

## Summer (June through August), 2008 Conditional Temperature Forecast for Philadelphia International Airport (PHL)

If the first heat wave occurs:	The forecast mean summer temperature is:	67% confidence interval is:	90% confidence interval is:
June 1 - June 15	76.9	75.7 - 78.1	74.8 - 78.9
June 16 - June 30	76.7	75.4 - 77.9	74.6 - 78.7
July 1 - July 16	76.4	75.2 - 77.7	74.4 - 78.5
July 17 - July 31	76.2	75.0 - 77.4	74.2 - 78.3
Aug 1 - Aug 16	76.0	74.8 - 77.2	73.9 - 78.0
Aug 17 - Aug 31	75.8	74.6 - 77.0	73.7 - 77.8
Sept 1 - Sept 15	75.6	74.4 - 76.8	73.5 - 77.6
No heat wave	75.2	74.0 - 76.4	73.2 - 77.3

All forecast values are given in degrees Fahrenheit. 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 1966 through 2007 that came from 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 explains approximately 35 percent of the variance in the mean summer temperature.

The technique results in a specific forecast value and associated confidence intervals. So, if the first heat wave of the season begins on June 23, the forecast of the mean summer temperature is 76.7 degrees; there is a 67% chance that the actual mean summer temperature will fall between 75.4 and 77.9 degrees, and there is a 90% chance that the actual mean summer temperature will fall between 74.6 and 78.7 degrees.

A heat wave is defined as at least three consecutive days with maximum temperatures of at least 90 degrees. Based on data going back to 1950, the likelihood of no heat wave occurring during the summer season is approximately 10%.