Meteorological Winter (December through February), 2009/2010 Conditional
Temperature Forecast for Philadelphia International Airport (PHL)
in degrees Fahrenheit

If the cold snap starts between	The forecast mean winter temperature is:	67% confidence interval is:	90% confidence interval is:
December 1 - 15	33.8	31.7 – 35.9	30.2 – 37.5
December 16 - 31	34.6	32.5 – 36.7	31.0 – 38.2
January 1 - 15	35.3	33.2 – 37.4	31.7 – 38.9
January 16 - 31	36.1	34.0 – 38.2	32.5 – 39.7
February 1 - 14	36.8	34.7 – 38.9	33.2 – 40.4
February 15 - 28	37.5	35.4 – 39.6	33.9 – 41.1
No cold snap	39.3	37.2 – 41.4	35.7 – 43.0

The normal winter temperature at PHL is 34.8 degrees.

The above conditional forecast is from a multiple linear regression equation that was derived from data from 1950/51 through 2000/09 that came from PHL. It was found that the combination of the extended Julian date (beyond 365 or 366 after December 31) of the first cold snap of the season, the October mean minimum temperature and the November mean maximum temperature explained approximately 47 percent of the variance in mean winter temperatures.

The technique results in a specific forecast value and associated confidence intervals. So, if the first cold snap of the season begins on December 26, the forecast of the mean winter temperature is 34.6 degrees; there is a 67% chance that the actual mean winter temperature will fall between 32.5 and 36.7 degrees, and there is a 90% chance that the actual mean winter temperature will fall between 31.0 and 38.2 degrees.

For purposes of this forecast, a cold snap is defined as at least three consecutive days when the temperature does not exceed 35 degrees. Based on data going back to 1950/51, the likelihood of no cold snap occurring during the winter season is approximately 11%.