

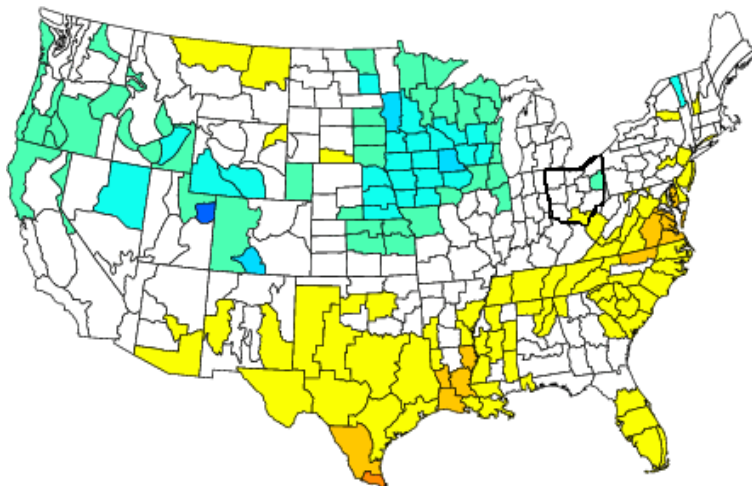
# Air Quality Summary

## Youngstown-Warren

November 1, 2007 through March 31, 2008

Overall, air quality this winter season was slightly better than 2006-07, but similar to 2005-06. In 2007-08, 16% of the days (24 days) reached Moderate AQI levels. No days reached Unhealthy for Sensitive Groups. Even though there were fewer Moderate days this year than last year, the number of Moderate days was above the 2002-07 five-year average. This winter, the Youngstown area received 11 inches of precipitation more than normal (see figure below). Rainfall is often preceded by southerly winds and a moist atmosphere. The moisture tends to enhance particle production and the southerly winds can transport pollutants into the region from the south. More days with these conditions may have contributed to the above-average number of Moderate days this year.

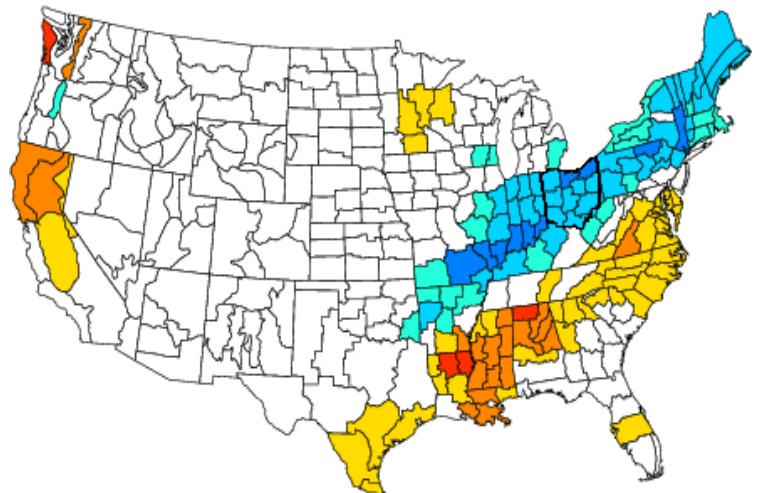
Temperature Departure from Normal  
November 2007 - March 2008



NOAA/ESRL PSD and CIRES-CDC

-6.0 -4.0 -2.0 0.0 2.0 4.0 6.0

Precipitation Departure from Normal  
November 2007 - March 2008



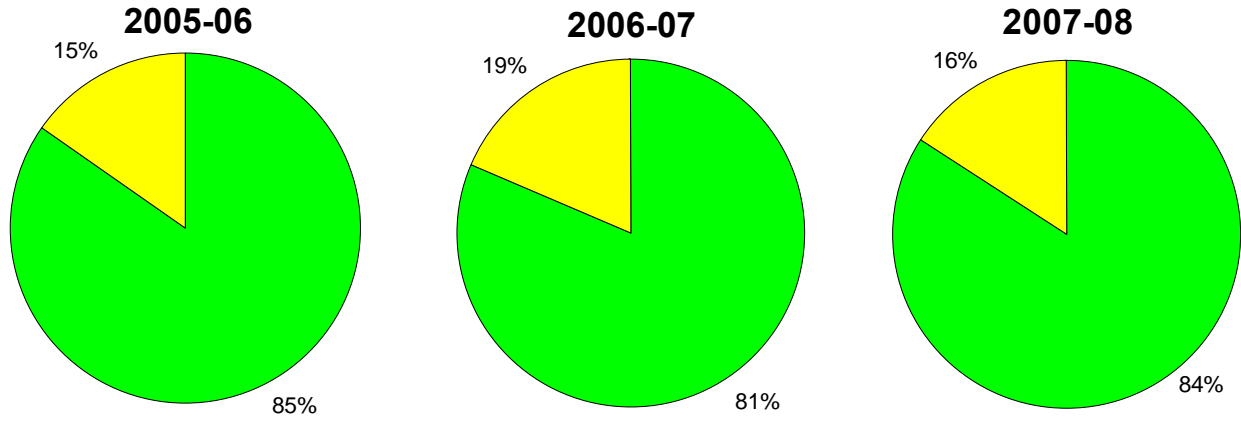
NOAA/ESRL PSD and CIRES-CDC

-12.0 -9.0 -6.0 -3.0 0.0 3.0 6.0 9.0 12.0

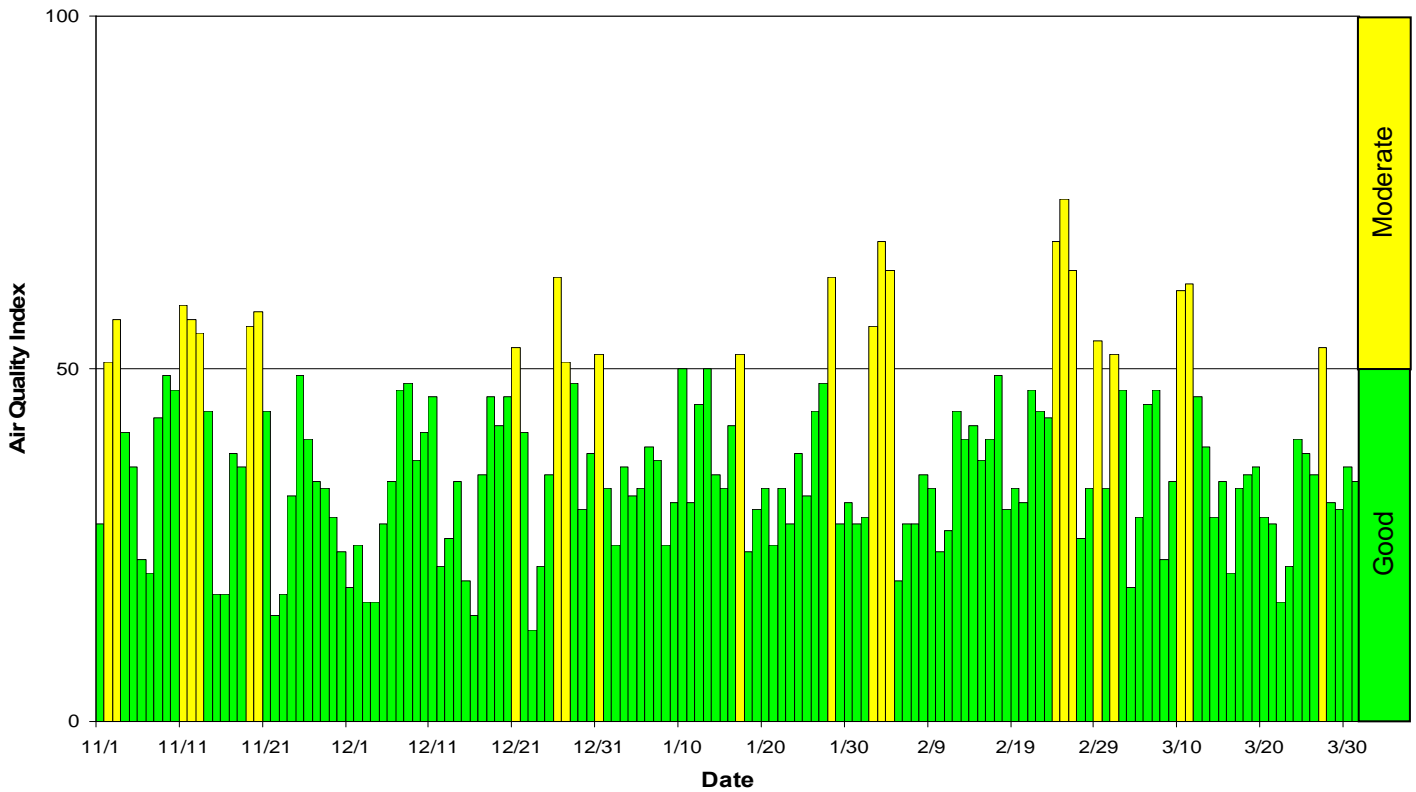
November 2007 through March 2008 average temperature and precipitation departure from climatological average (1971-2000) grouped by National Weather Service (NWS) climatological zone. As the figures above indicate, the Youngstown area experienced near-average temperatures of approximately 0.5°F below normal and precipitation amounts 11 inches above normal.

# Seasonal Summary

## Percent of Days at Each AQI Level



## Daily AQI\*



\*Highest 24-hr average observed among monitoring sites in the Youngstown region

# Highest AQI and Air Quality Advisories



## Highest AQI Days

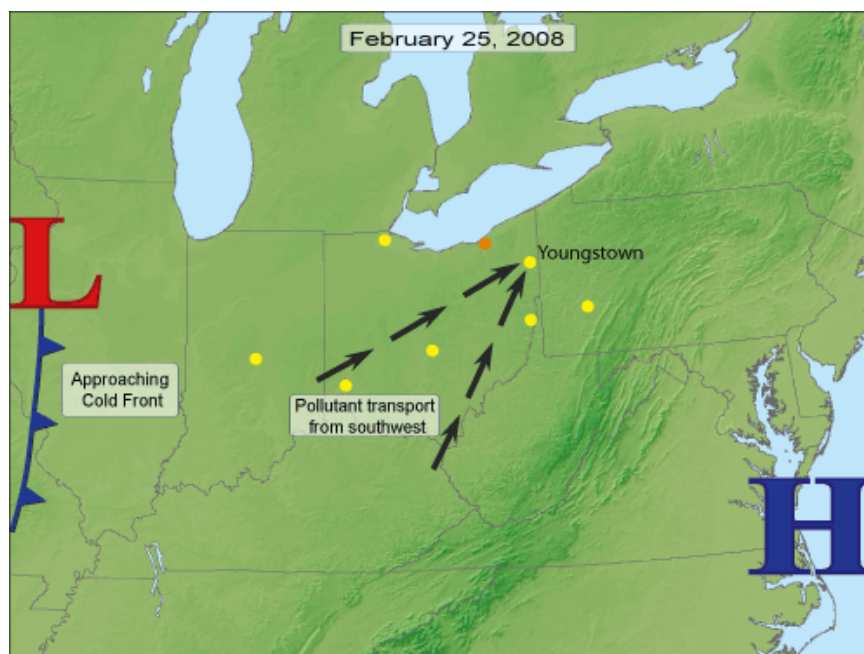
Date	AQI	Monitoring Site
2/25/2008	74	Head Start
2/03/2008	68	Head Start
2/24/2008	68	Warren-Draper
2/04/2008	64	Warren-Draper
2/26/2008	64	Head Start

0 - 50	Good
51 - 100	Moderate
101 - 150	Unhealthy for Sensitive Groups
151 - 200	Unhealthy
201 - 300	Very Unhealthy

No Air Quality Advisory Days were issued between November 1, 2007 and March 31, 2008. The two particle pollution events that reached the highest AQI levels of the season were both in February.

The first episode took place February 3-4. On February 3, high pressure east of Ohio produced light southerly winds in the Mahoning Valley. The light winds limited pollutant dispersion, allowing the pollutants to build up near the surface. On February 4, moderate southeasterly winds transported moisture and pollutants into the region. Therefore, AQI levels were Moderate both days.

The second episode occurred on February 24-26. On February 24, surface high pressure was located over Ohio, limiting pollutant dispersion and trapping pollutants near the ground. On February 25 (see figure below), the high pressure moved east and a low pressure system was approaching from the west, producing moderate southwesterly winds in the Youngstown area. These conditions transported moisture and pollutants into the region, enhancing particle production. On February 26, the low pressure system moved through the Mahoning Valley in the afternoon, dispersing pollutants; however, high pollutant carryover from the morning kept AQI levels Moderate.

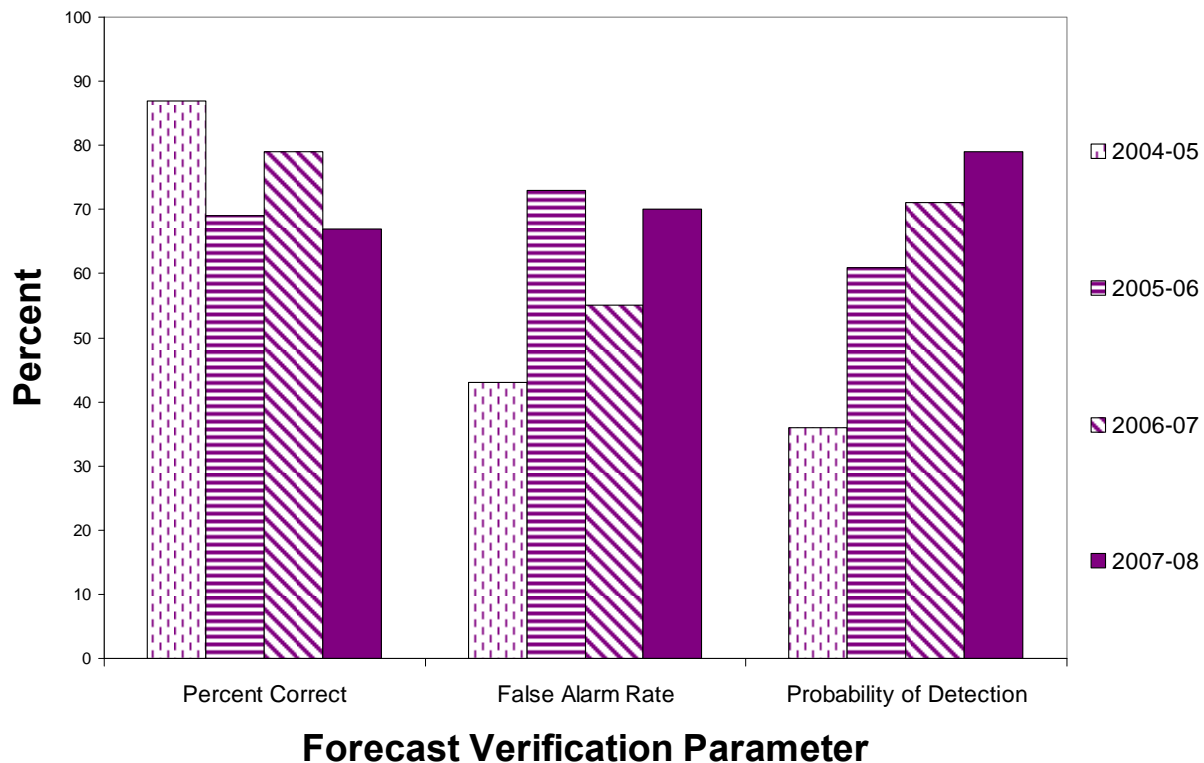


# Next-day Forecast Performance

Current, next-day, and extended AQI forecasts are provided daily for the Youngstown area. A statistical summary of next-day forecasting performance is provided using a variety of measures, which are described at the bottom of this page. Statistics are calculated based on how forecasted AQI levels compare with observed AQI levels for the Good-Moderate threshold. Values for previous years are included for comparison.

The figure below shows that the Probability of Detection has improved each year and was nearly 80% in the 2007-08 season. This level of accuracy indicates that public health was protected on high pollution days. This protection of public health did have a consequence of a higher-than-average false alarm rate.

## Next-day Forecast Statistics Nov 1 - Mar 31 for Good-Moderate AQI Threshold



### Statistical Measure

Percent Correct (PC): Shows percent of all forecasts that matched observations.

False Alarm Rate (FAR): Shows the percent of cases for which a forecast of high pollution (at or above the threshold) was wrong.

Probability of Detection (POD): Indicates the ability to correctly predict high-pollution events (i.e., at or above a certain threshold).