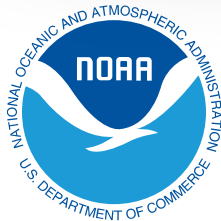




A
Christmas
Climatology

NWSMemphis
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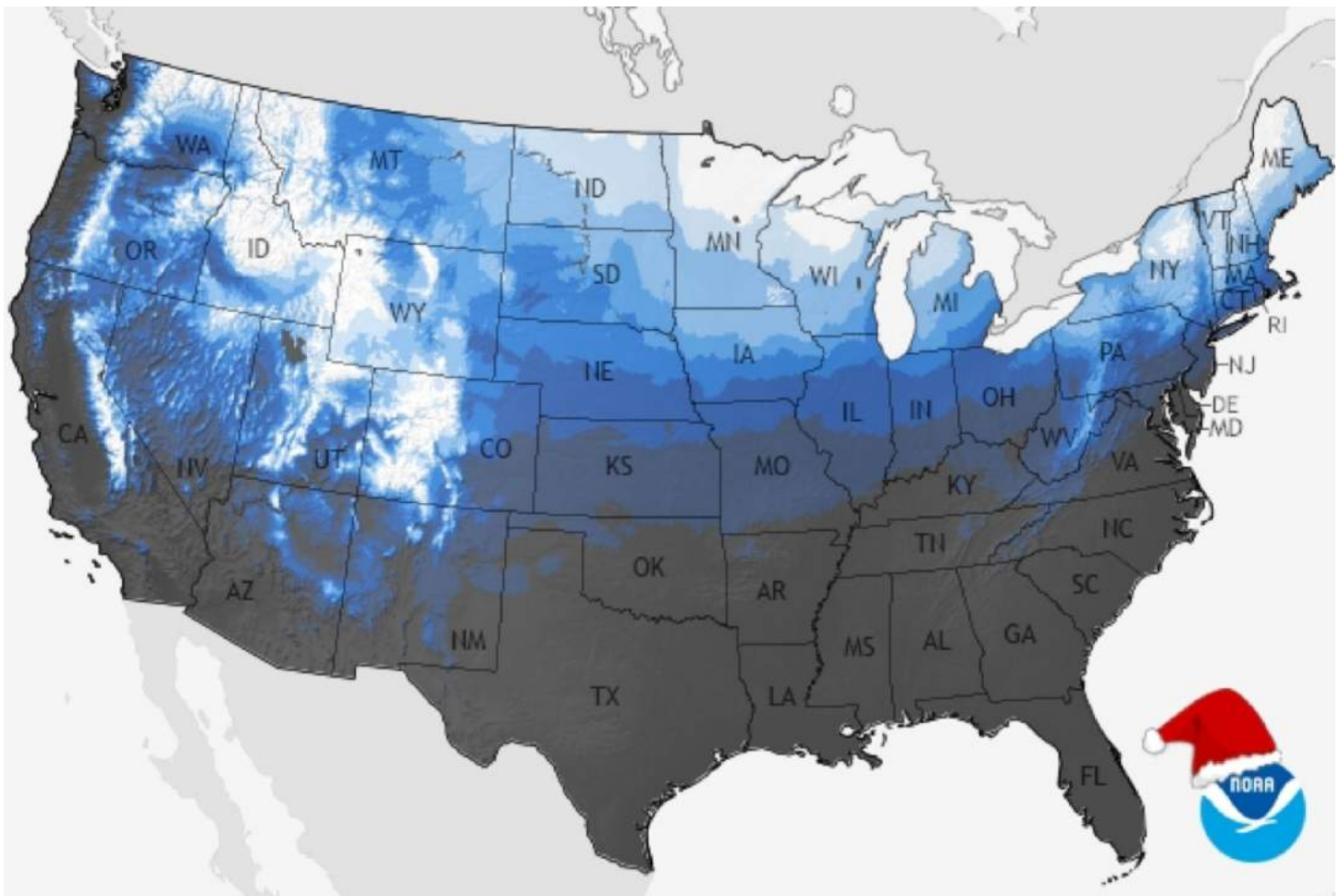


A Christmas Climatology

December is the first month of meteorological winter and the beginning of the coolest time of the year for the Mid-South. As the colorful leaves of fall quickly diminish as a result of the increasing cold winds of winter, many anticipate the holiday season of late December by 'dreaming of a white Christmas'. While the hope of such an event may persist with each passing year, the climatology of December 25th shows just how unlikely that is to occur in any given year.

THE SNOWS OF CHRISTMAS PAST

The map below, from the National Climatic Data Center (NCDC), shows historical probabilities nationwide of a white Christmas. While our friends well to the north and in portions of the Rocky Mountains have a great likelihood of a white Christmas annually, notice that all areas of the Mid-South have less than a 10% probability of a white Christmas in any given year. To be more realistic, we have much less than a 10% probability of a white Christmas in any year. Of our four official climate sites around the Mid-South (Memphis, Jackson, Jonesboro, and Tupelo), Jonesboro has the greatest likelihood of a white Christmas.



Historical probability of a white Christmas (greater than 1 inch of snow on the ground)





In this local study a snow depth and/or snowfall of 1 inch or greater on Christmas constitutes as a white Christmas. It is important to note that the snow depth for each Christmas Day was recorded at around 6 AM CST, thus the inclusion of snowfall values of an inch or greater, as this ensures those days where snow began after the snow depth was recorded get included in the white Christmases tally. Jonesboro has a slightly greater likelihood because it has had 6 instances of snowfall greater than an inch on Christmas and 5 instances of at least an inch of snow on the ground on Christmas morning, together making 7 white Christmases since 1890. Historically Tupelo has the least likelihood of a white Christmas, with only 1 instance of snow on the ground on Christmas morning, and 1 instance of snowfall exceeding an inch on Christmas Day.

The last white Christmas in the Mid-South occurred in 2012 when Jonesboro had 5 inches on the ground on Christmas morning! This was also the greatest snow depth ever recorded on Christmas in Jonesboro. Memphis and Jackson also reported snowfall that Christmas, but only a trace, and no snow on the ground. The last white Christmas at both of those sites occurred in 2004 with both sites reporting a snow depth of 2 inches, meaning the snow actually fell prior to Christmas Day. Since the beginning of its records in 1930, Tupelo has only once recorded a snow depth on Christmas, and that occurred in 1998 with 1 inch on the ground. Its second and latest white Christmas occurred in 2010 when 1.4 inches of snowfall was reported. Again, snow depth for Christmas morning is measured at 6 AM CST. This latest Tupelo white Christmas began after that measurement, thus no snow depth was recorded that day.

Here is a listing of white Christmases, by site:

Memphis: 1913, 1962, 1963, 1998, 2004

Jackson: 1897, 1913, 1962, 1963, 2004

Jonesboro: 1897, 1913, 1926, 1962, 1963, 1992, 2012

Tupelo: 1998, 2010

PRECIPITATION

When considering all precipitation on Christmas, Memphis is actually the site with the most occurrences on Christmas, and also has the greatest precipitation total for Christmas Day with 4.24 inches back in 1987, none of that being snow. Speaking of 1987, all sites except Tupelo recorded their highest precipitation amount ever on Christmas Day that year, indicating Christmas 1987 was wet across much of the Mid-South. Tupelo has the least occurrences of precipitation on Christmas, but it also has a shorter period of record than all the other sites which could have some impact on this. Its greatest precipitation on Christmas occurred in 1951 with 4.10 inches.



TEMPERATURE

Considering just the four official climate sites in the region, the highest temperature observed on Christmas was 78 degrees, and occurred in Tupelo back in 1978. The lowest temperature observed was a chilling -5 degrees on Christmas Day 1983 in Jonesboro. Speaking of 1983, that was quite a cold Christmas for the entire region. In fact, all four sites recorded record low temperatures and record low high temperatures for Christmas Day that year. The high at Memphis was just 16 degrees, 14 degrees at Jackson, 13 at Jonesboro, and 17 at Tupelo. However, it was a dry day with no white Christmases occurring in 1983.

The following data are Christmas Day records, averages, and number of occurrences from the four official sites:

Memphis

	Maximum	Minimum	Average	# of Occurrences
Daily High Temperature	76 (1889)	16 (1983)	50	
Daily Low Temperature	63 (1889)	0 (1983)	34	
Daily Average Temperature	69.5 (1889)	8.0 (1983)	41.8	
Daily Precipitation	4.24 (1987)	0.00	0.18	38 (≥ 0.01)
Daily Snowfall	3.5 (1913)	0.0	0.0	1 (≥ 1.0)
Daily Snow Depth	10 (1963)	0	0	4 (≥ 1)

Last Christmas Snowfall: 2012 (Trace SF)
Last White Christmas: 2004 (2.0 inches SD)

Temperature Records: 1875 - Present
Precipitation Records: 1872 - Present
Snowfall Records: 1875 - Present
Snow Depth Records: 1928 - Present



Jackson

	Maximum	Minimum	Average	# of Occurrences
Daily High Temperature	71 (1982)	14 (1983)	49	
Daily Low Temperature	55 (2016)	-2 (1983)	30	
Daily Average Temperature	63.0 (1982)	6.0 (1983)	39.1	
Daily Precipitation	7.86 (1987)	0.00	0.16	39 (≥ 0.01)
Daily Snowfall	6.0 (1913)	0.0	0.0	2 (≥ 1.0)
Daily Snow Depth	8 (1963)	0	0	4 (≥ 1)

Last Christmas Snowfall: 2012 (Trace SF)
Last White Christmas: 2004 (2.0 inches SD)

Temperature Records: 1948 - Present
Precipitation Records: 1891 - Present
Snowfall Records: 1893 - Present
Snow Depth Records: 1900 - Present

Jonesboro

	Maximum	Minimum	Average	# of Occurrences
Daily High Temperature	72 (1942)	13 (1983)	46	
Daily Low Temperature	61 (1982)	-5 (1983)	29	
Daily Average Temperature	65.0 (1942)	4.0 (1983)	37.8	
Daily Precipitation	3.00 (1987)	0.00	0.16	32 (≥ 0.01)
Daily Snowfall	7.0 (1926)	0.0	0.1	6 (≥ 1.0)
Daily Snow Depth	5 (2012)	0	0	5 (≥ 1)

Last Christmas Snowfall: 2012 (4.5 inches SF)
Last White Christmas: 2012 (5.0 inches SD)



Temperature Records: 1890 - Present
Precipitation Records: 1893 - Present
Snowfall Records: 1890 - Present
Snow Depth Records: 1900 - Present

Tupelo

	Maximum	Minimum	Average	# of Occurrences
Daily High Temperature	78 (1987)	17 (1983)	52	
Daily Low Temperature	65 (2015)	0 (1983)	33	
Daily Average Temperature	68.5 (2015)	8.5 (1983)	42.3	
Daily Precipitation	4.10 (1951)	0.00	0	26 (≥ 0.01)
Daily Snowfall	1.4 (2010)	0.0	0	1 (≥ 1.0)
Daily Snow Depth	1 (1998)	0	0	1 (≥ 1)

Last Christmas Snowfall: 2010 (1.4 inches SF)
 Last White Christmas: 2010 (1.4 inches SF)

Temperature Records: 1930 - Present
Precipitation Records: 1930 - Present
Snowfall Records: 1930 - Present
Snow Depth Records: 1930 - Present