

Summer (JJA), 2007 Conditional Temperature Forecast for Philadelphia International Airport

If the first heat wave occurs between:	The forecast mean JJA temperature is:	67% confidence interval is:	90% confidence interval is:
June 1 - June 14	75.6	74.3 – 76.8	73.5 – 77.6
June 15 - June 28	75.4	74.1 - 76.6	73.3 - 77.4
June 29 - July 12	75.2	73.9 - 76.4	73.1 - 77.2
July 13 - July 26	75.0	73.7 - 76.2	72.9 - 77.0
July 27 - August 9	74.8	73.5 - 76.0	72.7 - 76.8
August 10 - August 23	74.6	73.3 - 75.8	72.5 - 76.6
August 24 - September 6	74.4	73.1 – 75.6	72.3 - 76.4
September 7 - September 20	74.2	72.9 - 75.4	72.1 - 76.2
no heat wave	73.9	72.7 - 75.1	71.8 - 76.0

The normal summer temperature at PHL is 75.4 degrees. Summer is defined as meteorological summer, i.e., the months of June through August.

The above conditional forecast is from a multiple linear regression equation that was derived from data from 1950 through 2006 that came from Philadelphia International Airport (PHL). It was found that the combination of the Julian date of the first heat wave of the season and the mean April minimum temperature at PHL explained approximately 36 percent of the variance in mean summer temperatures.

The technique results in a specific forecast value and associated confidence intervals. So, if the first heat wave of the season begins on June 19, the forecast for the mean summer temperature is 75.4 degrees; there is a 67% chance that the actual mean summer temperature will fall between 74.1 and 76.6 degrees, and there is a 90% chance that the actual mean summer temperature will fall between 73.3 and 77.4 degrees.

A heat wave is defined as at least three consecutive days with maximum temperatures of at least 90 degrees Fahrenheit. The likelihood of no heat wave occurring at PHL during the warm season, based on data going back to 1943, is approximately 10%.