CLIMATE OF SOUTH CAROLINA

South Carolina's climate is relatively temperate, although the average temperature and total precipitation vary considerably across the state. The state's annual average temperature varies from the mid-50s in the mountains to low 60s along the coast. During the winter, average temperatures range from the mid-30s in the mountains to low 50s in the Lowcountry. Figure 1 and Figure 2 show the range of temperatures for selected locations with a general 10 degree difference each month between the mountains and the coast. By following the graph for Charleston (downtown), you can see the moderating influence of the Atlantic Ocean on coastal temperatures. Winter temperatures are a few degrees warmer than inland sites (Columbia) while the mid-summer maximum temperatures are almost equivalent to upstate locales (Greenville-Spartanburg). Notice, however, that Charleston's minimum temperatures are always several degrees warmer than inland sites as a result of its proximity to water, which has a high specific heat capacity. Water not only heats more slowly than land, it cools more slowly as well.

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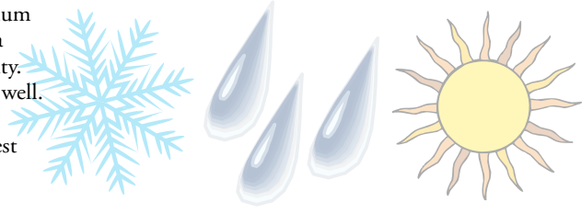
South Carolina's precipitation distribution varies geographically, seasonally, and annually. The heaviest rainfall occurs in the northwest higher elevations, and the least amounts occur in the central part of the state. In the mountains, between 70 to 80 inches of rainfall occur at the highest elevations, with the highest annual total at Caesars Head (79.29 inches). Across the foothills, average annual precipitation ranges from 60 to more than 70 inches. In the eastern and southern portions of the piedmont, the average annual rainfall ranges from 45 to 50 inches. On average, the driest portion of the state is the midlands, where annual totals are mostly between 42 to 47 inches. Precipitation amounts are a little higher across the coastal plain. A secondary statewide maximum occurs parallel to the coast and about 10 to 20 miles inland. This maximum is a result of the sea-breeze front thunderstorms prevalent during summer. In the coastal plain, rainfall averages 50 to 52 inches.

South Carolina's average relative humidity does not vary greatly from season to season but is generally higher during the summer. The lowest relative humidities are found within the Upstate and average about 69 percent. The highest are along the coastal locations and average around 73 percent. High temperatures combined with humid conditions can produce uncomfortable heat index values exceeding 105° F. A temperature of 95° F and a relative humidity of 50% produce a heat index of about 105° F, which is high enough to make heatstroke possible. High humidity makes heat more dangerous because it slows the evaporation of perspiration – the body's natural cooler.



Temperature (F) versus Relative Humidity (%)

° F	90%	80%	70%	60%	50%	40%
80 ° F	85	84	82	81	80	79
85 ° F	101	96	92	90	86	84
90 ° F	121	113	105	99	94	90
95 ° F		133	122	113	105	98
100 ° F			142	129	118	109
105 ° F				148	133	121
110 ° F						135

80° F-90° F	Fatigue possible with prolonged exposure and physical activity
90°F-105°F	Sunstroke, heat cramps and heat exhaustion possible
105°F-130°F	Sunstroke, heat cramps, and heat exhaustion likely, and heat stroke possible
130°F or greater	Heat stroke highly likely with continued exposure

Figure 4: Heat Index Conversion Chart

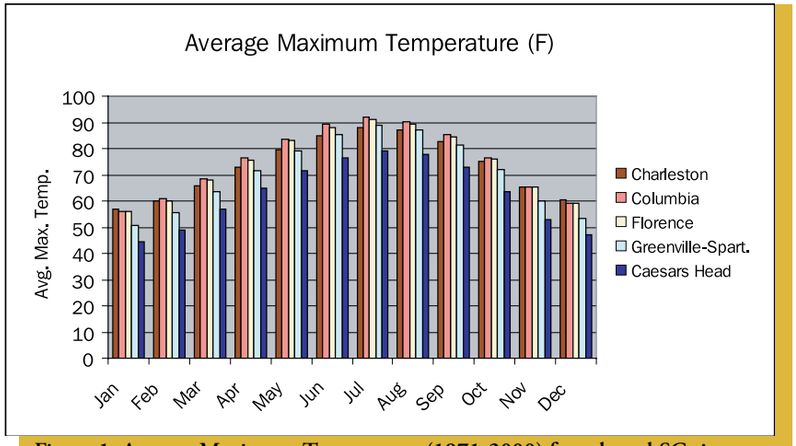


Figure 1: Average Maximum Temperature (1971-2000) for selected SC sites

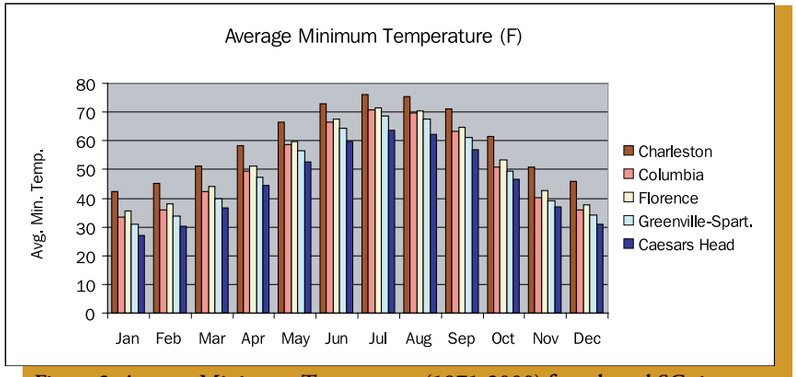


Figure 2: Average Minimum Temperature (1971-2000) for selected SC sites

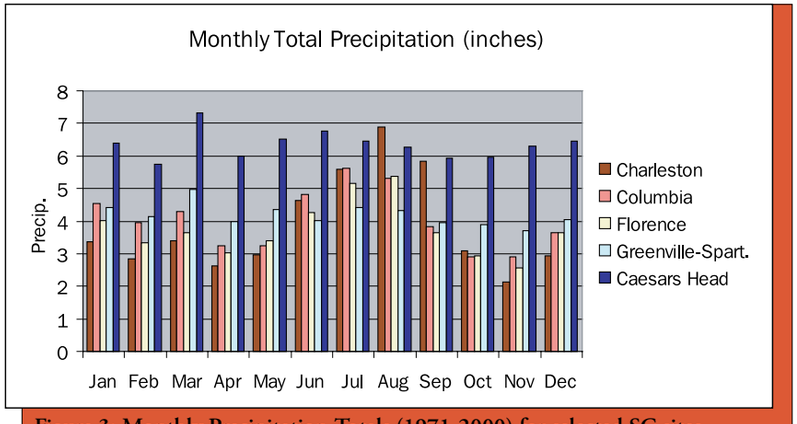


Figure 3: Monthly Precipitation Totals (1971-2000) for selected SC sites