

# Nebraska's Climate

THE COCORAHS 'STATE CLIMATES' SERIES

## Nebraska: Home of the Whopper

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Nebraska is located within a transition zone between semi-humid and semi-arid environments. In the early stages of the industrial revolution, most of the state was covered by vast prairies, with eastern Nebraska dominated by tall grass species transitioning to short grass species west of the 100 longitude line. Annual precipitation at this intersection point averages 23 inches per year.

Annual average precipitation based upon the 1971-2000 period ranges from 34 inches in the southeastern corner of the state to 15 inches in the extreme northwestern corner of Nebraska. This translates to a gradient of 19 inches on a southeast to northwest gradient. The total transect distance is approximately 450 miles resulting in an one inch decline for every 23 miles traveled toward the west-northwest.

May, June, and July are the typically the three wettest months of the year, accounting for an average of 40 percent of the annual total. The three driest months of the year are December, January, and February, which account for 7 percent of the annual total. Annual precipitation totals can have high variability from year to year, with drought and excessive moisture experienced during relatively short time frames of 5 years or less.

Since weather records began in the 1860's at U.S. Army outposts, the greatest annual precipitation recorded was 64.52 inches at Omaha during 1869. The smallest annual precipitation measurement recorded was 6.30 inches at Hull during 1931. The greatest 24 hour precipitation event in recorded history occurred at York with 13.15 inches during the July 7-8, 1950 timeframe. The single greatest 24-hour snow event recorded was 27 inches on December 21, 2006 at Dalton, while Fremont recorded the greatest snow depth of 44 inches on February 16, 1936.

Severe weather is a common event within Nebraska, with an average of 57 tornado reports per year based upon the 1950-2009 period. The panhandle of Nebraska averages 4 to 8 hail events per year, with greatest average assigned to the southwestern corner of the panhandle. Eastern Nebraska averages just shy of 2 hail days per year, increasing to 4 hail days per year at the eastern edge of the panhandle. On June 22, 2003 a severe thunderstorm dropped "a whopper" of a hailstone over Aurora that was 7.0 inches in diameter with a circumference of 18.75 inches. This hailstone stood until recently as the largest hailstone by size (not weight) ever recorded in the United States.

With such strong precipitation variability across the state, it stands to reason that temperatures would follow a similar trend. The highest temperature ever recorded in the state was 118 F at Geneva on July 15, 1934, Hartington on July 17, 1936, and Minden on July 24, 1936. Almost every recording location with records dating back to 1930 or earlier has experience at least one day where the maximum temperature has reached or exceeded 110 F.

Nebraska can be a frigid place during the winter and the lowest minimum temperature ever recorded was -47 F recorded at Bridgeport on February 12, 1889 and Oskosh on December 22, 1989. At least 90 percent of the stations that have weather records dating back to the 1890's has experienced at least one day where the minimum temperature dropped to -30 F or lower.

For more information on Nebraska's climate please visit the Nebraska Climate Office website at:  
<http://snr.unl.edu/neclimateoffice/index.asp>