

# *Delaware's Climate*

## THE COCORAHS 'STATE CLIMATES' SERIES

### **A First Look at the Climate of the First State**

By Kevin Brinson, Delaware State Climate Office

Delaware's climate is considered "humid temperate" and is largely influenced by its proximity to the Atlantic Ocean. There is very little in the way of topographic relief in Delaware, as only a small portion of the state is situated in the Piedmont, where elevations are typically between 300 and 400 feet above sea level. Delaware is the 2<sup>nd</sup> smallest state in the Union, and as you would expect, the long-term climate averages across Delaware do not vary significantly. The mean annual temperature ranges from 55 in the northern part of the state to 56° F over the southern portions of Delaware. Annual precipitation also varies very little, as the southern part of Delaware averages around 47 inches of precipitation each year, while the north averages around 44.

While Delaware's climate is moderated somewhat by the Atlantic Ocean in the winter, it can be influenced by extremely cold continental air masses. The lowest temperature recorded in Delaware was -17° F in January of 1893. By midsummer, the combination of the Gulf Stream's warm waters and the clockwise flow around an Atlantic high pressure area brings warm, humid days. Ironically, the warmest temperature recorded in Delaware took place at the same location as the coldest temperature recorded in Delaware: Millsboro, with a temperature of 110° F in July of 1930. The moderating influence of the Atlantic Ocean also plays a role in the length of the growing season in Delaware. Generally the growing season is between 175 and 195 days, with the season being longer the farther south and east you go in the state. Another important consequence of being a coastal state is the formation of the sea breeze in Delaware. Data collected by automated weather stations in the Delaware Environmental Observing System (DEOS) have shown temperature contrasts as great as 25° F between two locations less than a mile apart and separated only by the dune line. In most cases, the temperature contrast caused by the sea-breeze front is on the order of 10 to 15° F, with this effect occurring most often in late spring and late fall, when the land-sea contrast is greatest.

Delaware's precipitation varies little throughout the year, with most of it occurring on average in July and August. This late-summer maximum occurs primarily because of impacts from the occasional tropical system or remnants that track across the mid-Atlantic region. Delaware has never had a hurricane make landfall along its shoreline, but has had several hurricanes track across it after striking nearby states. River and stream flooding is not a regular occurrence in Delaware and is typically the result of heavy, extended periods of rain from tropical systems, fast snowmelts in the spring, or extremely localized convective precipitation occurring in highly urbanized watersheds in the northern part of the state. Coastal flooding can also result from tropical systems that pass near the Delaware Coast, but it is more typically caused by the easterly flow from nor'easters that last beyond 2 or 3 tide cycles. Delaware typically sees its first snow by early December and its last snow sometime in March; however, snow has been seen as early as October 10<sup>th</sup> (2.5 inches fell in Wilmington in 1979) and as late as April 20<sup>th</sup> (0.1 inches fell in Wilmington in 1983). On average, northern Delaware sees around 19 inches of snow each year, while southern Delaware receives around 14 inches. The heaviest snow season on record is the 2009-2010 snow season, where Wilmington saw over 6 feet of snow (72.7 inches).

For more information about the climate of Delaware please visit: <http://www.udel.edu/leathers/stclim.html>