2008 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 (carbon monoxide, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide). The ozone NAAQS were revised in 2008 because EPA had determined that the old standard of 0.08 parts per million (ppm) maximum daily eight-hour average was not sufficiently protective of public health. On March 12, 2008 they set a revised standard of 0.075 ppm maximum daily 8-hour average, so the AQI values for ozone are based on this new standard for much of the year. 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 http://airnow.gov/.

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

Each weekday morning a forecast is prepared using the AQI format. The forecast is provided to participating radio and television stations. Each afternoon, an air quality update, which includes the current air quality information and a forecast for the following day, is issued to various newspapers.

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

Figure 1

Air Quality Index Regions

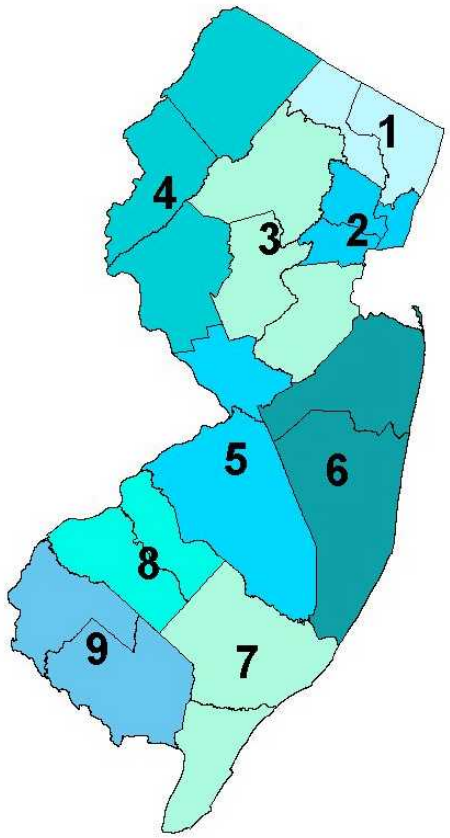


Table 2

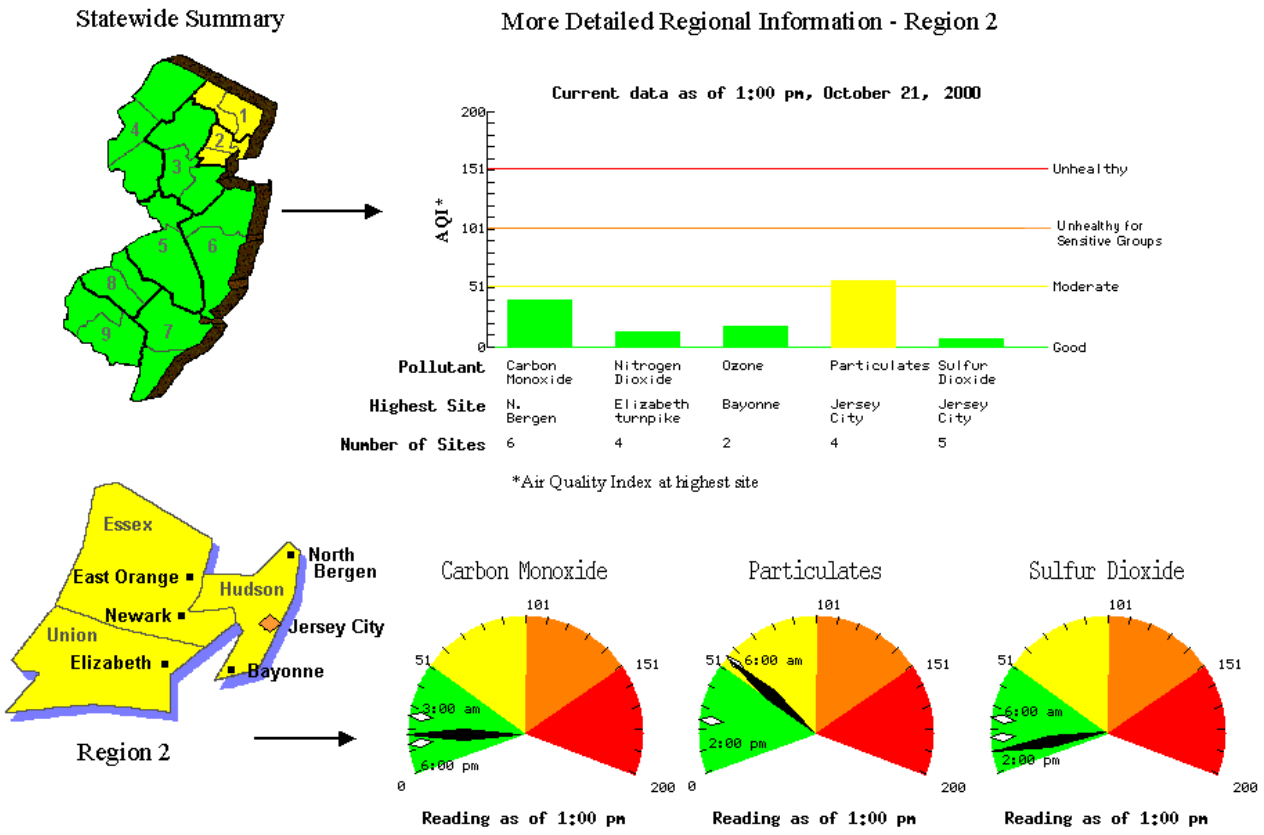
Pollutants Monitored According to Air Quality Index Reporting Region - 2008

CO - Carbon Monoxide
SO_2 - Sulfur Dioxide
PM - Particulate Matter
O_3 - Ozone
NO_2 - Nitrogen Dioxide

Reporting Region	Monitoring Site	CO	SO_2	PM	O_3	NO_2
1. Northern Metropolitan	Fort Lee	X	---	X	---	---
	Hackensack	X	X	X	---	---
	Leonia	---	---	---	X	X
	Ramapo	---	---	---	X	---
2. Southern Metropolitan	Bayonne	---	X	---	X	X
	East Orange	X	---	---	---	X
	Elizabeth Lab	X	X	X	---	X
	Jersey City	X	X	X	---	---
	Jersey City Firehouse	---	---	X	---	---
	Rahway	---	---	X	---	---
3. Suburban	Chester	---	X	---	X	X
	Morristown	X	---	X	---	---
	New Brunswick	---	---	X	---	---
	Perth Amboy	X	X	X	---	---
	Rutgers University	---	---	---	X	X
4. Northern Delaware Valley	Flemington	---	---	X	X	---
5. Central Delaware Valley	Burlington	X	X	X	---	---
	Rider University	---	---	---	X	X
6. Northern Coastal	Colliers Mills	---	---	---	X	---
	Freehold	X	---	X	---	---
	Monmouth University	---	---	---	X	---
7. Southern Coastal	Brigantine	---	X	X	X	---
8. Southern Delaware Valley	Ancora State Hospital	X	X	---	X	---
	Camden Lab	X	X	X	X	X
	Clarksboro	---	X	---	X	---
	South Camden	---	---	X	---	---
9. Delaware Bay	Millville	---	X	X	X	X

Along with the forecast, cautionary statements are provided for days when the air quality is expected to be unhealthy. A weekday air quality forecast map, introduced during the 1996 ozone season, is televised on New Jersey Network's (NJN) TV News Broadcast. A web page was also created in 1996 to show current air quality levels. This page can be accessed at the following internet address: http://www.state.nj.us/dep/airmon. Some examples of the air quality information available on our web site are shown in Figure 2 below:

Figure 2
Examples of NJDEP's Air Monitoring Website



2008 AQI SUMMARY

A summary of the AQI ratings for New Jersey in 2008 is presented in the pie chart to the right. In 2008 there were 149 "Good" days, 177 were "Moderate", 37 were rated "Unhealthy for Sensitive Groups", 2 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 nine. 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 (AQI data was not available for every day therefore some of the regions total day count does not add up to 365).

Figure 3
Air Quality Summary by Days

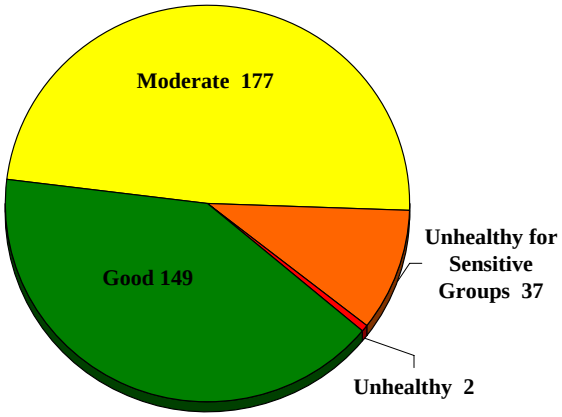


Table 3
Air Quality Index (AQI) Exceedances of 100 During 2008

Ratings

USG - Unhealthy for Sensitive Groups
UH - Unhealthy
VUH - Very Unhealthy

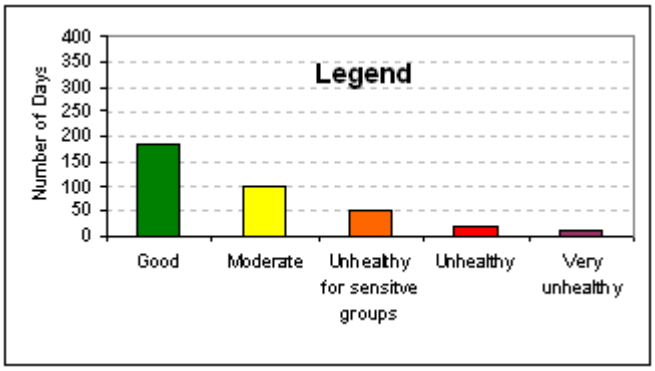
Pollutants

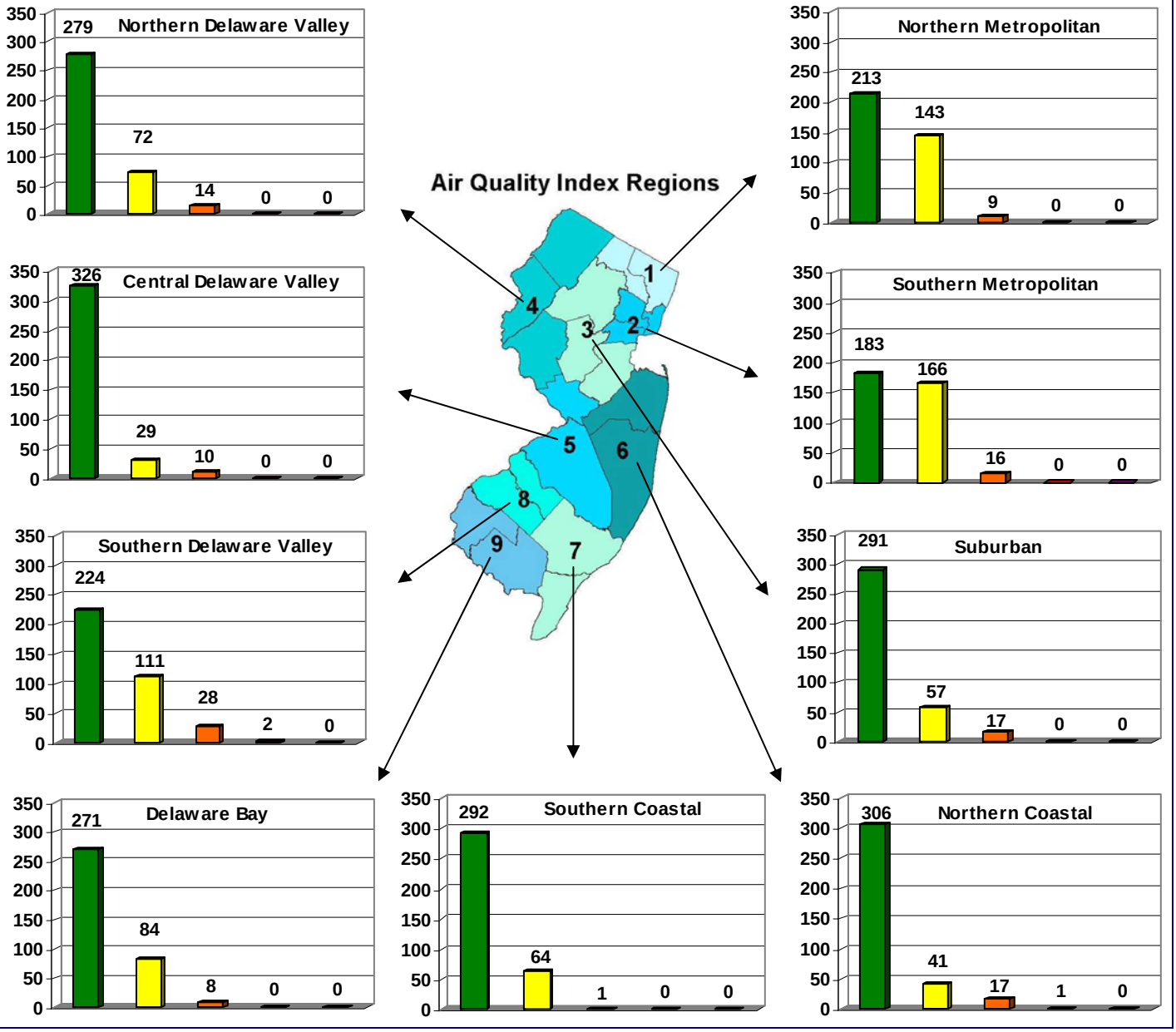
PM - Fine Particle Matter (10 Sites Monitored)
O3 - Ozone (14 Sites Monitored)

* Number in parentheses () indicates the total number of ozone and $PM_{2.5}$ sites exceeding 100 on a given day

Date	Highest Location	Highest AQI Value	Highest Pollutant	Highest Rating	Pollutant(s) with AQI above 100 *	
January 07	Jersey City Firehouse	104	PM	USG		PM(1)
April 18	Chester	127	O3	USG	O3 (6)	
April 19	Clarksboro	135	O3	USG	O3 (8)	
May 07	Ancora S.H. / Chester	101	O3	USG	O3 (2)	
May 30	Flemington	127	O3	USG	O3 (3)	
June 07	Colliers Mills	119	O3	USG	O3 (2)	PM(1)
June 09	Colliers Mills	124	O3	USG	O3 (5)	
June 10	Rider University	150	O3	USG	O3 (10)	PM(1)
June 11	Ancora State Hospital	101	O3	USG	O3 (1)	
June 12	Ancora State Hospital	119	O3	USG	O3 (5)	
June 13	Flemington	116	O3	USG	O3 (3)	
June 14	Camden	145	O3	USG	O3 (6)	PM(2)
June 16	Rutgers University	111	O3	USG	O3 (1)	
June 21	Clarksboro	119	O3	USG	O3 (2)	
June 23	Fort lee	114	PM	USG		PM(2)
June 26	South Camden	108	PM	USG		PM(2)
June 27	Monmouth University	127	O3	USG	O3 (3)	
July 03	Rutgers University	135	O3	USG	O3 (8)	
July 05	South Camden	107	PM	USG		PM(1)
July 06	South Camden	110	PM	USG		PM(1)
July 08	Leonia	124	O3	USG	O3 (5)	
July 11	Clarksboro	114	O3	USG	O3 (1)	
July 12	Flemington	124	O3	USG	O3 (4)	
July 15	Bayonne	109	O3	USG	O3 (3)	
July 16	Clarksboro	147	O3	USG	O3 (9)	PM(1)
July 17	Clarksboro	164	O3	UH	O3 (11)	PM(1)
July 18	Colliers Mills	161	O3	UH	O3 (12)	PM(2)
July 19	Rutgers University	104	O3	USG	O3 (1)	
July 20	Jersey City Firehouse	106	PM	USG		PM(1)
July 21	Ancora State Hospital	101	O3	USG	O3 (1)	
July 22	Colliers Mills	124	O3	USG	O3 (5)	
July 28	South Camden	110	PM	USG		PM(1)
July 29	Colliers Mills	137	O3	USG	O3 (4)	PM(2)
July 30	Flemington	132	O3	USG	O3 (4)	PM(2)
July 31	South Camden	119	PM	USG		PM(2)
August 01	Monmouth University	106	O3	USG	O3 (1)	
August 06	South Camden	103	PM	USG		PM(1)
August 18	Colliers Mills	101	O3	USG	O3 (1)	
September 04	Flemington	140	O3	USG	O3 (7)	

Figure 4
2008 Air Quality Index Summary
Number of Days by Reporting Region





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