

# Climate of Arkansas

## Introduction

This publication consists of a narrative that describes some of the principal climatic features and a number of climatological summaries for stations in various geographic regions of the State. The detailed information presented should be sufficient for general use; however, some users may require additional information.

The National Climatic Data Center (NCDC) located in Asheville, North Carolina is authorized to perform special services for other government agencies and for private clients at the expense of the requester. The amount charged in all cases is intended to solely defray the expenses incurred by the government in satisfying such specific requests to the best of its ability. It is essential that requesters furnish the NCDC with a precise statement describing the problem so that a mutual understanding of the specifications is reached.

Unpublished climatological summaries have been prepared for a wide variety of users to fit specific applications. These include wind and temperature studies at airports, heating and cooling degree day information for energy studies, and many others. Tabulations produced as by-products of major products often contain information useful for unrelated special problems.

The Means and Extremes of meteorological variables in the Climatography of the U.S. No.20 series are recorded by observers in the cooperative network. The Normals, Means and Extremes in the Local Climatological Data, annuals are computed from observations taken primarily at airports.

The editor of this publication expresses his thanks to those State Climatologists, who, over the years, have made significant and lasting contributions toward the development of this very useful series.

**State and Station Normals are available at:**

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## **Climate of Arkansas**

Topographic Features- Arkansas is divided geographically into two principal divisions on the basis of topography, soils, farming activity, economic conditions and to a lesser extent climate. The dividing line between these two sections cuts diagonally across the State from northeast to southwest. West and north of this line are the interior highlands, to the east and south are the lowlands. Climatic differences between the two areas are not as great as the local differences between mountain and valley stations in the highlands. Generally, the climate of western and northern Arkansas is a little cooler and there are greater temperature extremes, humidity is lower and there is less cloudiness.

Much of western and northern Arkansas is hilly or mountainous. In the southern part of this area or that portion of the Arkansas River, are the Ouachita Mountains made up of a number of narrow east-west ridges separated by the rather narrow valleys. Some of these ridges reach elevations of 2,500 feet or more. The Arkansas valley, between the Ozark and Ouachita Highlands, is an area of fairly low relief with a few isolated ridges and mountains. One of these mountains, Mt. Magazine, with an elevation of 2,753 feet above sea level, is the highest point in the State.

The Ozark Mountains and particularly that portion known as the Boston Mountains are the largest in Arkansas. It is this topographical feature of the State that has the most noticeable effect upon Arkansas weather.

Temperature- Average temperatures show little variation over the State. Temperatures vary more from northwest to southeast in the winter rather than in the summer. Maximum temperatures exceed 100 degrees Fahrenheit ( $^{\circ}$  F) at times, especially during July and August, particularly at valley stations in the highlands. The highest temperature ever recorded in Arkansas was  $120^{\circ}$  F. The winters are short, but cold periods do occur. In the northern part of the State, temperatures of  $0^{\circ}$  F or lower occasionally occur in January and February and 0 has also been recorded along the southern border. The coldest temperature ever recorded in Arkansas was  $-29^{\circ}$  F.

The long growing season, from 180 days in the northwest to more than 230 days in the principal cotton producing areas, favors agricultural activities. In addition to adequate moisture during the growing season, eastern and southern Arkansas areas have dry, sunny weather during the early fall which favors harvesting of rice and cotton. Cotton and small fruits are sometimes damaged by late spring freezes, but as a rule all crops mature in the fall before freeing weather occurs. Extended very warm to hot periods are common during the summer.

Precipitation- Arkansas precipitation is predominantly of the shower type during the summer with periods of general rain during the late fall, winter and early spring. The average number of days with measurable precipitation averages about 100 per year. Rainfall is normally abundant

throughout the year assuring well-sustained agricultural production and making possible rapid reforestation. However, extended rain-free periods, as well as, local floods, are by no means unusual.

Annual precipitation amounts reflect both local orographic influence and geographic location with the State. By virtue of being closer to the Gulf of Mexico moisture source, the southeast counties receive, on the average, five to six inches more rainfall than the northern counties. The only exception to this occurs in the Ozark and Ouachita Mountains.

Winter and spring are the wettest time of the year. December and January are the wet months, on average, in the southern counties and March through May is the wet period in the north. Fall is the driest time of the year, although monthly totals still average about three inches.

The State is subject to heavy rains which frequently give storm totals from five to 10 inches over extensive areas. Occasionally, heavy local rains will produce totals in excess of 10 inches. Flood control projects have greatly reduced major losses due to floods. However, floods are frequent along the White, Black and Ouachita rivers. Disastrous floods are rare. The great flood of 1927 inundated one-fifth of the State's total area and covered most of the fertile alluvial soils of the lowlands. However, a completely leveed Mississippi River has removed the threat of repetition of this historic flood.

Most of the State's precipitation falls as rain. Snow does occur, primarily in the northwest. The average annual totals range from a little over a foot in the higher Ozark elevations in the northwest to one to two inches in the delta flatlands of the southeast counties. Snowfall in the southern and eastern lowlands is generally light and remains on the ground only briefly.

Despite the generally abundant rainfall, short periods of dry weather are frequent over small areas of the State. Occasionally, severe droughts of longer duration and involving large areas do occur.

Tornadoes are reported each year. About 57 thunderstorms are reported each year at Little Rock and Fort Smith, with the greatest frequency in June and July. Winter storms are rare, but on occasion can dump several inches of snow, and even glaze the roads with ice.

Climate and the Economy- Agriculture is the State's largest industry. Alluvial soils along the Mississippi, Arkansas and White rivers provide fertile soils for growing many crops. Arkansas ranks high nationally in the production of rice, cotton and soybeans.

Soils over much of the highlands are not productive enough for extensive row crop agriculture. Livestock and poultry raising with some fruit and vegetable production are the principal enterprises on these upland farms. Arkansas has ranked high in the production of poultry.