

Summer (June through August), 2012 Final Temperature Forecast for Philadelphia International Airport (PHL)

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|---------------------------------------------|--------------------------------|--------------------------------|
| The forecast mean summer temperature is: | 67% confidence interval is: | 90% confidence interval is: |
| 76.5 | 75.3 – 77.6 | 74.6 – 78.3 |

The forecast value is given in degrees Fahrenheit. The normal summer temperature at PHL is 76.0 degrees. Summer is defined as meteorological summer, i.e., the months of June through August.

The above forecast is from a multiple linear regression equation that was derived from data from 1966 through 2011 that came from PHL. It was found that the combination of the Julian date of the first occurrence of 90 degrees or higher, the Julian date of the first heat wave of the season, the February through April Oceanic Nino Index (or ONI, an indication of the strength of the recent El Nino or La Nina), the March through May ONI, and the mean April minimum temperature explain approximately 51 percent of the variance in the mean summer temperature.

The technique results in a specific forecast value and associated confidence intervals. So, the forecast of the mean summer temperature is 76.5 degrees; there is a 67% chance that the actual mean summer temperature will fall between 75.3 and 77.6 degrees, and there is a 90% chance that the actual mean summer temperature will fall between 74.6 and 78.3 degrees.

For purposes of this forecast, a heat wave is defined as at least three consecutive days with maximum temperatures of at least 90 degrees.