



2014 Air Quality Index Summary

New Jersey Department of Environmental Protection

WHAT IS THE AIR QUALITY INDEX (AQI)?

The Air Quality Index (AQI) is a national air quality rating system based on the National Ambient Air Quality Standards (NAAQS). Generally, an index value of 100 is equal to the primary, or health-based, NAAQS for each pollutant. This allows for a direct comparison of each of the pollutants used in the AQI. These pollutants are ozone, particulate matter, nitrogen dioxide, sulfur dioxide, and carbon monoxide. Although air concentrations of pollutants have been dropping over the past few years, the U.S. Environmental Protection Agency (USEPA) must periodically review the NAAQS to make sure that they are protective of public health in response to new research. The nitrogen dioxide and sulfur dioxide NAAQS were revised in 2010, and the ozone NAAQS was most recently revised in 2008. It is currently under review.

The AQI rating for a reporting region is equal to the highest rating recorded for any pollutant within that region. In an effort to make the AQI easier to understand, a descriptive rating and a color code based on the numerical rating are used (see Table 1). For more information on the AQI, visit EPA's web site at www.airnow.gov.

Every morning a forecast for the current and following day is prepared by the New Jersey Department of Environmental Protection (NJDEP) using the AQI format. The forecast is provided to USEPA and is disseminated through the Enviroflash system to those who subscribe to receive air quality forecast and alert emails (www.enviroflash.info). Anyone can view the forecast and current air quality conditions at USEPA's AirNow website or on NJDEP's air monitoring webpage (www.njaqinow.net).

For the purposes of the AQI, the state is divided into 9 regions (see Figure 1). Table 2 shows the monitoring sites and the parameters used in each reporting region to calculate the AQI values.

Table 1
Air Quality Index

Numerical AQI Rating	Descriptive Rating	AQI Color Code
0-50	Good	Green
51-100	Moderate	Yellow
101-150	Unhealthy for Sensitive Groups	Orange
151-200	Unhealthy	Red
201-300	Very Unhealthy	Purple

Figure 1
Air Quality Index Regions

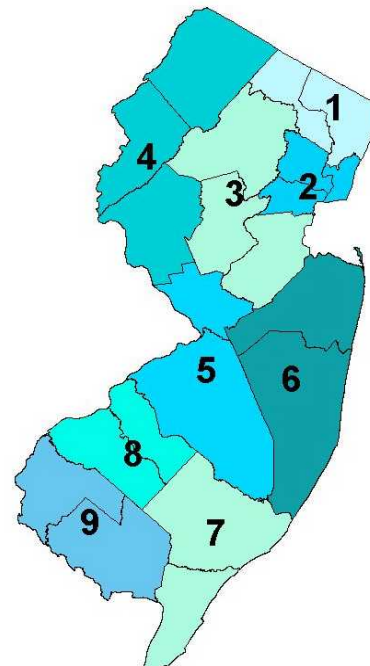
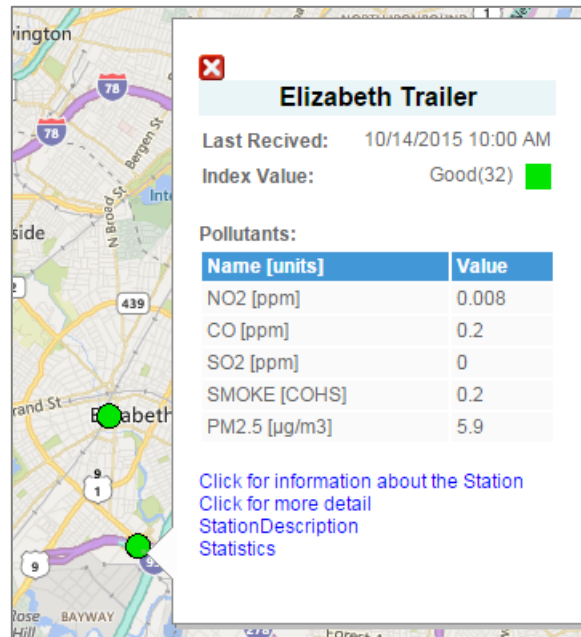
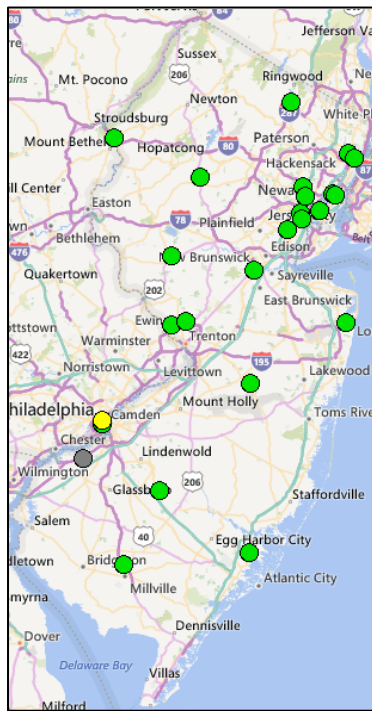


Table 2
Pollutants Monitored in Each Air Quality Index Reporting Region
in New Jersey – 2014

Reporting Region	Monitoring Site	Ozone	Particulate Matter	Sulfur Dioxide	Nitrogen Dioxide	Carbon Monoxide
1. Northern Metropolitan	Fort Lee Near Road		√		√	√
	Leonia	√				
	Ramapo	√				
2. Southern Metropolitan	Bayonne	√		√	√	
	East Orange				√	√
	Elizabeth		√	√		√
	Elizabeth Lab		√	√	√	√
	Jersey City		√	√		√
	Jersey City Firehouse		√			
	Newark Firehouse	√	√	√	√	√
	Rahway		√			
3. Suburban	Chester	√		√	√	
	New Brunswick		√			
	Rutgers University	√			√	
4. Northern Delaware Valley	Columbia WMA	√	√	√	√	
	Flemington	√	√			
5. Central Delaware Valley	Ewing		√			
	Rider University	√				
6. Northern Coastal	Colliers Mills	√				
	Monmouth University	√				
7. Southern Coastal	Brigantine	√	√	√		
8. Southern Delaware Valley	Ancora State Hospital	√				
	Camden Spruce St.	√	√	√	√	√
	Clarksboro	√				
	South Camden		√			
9. Delaware Bay	Millville	√	√		√	

On days when the air quality is expected to reach the unhealthy for sensitive groups range or above, cautionary statements are provided as part of the forecast. These air quality alerts are issued through Enviroflash emails, are displayed on the AirNow and NJDEP air monitoring websites, and can also be viewed on the National Weather Service page for the Philadelphia/Mount Holly area (www.erh.noaa.gov/er/phi/). Maps, charts and photos of the air quality information and sites from which data is collected are available on the NJDEP air monitoring web site as well, as shown in Figure 2 below:

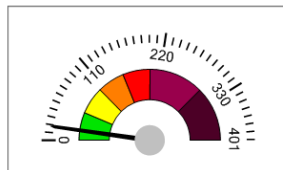
Figure 2
Examples of Information Available on NJDEP's Air Monitoring Website



Station Information



Elizabeth Trailer



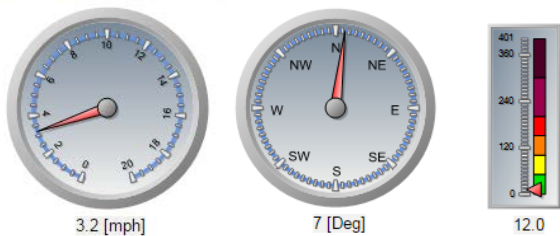
Download API
 Index Value : 18
 Pollutants : NO2, CO, SO2, SMOKE, PM 2.5
 Dominant Pollution : SMOKE

ViewStationInfo

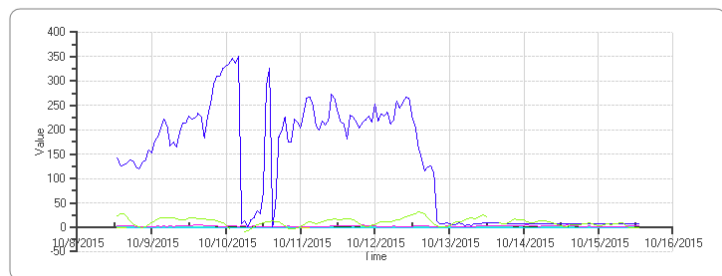
Monitors		
<input checked="" type="checkbox"/>	Monitor	Value
<input checked="" type="checkbox"/>	CO[ppm]	0.2
<input checked="" type="checkbox"/>	SMOKE[COHS]	0.19
<input checked="" type="checkbox"/>	SO2[ppm]	0.000
<input checked="" type="checkbox"/>	NO2[ppm]	0.008
<input checked="" type="checkbox"/>	NO[ppm]	0.010
<input checked="" type="checkbox"/>	WSPD[mph]	3.3
<input checked="" type="checkbox"/>	WDIR[Deg]	8
<input checked="" type="checkbox"/>	PM2.5[µg/m3]	1.7

Real Time Condition: Elizabeth Trailer Last Received: 10/14/2015 1:00 PM Current Monitor: All Monitors

Wind Speed Wind Direction Index



Change Grid / Graph



Legend: CO[ppm], SMOKE[COHS], SO2[ppm], NO2[ppm], NO[ppm], WSPD[mph], WDIR[Deg], PM2.5[µg/m3]

2014 AQI SUMMARY

A summary of the AQI ratings for New Jersey in 2014 is presented in the pie chart in Figure 3 below. In 2014, there were 181 “Good” days, 169 were “Moderate,” 15 were rated “Unhealthy for Sensitive Groups,” zero were considered “Unhealthy,” and zero were rated “Very Unhealthy.” This indicates that air quality in New Jersey is considered good or moderate most of the time, but that pollution is still bad enough to adversely affect some people on about one day in twenty-four. This is an improvement from last year when one in nineteen days was unhealthy for sensitive groups. It is also the second year in a row to have no days exceed the unhealthy limit for the general population. The only previous year to not have an exceedance for the general population was 2009, which was an unusually cool and wet summer accounting for much lower concentrations of pollutants. Table 3 lists the dates when the AQI reached the “Unhealthy for Sensitive Groups” threshold at any monitoring location and shows which pollutant(s) were in that range or higher. Figure 4 shows the AQI ratings for the year broken down by AQI region.

Not all regions have 365 valid days of reported air quality index values. Both the Northern Coastal and Northern Metropolitan regions had several months without AQI values because the ozone monitors in these regions operate seasonally, typically from March to October. Total days without AQI values are reported by region Figure 5.

Figure 3
2014 Air Quality Summary by Days

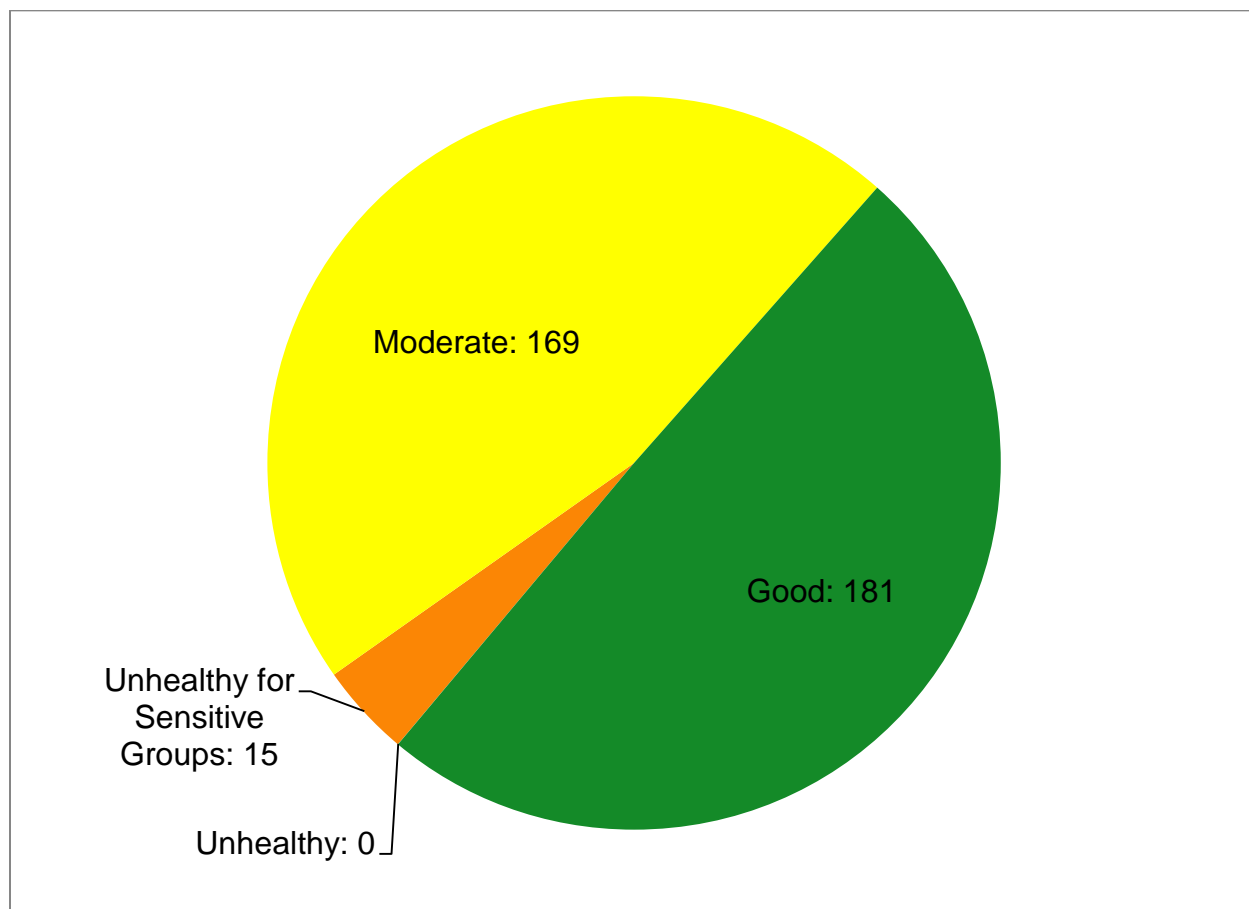


Table 3
Air Quality Index (AQI) Days Over 100 During 2014

Date	Highest Location	Highest AQI Value	Highest Pollutant	Highest Rating	All Pollutant(s) with AQI>100	Total No. of Sites with AQI>100
1/5/2014	Newark Fire House	106	PM	USG	PM	3
1/10/2014	Elizabeth Trailer	129	PM	USG	PM	1
2/1/2014	Columbia	103	PM	USG	PM	1
3/4/2014	Columbia	113	SO ₂	USG	SO ₂	1
4/1/2014	Columbia	102	SO ₂	USG	SO ₂	1
4/2/2014	Columbia	122	SO ₂	USG	SO ₂	1
4/7/2014	New Brunswick	115	PM	USG	PM	1
5/12/2014	Columbia	113	SO ₂	USG	SO ₂	1
5/22/2014	Columbia	102	SO ₂	USG	SO ₂	1
5/27/2014	Monmouth University	103	O ₃	USG	O ₃	1
7/7/2014	Rutgers University	113	O ₃	USG	O ₃	1
8/1/2014	Fort Lee Near Road	106	NO ₂	USG	NO ₂	1
8/14/2014	Fort Lee Near Road	130	NO ₂	USG	NO ₂	1
8/17/2014	Elizabeth Trailer	116	SO ₂	USG	SO ₂	1
8/27/2014	Rutgers University	145	O ₃	USG	O ₃	7

Ratings

USG – Unhealthy for sensitive groups

Pollutants

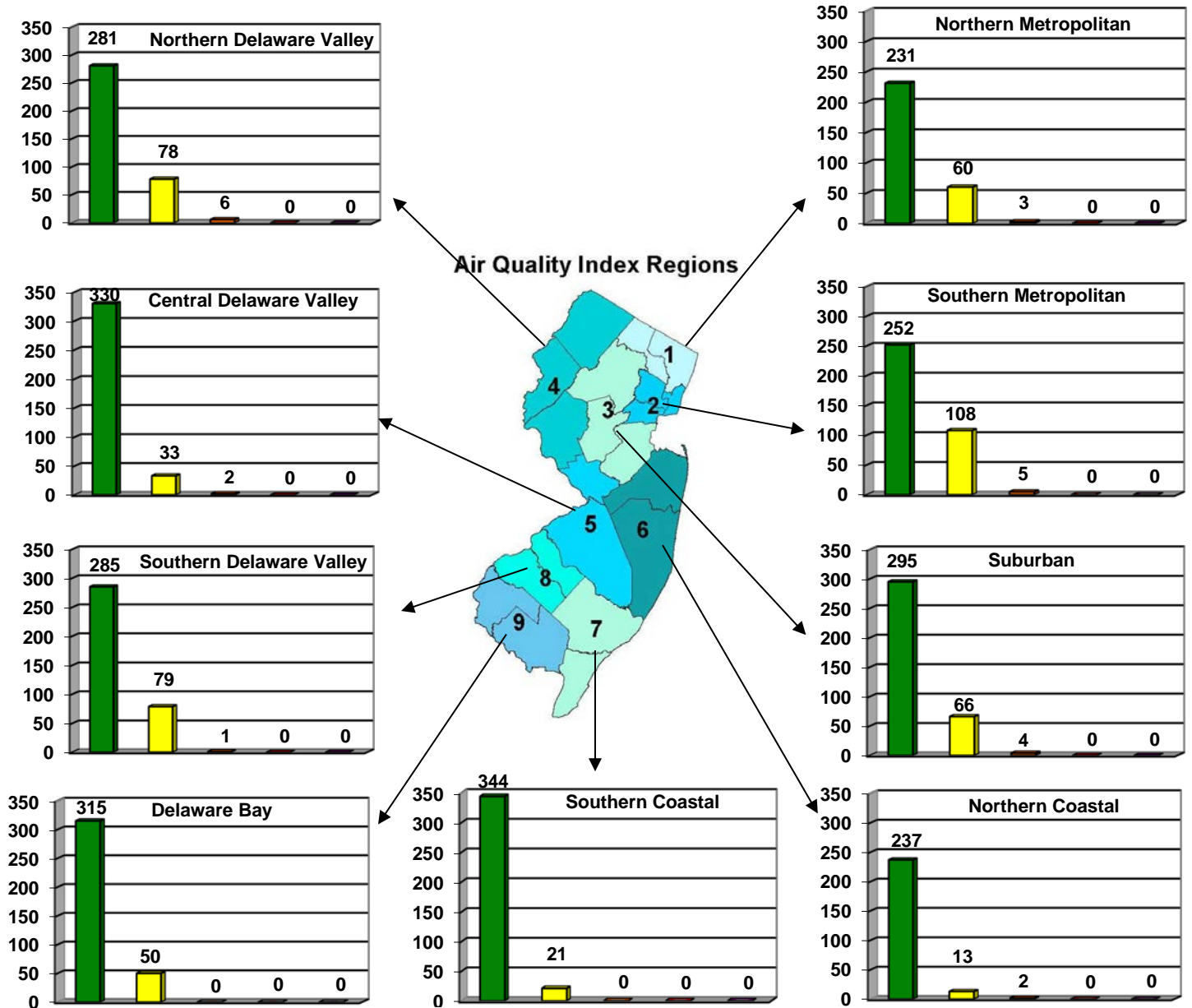
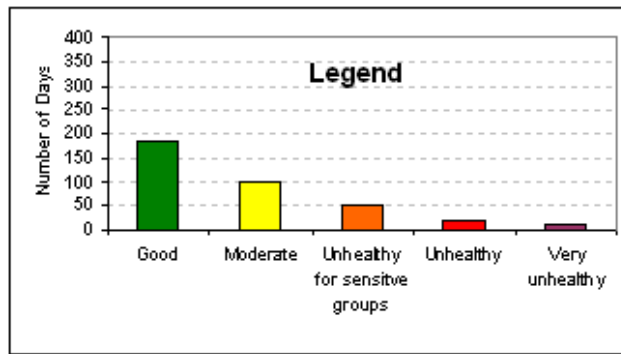
PM – Particulate matter

SO₂ – Sulfur dioxide

O₃ – Ozone

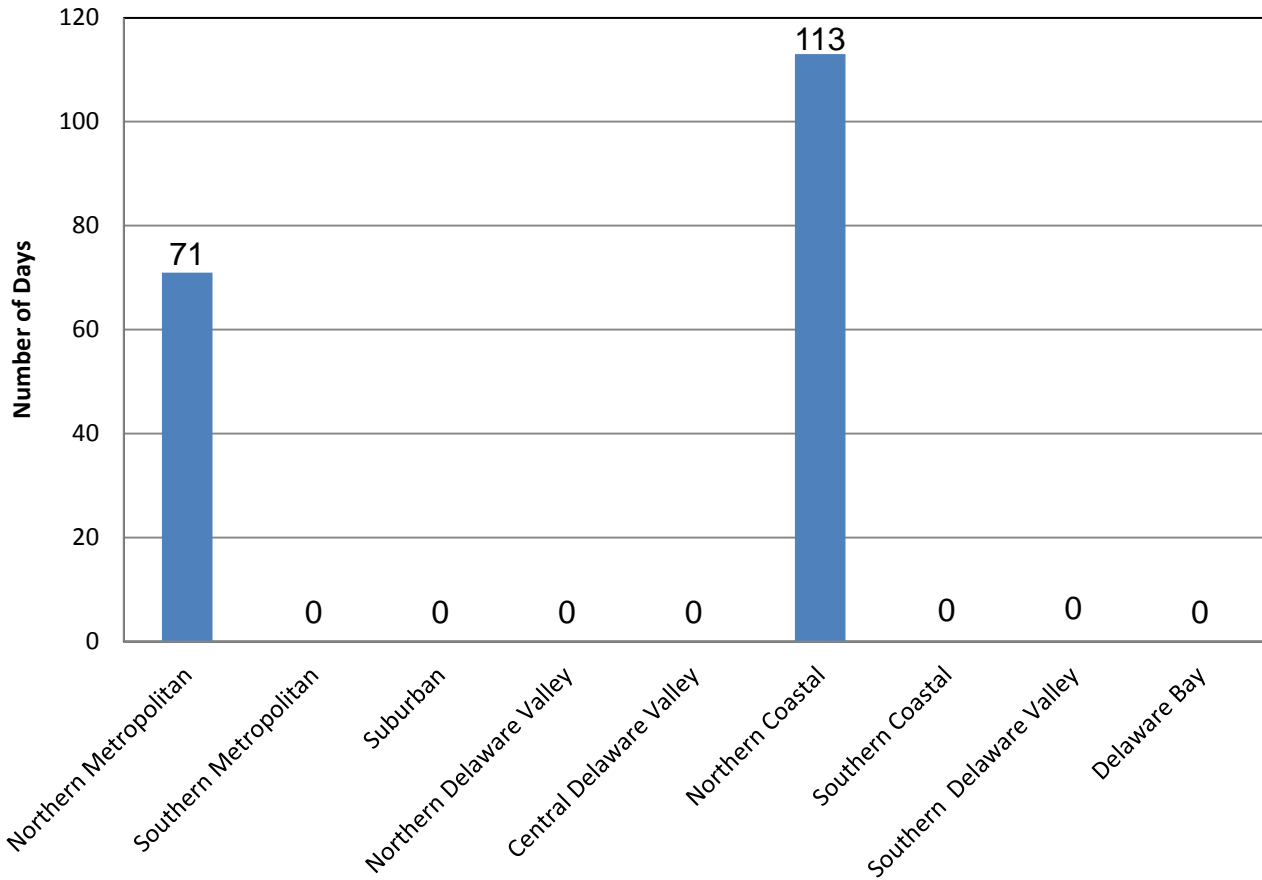
NO₂ – Nitrogen dioxide

Figure 4
 2014 Air Quality Index Summary
 Number of Days by Reporting Region ^a



^a Some days there was no index available (see Figure 5).

Figure 5
Days in 2014 Without Index Values
by Reporting Region



REFERENCES

Air Quality Index, A Guide to Air Quality and Your Health, USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC, June 2000, EPA-454/R-00-005, www.epa.gov/airnow/aqi_ci.pdf

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