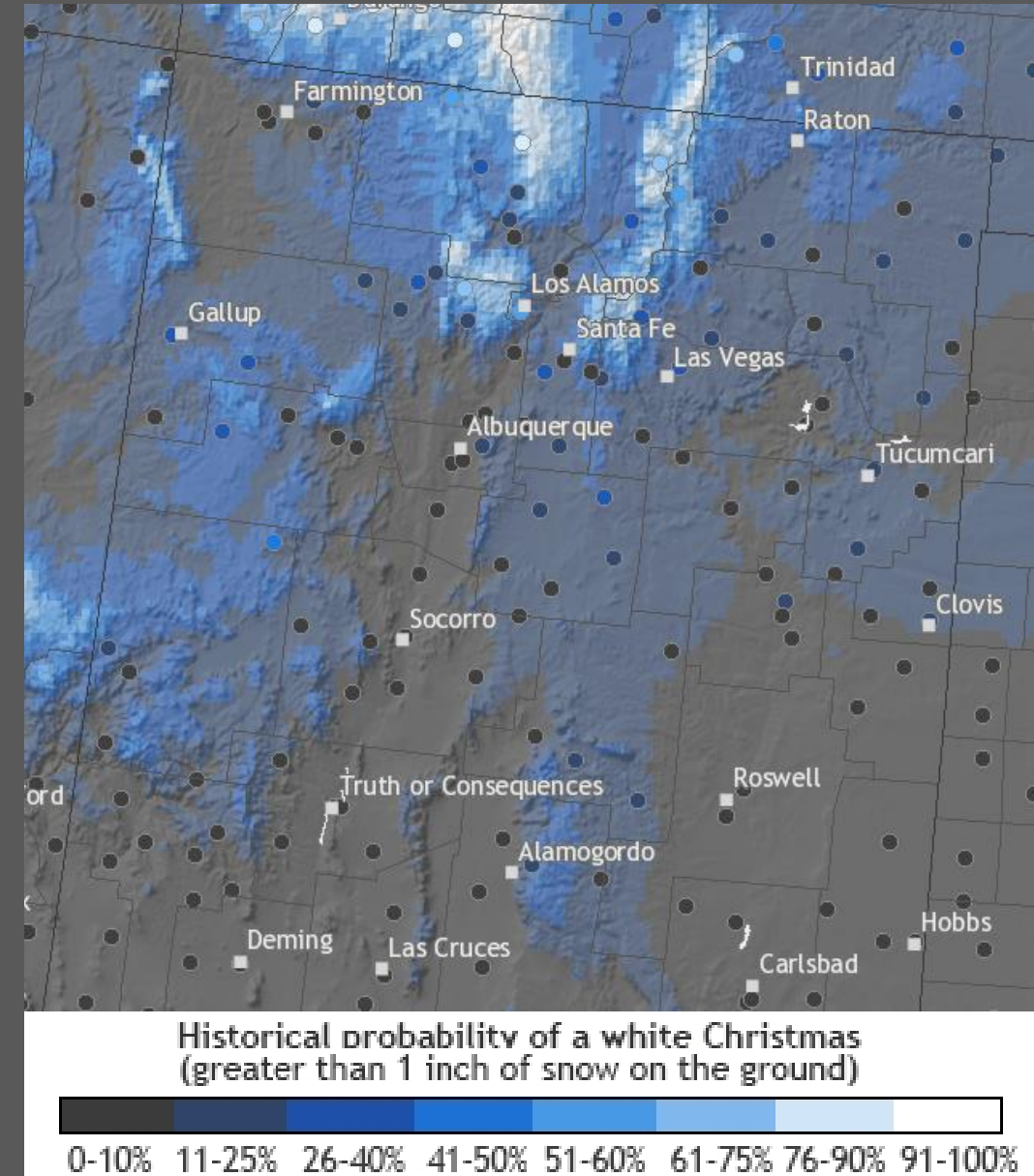
Overview



Have you been dreaming of a “White Christmas”? As you can imagine, the definition of a White Christmas can vary, depending on who you ask. For some, a solid snow cover on Christmas Day under bright blue New Mexico sunshine would qualify. For others, it means seeing snowflakes on Christmas Day, regardless of whether there’s snow on the ground. And for the snow hounds, it means seeing snowflakes and having snow on the ground!

The chances for a White Christmas in Albuquerque and other lower elevation locations across northern and central NM are low, as shown in the image to the right produced by the National Centers for Environmental Information ([NCEI](#)). The image depicts the probability of having at least 1” of snow on the ground on Christmas Day (1981-2010). At the Albuquerque International Sunport the probability of having at least 1” of snow on the ground is 4%, or once every 25 years. Additional probability information is available on the next slide.

The weather around Christmas is typically active across NM as storm systems pass more frequently through the region. Some of the most historic winter storms to impact the area have occurred during the last two weeks of December. The blizzard of 2015 impacted the region shortly after Christmas and paralyzed much of eastern NM with life-threatening weather conditions!





Probabilities



Obviously, the higher in elevation and farther north you are in NM, the better your chances for experiencing a White Christmas. But just how much better? The table below shows the various probabilities for a half dozen communities: Red River, Chama, Gallup, Clayton, the Albuquerque Sunport, and Roswell.

Christmas Day	Red River	Chama	Gallup	Clayton	Albuquerque	Roswell
Elevation (feet)	8676'	7871'	6801'	4969'	5314'	3669'
Period of record (years)	115	128	48	125	130	127
Probability of seeing snowflakes	17%	22%	17%	4%	4%	8%
Probability of having at least 1" on the ground	79%	73%	27%	9%	3%	5%
Probability of seeing snowflakes and snow on the ground	13%	16%	5%	<0.5%	<0.5%	<0.5%
Average high temperature	37°	37°	42°	48°	46°	53°
Average low temperature	3°	8°	11°	20°	22°	23°

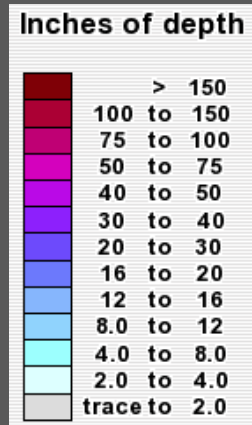
It's important to note that the period of record varies among these stations, which makes it difficult to make accurate comparisons. However, generally speaking, winter storms that track across central or southern NM, and tap low level moisture from the Gulf of Mexico, tend to produce the heaviest and most widespread snow, particularly over the eastern plains. This may explain the fact that the probability of seeing snowflakes in Roswell is slightly better than Albuquerque.



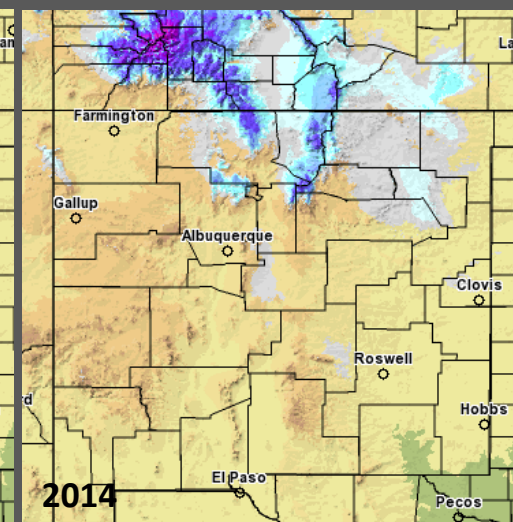
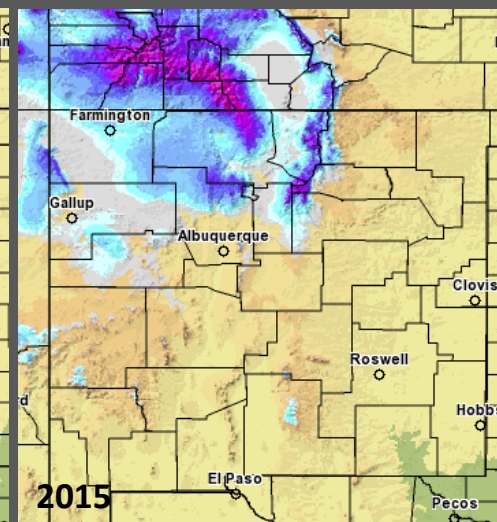
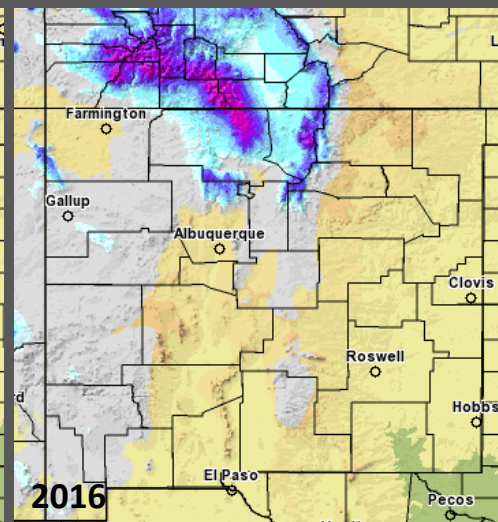
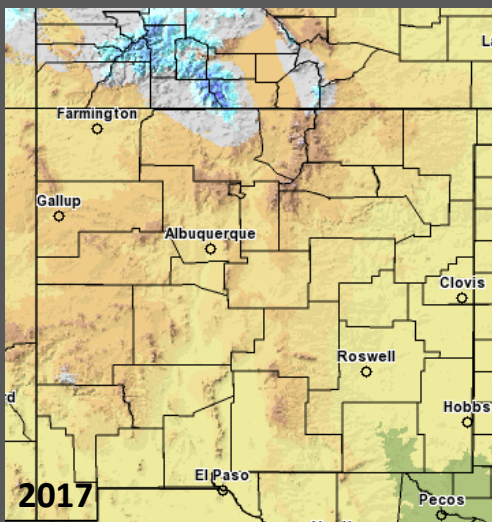
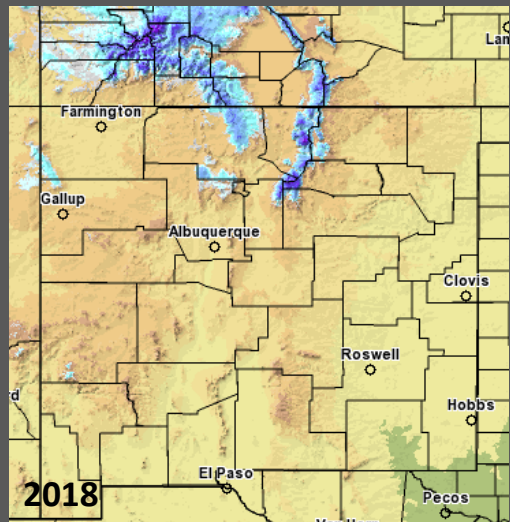
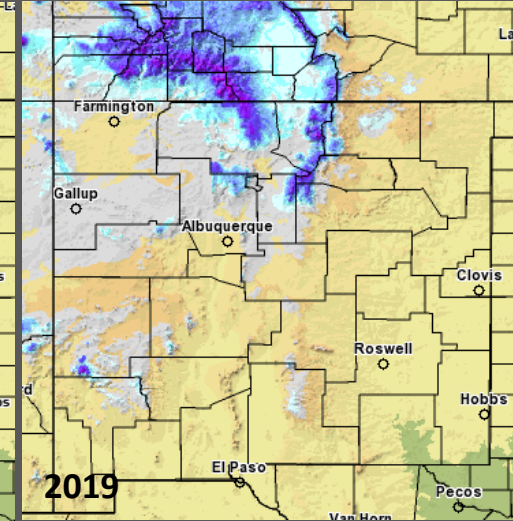
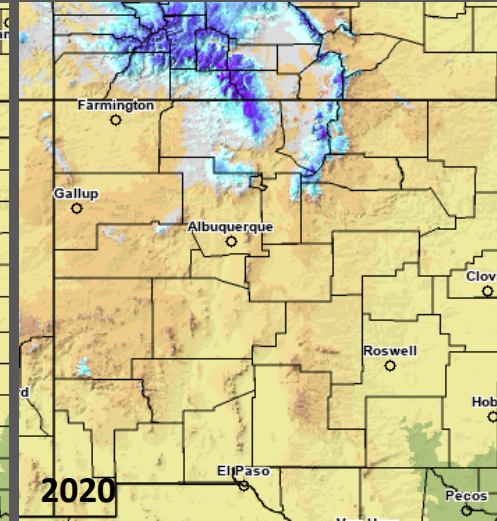
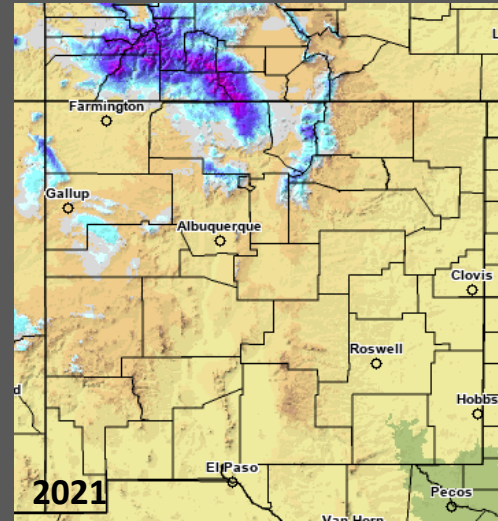
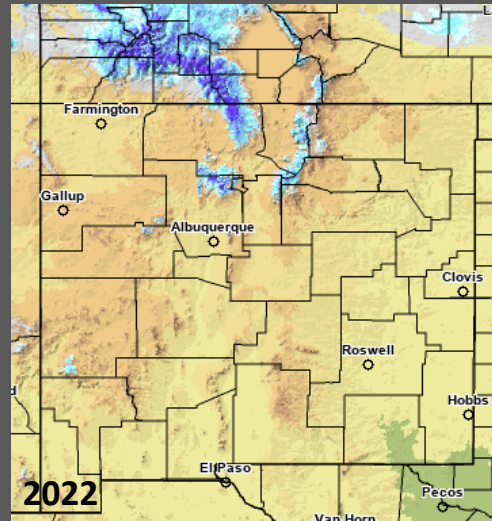
Snow Cover (2014-2022)



The charts below from the National Operational Hydrologic Remote Sensing Center (NOHRSC) show the coverage of snow on the ground Christmas Day. The last time widespread snow was observed on the ground for Christmas was in 2011 (next slide). Most years have seen the bulk of snow cover in the climatologically favored higher terrain of northern and western NM.



2023 ?

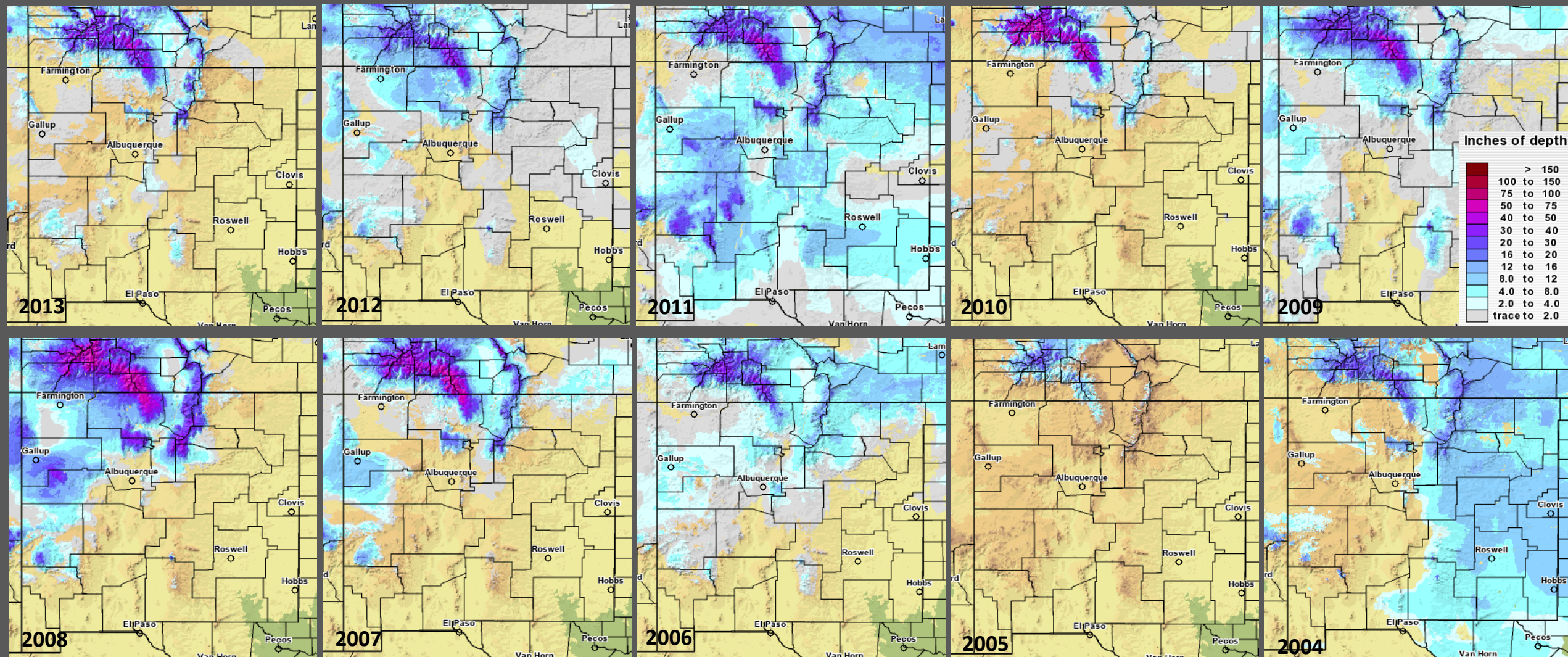




Snow Cover (2004-2013)



Several years between 2003 and 2012 had good coverage of snow on the ground for Christmas, including the most widespread snow cover from 2011. There were also a couple dry years, including 2005 when almost no snowpack existed for much of the following winter season. Snowpack is an extremely important component of water resource management in NM.





Christmas Day Records

Northern & Central NM	Warmest Max Temperature	Warmest Min Temperature	Coldest Max Temperature	Coldest Min Temperature	Wettest	Snowiest	Period of Record
Albuquerque*	63° (1955)	39° (1959)	21° (1924)	-8° (1924)	0.35" (1942)	1.0" (1962)	1892-2021
Clayton*	73° (1963)^	36° (1971)^	17° (1987)^	-2° (1962)	0.68" (1939)	7.4" (1939)	1896-2021
Roswell*	74° (1955)^	45° (1964)^	16° (1983)	1° (1924)	0.60" (1991)	4.3" (1987)	1894-2021
Farmington*	59° (1955)	34° (1983)^	13° (1990)^	-15° (1990)	0.43" (1959)	2.0" (1997)^	1941-2021
Gallup*	61° (1980)	36° (2021)	18° (1990)	-27° (1990)	0.20" (2008)	2.3" (1987)	1973-2021
Santa Fe*	59° (1985)^	38° (1889)	14° (1924)^	-13° (1879)	0.52" (1940)	5.0" (1962)	1874-2021
Raton*	71° (1955)	36° (1955)	3° (1983)^	-8° (1983)	1.04" (2000)	5.0" (1973)	1946-2021
Tucumcari*	77° (1955)	46° (2021)	11° (1983)	-6° (1924)	0.32" (1914)	4.0" (1939)^	1905-2021
Socorro	69° (1933)	47° (2021)	25° (1924)	0° (1924)	0.33" (1911)	1.5" (1939)	1893-2021

Warmest Max Temperature:
Clovis: 91° (1919)

Coldest Min Temperature:
Dulce: -42° (1924)

Wettest:
Glenwood: 1.35" (1944)

Warmest Min Temperature:
Carlsbad Caverns: 55° (1942)

Coldest Max Temperature:
Pasamonte: 3° (1983)

Snowiest:
Bosque del Apache: 16.7" (1987)

* records are a combination of ASOS, active COOP, and/or nearby historical NCEI data for the NWS ABQ forecast area

^ record tied in a previous year but this is the most recent



Historical Weather Events*



- **2018** - Light snow developed over the Four Corners region on Christmas Day then spread east across northern NM through Christmas night. Snowfall ranged from 6 to 10" over the northern mountains to 3 to 6" around Santa Fe and Raton. U.S. 64 was closed west of Raton due to extremely slick travel and numerous accidents were reported around Santa Fe. Two to 5" fell in Albuquerque on the 26th.
- **2016** - Snow spread across northern and western NM on Christmas Eve then into central and eastern NM on Christmas Day. Many folks woke up to a white Christmas with at least light snow accumulations. Six to 12" fell over the northern mountains. Blizzard conditions were reported at Taos Ski Valley with heavy snow and wind gusts up to 105 mph at Kachina Peak.
- **2015** - A winter storm approaching from AZ on Christmas Day developed into a major blizzard across NM on the 26th and 27th. Travel across eastern NM was shut down for days, including I-40 from Tijeras Canyon all the way to TX. A civil emergency was declared for several counties across eastern NM as heavy snow and high winds resulted in drifts up to 10 feet in some places. Rescue crews assisted almost 500 stranded motorists. Power outages effected over 30,000 customers due to downed power lines and roof collapses. Two people died in the storm, including nearly 50,000 livestock across eastern NM. Losses from this blizzard exceeded \$400 million dollars. Around 2" of snow fell in the Albuquerque metro area.
- **2014** - Snow developed over northwest NM late on Christmas Day then spread east across the northern mountains and the high plains of eastern NM through the morning of the 26th. Snowfall amounts ranged from 6 to 12" over the high terrain with 3 to 6" along I-40 from the Sandia Mountains to Clines Corners. Light snow fell around the Albuquerque metro area with less than 2" of accumulation.
- **2011** - An active weather pattern the week before Christmas resulted in a White Christmas for much of the state. In Albuquerque, lower elevations were snow free but several inches remained in the foothills on Christmas Day.
- **2009** - A storm delivered snow to most of the state from late on the 22nd into early Christmas Eve morning, leaving at least 75% of the state with snow on the ground for Christmas Day. The Albuquerque Foothills reported around 1" while the Sunport reported a trace.
- **2007** - A fast-moving storm brought snow to northern and eastern NM on Christmas Day. By late evening, 1 to 3" was reported over eastern NM, as well as gusty north to northeast winds with blowing and drifting snow. Three to 6" fell in the Sangre de Cristo Mts.



Historical Weather Events



- **2006** – Parts of far northeast NM received 1 to 2" of snow on Christmas Day. In Albuquerque, however, the big snow waited for a few days after Christmas, when a record 16.3" fell over a two-day period at the Sunport on December 29th and 30th.
- **2005** – It was a very warm Christmas as many locations across central and eastern NM warmed into the 70s. Bosque del Apache recorded a high of 77°, Tucumcari 76°, Fort Sumner 75°, Roswell 73°, Raton 71°, and Las Vegas 69°.
- **2002** – A storm system affected NM from late on the 22nd through the 24th. This storm moved slowly from southern CA into the northern Baja on the 22nd then turned northeast toward NM. The storm brought a dusting of snow to the Albuquerque metro area on Christmas Eve. Two to 4" fell across the northern mountains on Christmas Eve.
- **2000** – It was a white Christmas indeed! Light snow fell across the Albuquerque metro area on Christmas Day but temperatures were just a little too warm for it to accumulate. Only a trace was measured at the Sunport and along the foothills. However, it was a different story Christmas night and the day after (26th). A strong storm intensified as it moved over central NM, dumping 6.1" at the Sunport on the 26th. The foothills reported 7" while the East Mountain communities picked up 8 to 10". Gascon was buried in 22" of snow!
- **1999** - It snowed 1" between 7am and noon on Christmas Day at the Albuquerque Foothills weather station. A mix of rain and snow was observed at the Sunport totaling 0.02" of precipitation for the day. It was a white Christmas from Ruidoso to Elk where 4 to 8" fell.
- **1997** - Only a trace of snow remained on the ground at the airport on Christmas Day from the stormy period of December 20-23. Snow depth at the Albuquerque Foothills station was still 6".
- **1990** – One inch of snow was still on the ground at the Sunport on Christmas Day from a storm a few days earlier. This was the first snow event at the new Albuquerque Foothills station. At that location (near Tramway/Montgomery), snow depth from earlier storms was 11" at 5pm on the 24th, and still 9" at 5pm on Christmas Day. Bitterly cold air settled into the area for Christmas Day. The high temperature at the Sunport was 28° and the low 0°. Lows on Christmas Eve fell to -37° at Chaco Canyon, -32° at Gallup, -29° at Las Vegas, and -18° at Farmington.



Historical Weather Events



- **1987** – A whopper of a winter storm dumped 6 to 12" of snow over much of northern and central NM on Christmas Eve and Christmas Day, including 16.7" at Bosque del Apache. Only 0.4" fell at the Albuquerque Sunport on Christmas Eve.
- **1975** – One to 2" of snow fell over parts of northern and eastern NM on Christmas Eve, including 0.3" at the Albuquerque Sunport.
- **1974** – It began snowing Christmas afternoon. Just over half an inch (0.6") had accumulated at the Sunport by late afternoon, and the storm total was 3.5" when the event ended after midnight. Bitterly cold low temperatures impacted northern NM on Christmas Day. Folks around Eagle Nest woke up to a temperature of -41°, Dulce -23°, Cerro -22°, Reserve -20°, El Morro -17°, and Gallup -10°.
- **1962** – It snowed 1" on Christmas Day at the Albuquerque airport. Most higher terrain locations picked up 2 to 4" while lower terrain areas and the eastern plains saw 1 to 2".
- **1959** – Red River reported the snowiest Christmas on record in NM with a whopping 3-day snowfall of 27" ending on the 26th! Ten to 15" was common over the rest of the northern high terrain while 1 to 2" fell at lower elevations of northern NM.
- **1957** – It snowed 2.9" on the night before Christmas at the Albuquerque airport, and even more than that over most of the city. This event was probably pretty close to the "ideal" white Christmas portrayed in the movies.
- **1955** – It was a very warm Christmas as high temperatures warmed in the upper 70s and lower 80s across eastern NM. Bitter Lakes Wildlife Refuge east of Roswell reached 81°, Tucumcari and Clayton 77°, and Raton 74°.
- **1952** – It snowed 0.2" on the 21st, 0.6" on the 23rd, and 0.1" on Christmas Eve at the Albuquerque airport. It didn't snow on Christmas Day but the high temperature was only 29° (the low was 14°). Consequently, the ground was still "somewhat" white. Two to 4" fell across the rest of northern and eastern NM on Christmas Eve.
- **1948** – Two to 4" fell around Red River, Chama, Farmington, Ruidoso, Mountainair, and Elk. Roswell picked up 1.8" on Christmas Day. A trace of snow fell on Christmas Day at the Albuquerque airport.



Historical Weather Events

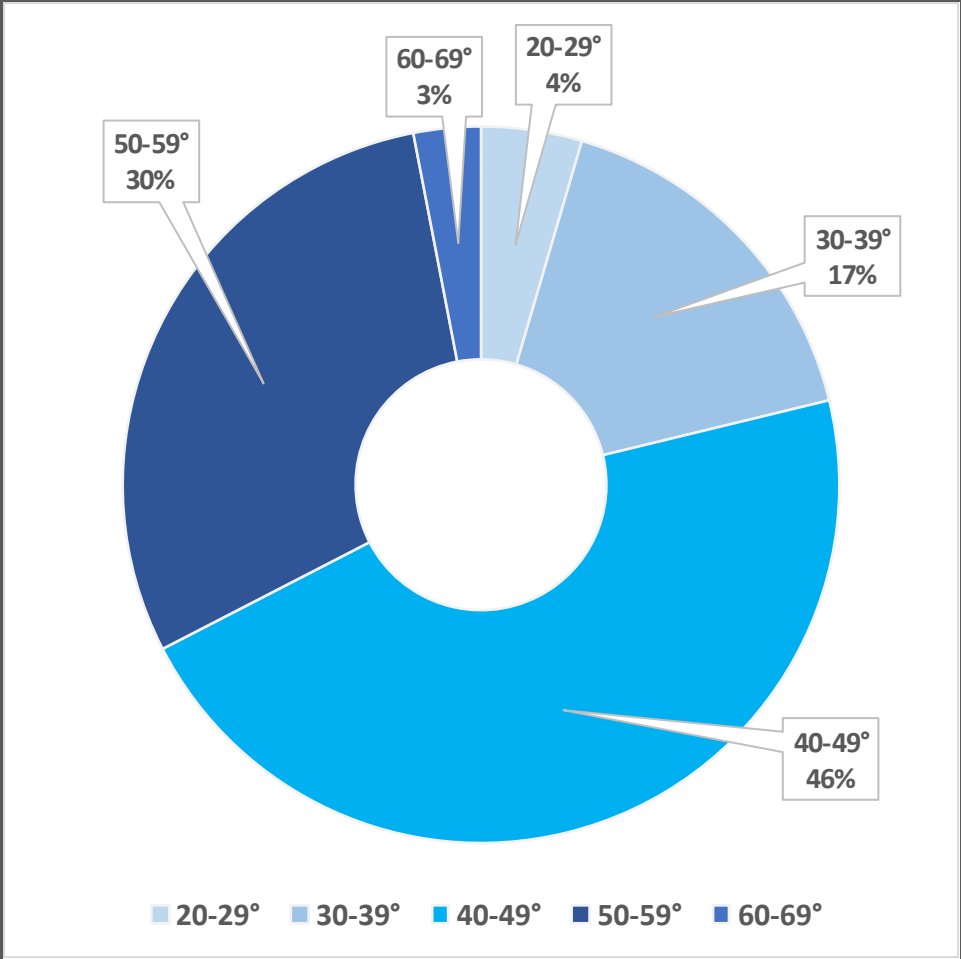


- **1945** – Parts of northern NM picked up 2 to 5" on Christmas Eve. A trace of snow fell on Christmas Day at the Albuquerque airport.
- **1939** - It snowed 0.3" at the Albuquerque airport on Christmas Day. Widespread light to moderate snow impacted the rest of northern and central NM with 2 to 5" common. Northeast NM picked up the heaviest snowfall with 6 to 10" around Clayton on Christmas Day.
- **1924** – A major snowstorm struck the area on the 23rd with 12 to 18" in the high terrain. It snowed 3" on the 24th in the Albuquerque area. Snow stuck around for Christmas Day as the high temperature was only 21° and the low was -8°. Extremely cold temperatures impacted the area. Dulce recorded a brutally cold low temperature of -42°, Red River -30°, Aztec -24°, Quemado -20°, and Clayton -12°.
- **1923** – A trace of snow fell on Christmas Day in the Albuquerque area.
- **1920** - Chama reported the 2nd snowiest Christmas on record in NM with a whopping 3-day snowfall of 26" ending on the 26th!
- **1914** - It snowed 6" from 7am until 7pm on Christmas Eve in the Albuquerque area. Since the weather station was near downtown at that time, the area that now represents the far northeast heights and foothills probably got buried in that one!
- **1911** - It snowed 2" from 6am to 10am on Christmas Day in the Albuquerque area with the temperature hovering at 30°. The 2nd coldest temperature ever recorded in Albuquerque occurred the day after Christmas with a low of -16°. Red River picked up 12" of snow ending on the 26th.
- **1905** - It snowed 1" on Christmas Day in the Albuquerque area. The high temperature was 29° and the low was 4°.
- **1901** – A trace of snow fell on Christmas Day in the Albuquerque area.

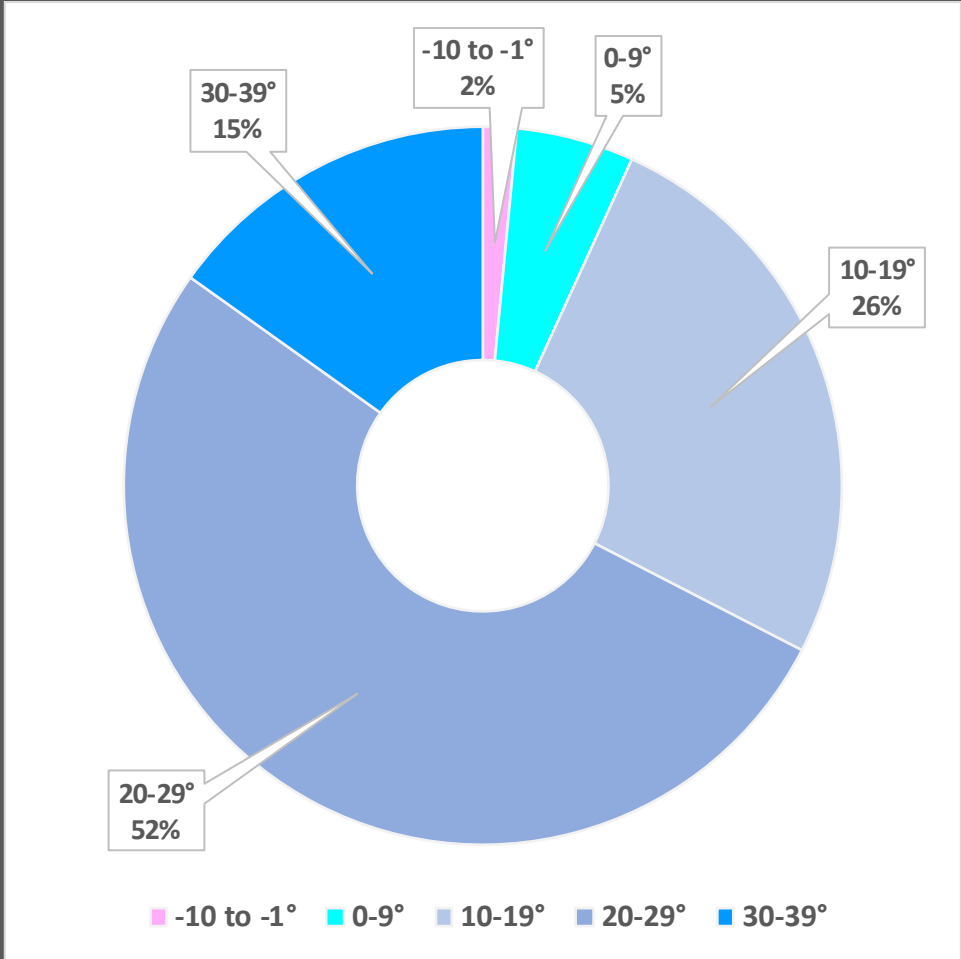


Temperature Distributions

The pie charts below show the percent distribution of maximum and minimum temperatures for the Albuquerque area on Christmas Day for each range listed (1891-2022). High temperatures in the 40s and 50s occur 75% of the time while low temperatures in the 10s and 20s occur 78% of the time. High temperatures in the 60s and low temperatures below 0° are extremely rare.



Maximum Temperatures



Minimum Temperatures



Rain and Snow



Precipitation is rare on any given day in Albuquerque given our predominantly arid southwest climate. Measurable rain and snow have only occurred on a handful of Christmas days while several other days have picked up trace amounts. The table below highlights the years when rain and/or snow fell at the Albuquerque Sunport (1931-2022). It is worth noting that precipitation can vary greatly across the metro area and there may be days when no rain and/or snow was recorded at the airport but other parts of town picked up precipitation, and vice-versa. The 1.0" of snow on Christmas Day 1962 still remains the record for the snowiest at the airport dating back to 1931.

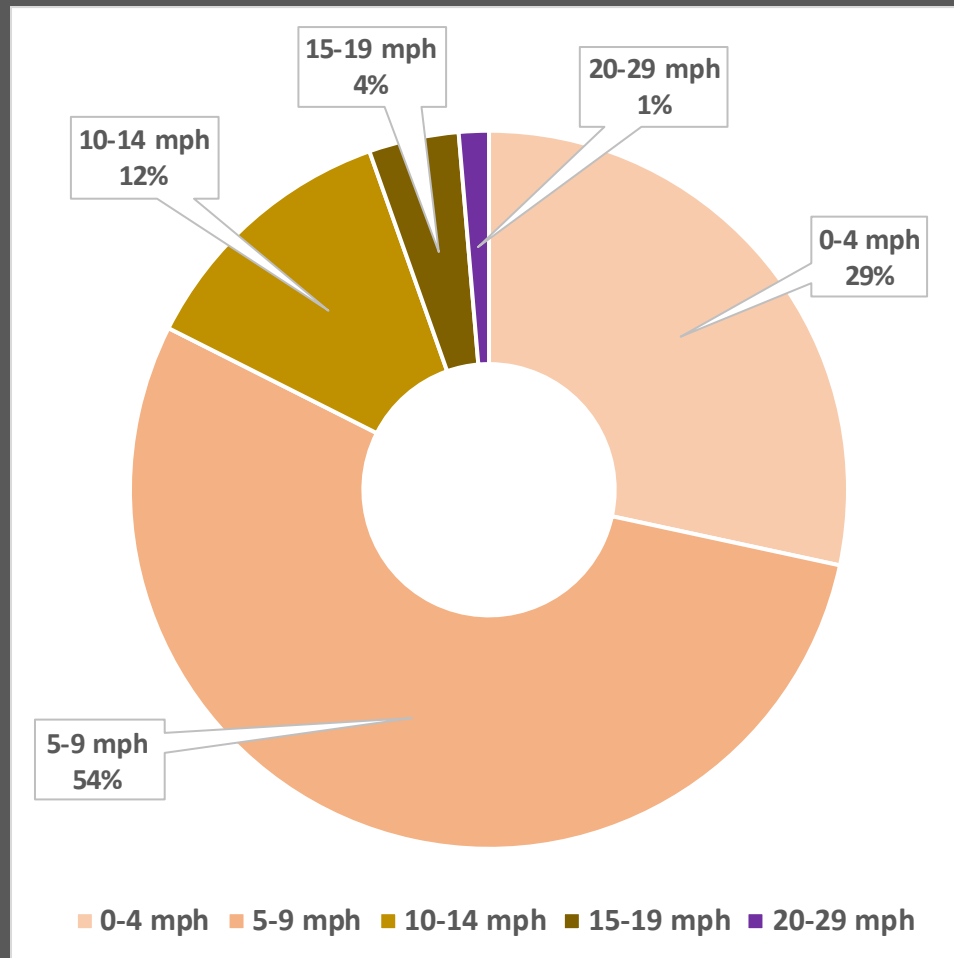
Albuquerque Sunport	Precipitation	Snowfall
1936	T	--
1939	0.03"	0.3"
1940	0.03"	--
1942	0.35"	T
1944	T	--
1945	T	T
1948	0.01"	T
1959	0.02"	--
1962	0.07"	1.0"
1964	T	--
1974	0.06"	0.6"
1982	T	T

Albuquerque Sunport	Precipitation	Snowfall
1983	0.11"	0.8"
1987	T	T
1991	0.01"	--
1997	T	T
1999	0.02"	--
2000	T	T
2008	T	T
2014	T	T
2016	T	T
2019	T	T
2021	T	--

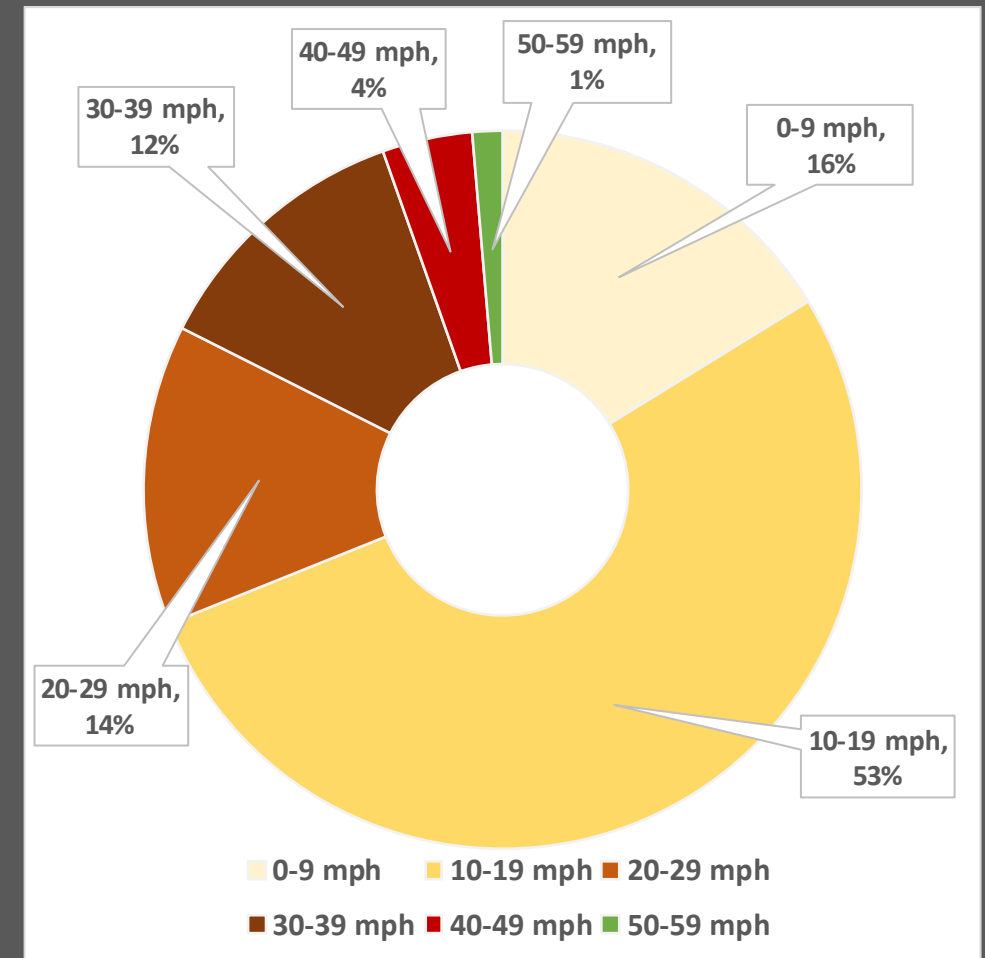


Wind Distribution

The pie charts below show the percent distribution of average wind speed and peak wind gust for the Albuquerque area on Christmas Day for each range listed (1949-2022). Average wind speeds less than 10 mph occur 82% of the time while peak wind gusts less than 20 mph occur 68% of the time. The peak wind gust on Christmas Day was 52 mph in 1987 when east winds plowed through Tijeras Canyon.



Average Wind Speed



Peak Wind Gust