January Climate Highlight:

January’s Climate Highlight features an analysis that compares the dew point trend over the past few decades. Two cities, Philadelphia and Pittsburgh were chosen for this study and two different data sets were used. The first set consists of dew point data that was measured by FAA (Federal Aviation Administration) and COOP (National Weather Service Cooperative Observer Program) stations. The second set consists of dew point data from the NARR (North American Regional Reanalysis) database.

NARR is a long-term, dynamically consistent, high-resolution, high-frequency, atmospheric and land surface hydrology dataset for the North American domain. It covers the period ranging from 1979-2007.

The comparison of dew point trends over the past few decades are shown first for Pittsburgh and second Philadelphia. There is a strong correlation between the observed data and the NARR data, thus proving the reliability of the NARR data as a good proxy for actual observations.

The graphs below show that average dew points have been on the rise since the 1960s. There is a gradual increase in the monthly average dew points for Philadelphia and Pittsburgh, with the exception occurring in July and September in Pittsburgh and May in Philadelphia according to the NARR data.
Pittsburgh dew point trends over the past four decades using COOP (National Weather Service Cooperative Observer Program) and FAA (Federal Aviation Administration) data. Each graph is the monthly average for each respective month for each year from 1961 through 2005. The corresponding trend line is shown as well.

Figure 1

Average January Dew Point for PIT

Figure 2

Average February Dew Point for PIT
Figures 1-4: The trend shows an increase in the average dew point in Pittsburgh over the past five decades from January to April.
Figures 5-8: The trend shows an increase in the average dew point in Pittsburgh over the past five decades from May to August.
Figure 9

Average September Dew Point for PIT

Figure 10

Average October Dew Point for PIT
Figures 9-12: The trend shows an increase in the average dew point in Pittsburgh over the past five decades from September to December.
Pittsburgh dew point trends over the past four decades using NARR (North American Regional Reanalysis) data. Each Graph is the monthly average for each respective month for each year from 1961 through 2005. The corresponding trend line is shown as well.

**Figure 13**

Average January Dew Point for PIT

**Figure 14**

Average February Dew Point for PIT
Figures 13-16: The trend shows an increase in the average dew point in Pittsburgh over the past three decades from January to April.
Figures 17-20: The trend shows an increase in the average dew point in Pittsburgh over the past three decades in May, June, and August, but a decrease in July.
Figure 21

Average September Dew Point for PIT

Figure 22

Average October Dew Point for PIT
Figures 21-24: The trend shows an increase in the average dew point in Pittsburgh over the past three decades in October, November, and December, but a decrease in September.
Philadelphia using COOP/FAA Data

Philadelphia dew point trends over the past four decades using COOP (National Weather Service Cooperative Observer Program) and FAA (Federal Aviation Administration) data. Each Graph is the monthly average for each respective month for each year from 1961 through 2005. The corresponding trend line is shown as well.

Figure 25

Average January Dew Point for PHL

Figure 26

Average February Dew Point for PHL
Figures 25-28: The trend shows an increase in the average dew point in Philadelphia over the past five decades from January to April.
Figures 29-32: The trend shows an increase in the average dew point in Philadelphia over the past five decades from May to August.
Figures 33-36: The trend shows an increase in the average dew point in Philadelphia over the past five decades from September to December.
Philadelphia
dew point trends over the past four decades using NARR (North American Regional Reanalysis) data.

*Each Graph is the monthly average for each respective month for each year from 1961 through 2005. The corresponding trend line is shown as well.*

**Figure 37**

Average January Dew Point for PHL

**Figure 38**

Average February Dew Point for PHL
Figures 37-40: The trend shows an increase in the average dew point in Philadelphia over the past three decades from January to April.
Figure 41

Average May Dew Point for PHL

Figure 42

Average June Dew Point for PHL
Figures 41-44: Only the average May dew point shows a decrease in the trend from 1979-2007.
Figures 45-48: The trend shows an increase in the average dew point in Philadelphia over the past three decades from September to December.