Ozone National Ambient Air Quality Standard Health Exceedances on June 12, 2025

Exceedance Locations and Levels

On Thursday, June 12, 2025, there were ten (10) exceedances in New Jersey of the National Ambient Air Quality Standard (NAAQS) for ozone (daily maximum 8-hour average of 70 ppb). See Table 1.

Table 1. New Jersey Ozone Concentrations on 6/12/2025

Site		8-Hr Maximum Average (ppb)
1	Ancora	74
2	Bayonne	66
3	Brigantine	59
4	Chester	71
5	Clarksboro	78
6	Colliers Mills	87
7	Columbia	60
8	Flemington	72
9	Leonia	68
10	Millville	73
11	Monmouth University	80
12	Ramapo	59
13	Rider University	77
14	Rutgers University	66
15	South Camden	72
16	Washington Crossing*	75

*The Washington Crossing station is operated and maintained by EPA as part of the nationwide Clean Air Status and Trends Network (CASTNET).

From the out-of-state stations within New Jersey's ozone nonattainment areas, there were twenty-four (24) exceedances of the ozone NAAQS in all neighboring states. See Table 2.

Table 2. Ozone Concentrations at Out-of-State Monitoring Stations in New Jersey's Ozone Nonattainment Areas on 6/12/2025

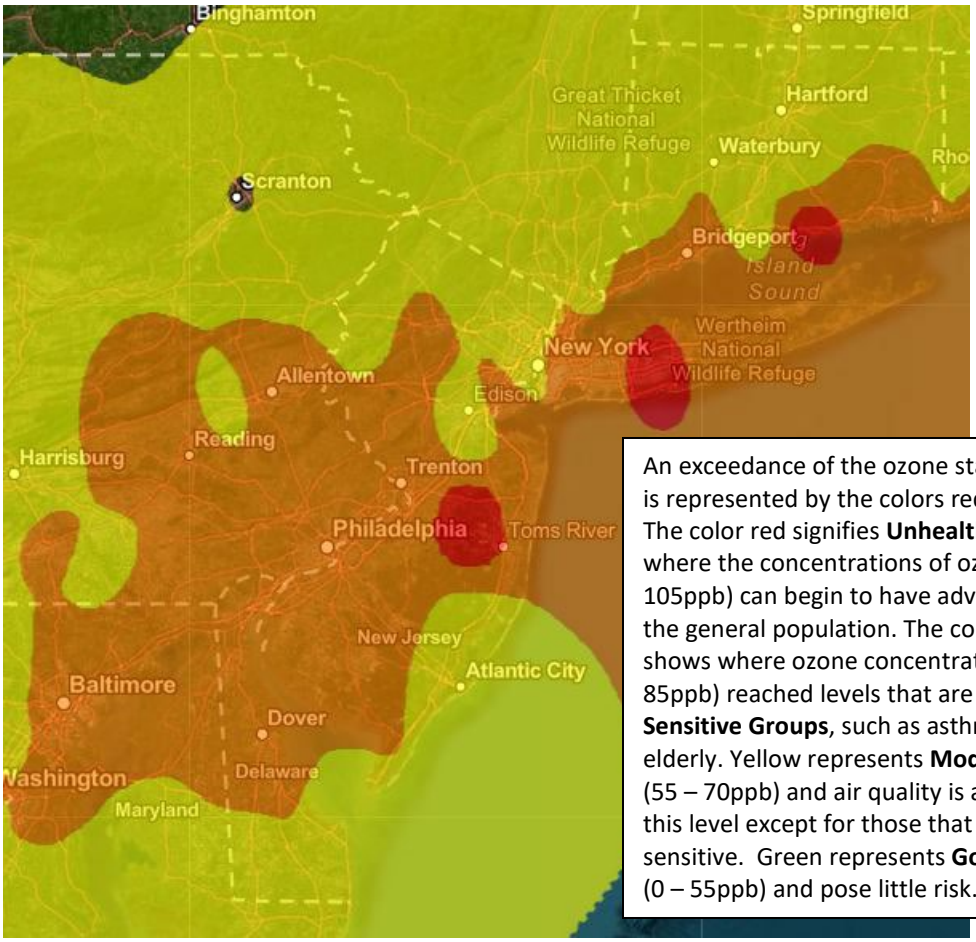
STATE	STATION	Daily Maximum 8-Hr Average (ppb)
CT	Danbury	64
CT	Greenwich	72
CT	Madison-Beach Road	86
CT	Middletown-CVH-Shed	65
CT	New Haven	64
CT	Stratford	80
CT	Westport	71
DE	BCSP (New Castle Co.)	75
DE	BELLFNT2 (New Castle Co.)	78
DE	KILLENS (Kent Co.)	77
DE	LEWES (Sussex Co.)	67
DE	LUMS 2 (New Castle Co.)	80
DE	MLK (New Castle Co.)	78
DE	SEAFORD (Sussex Co.)	66
MD	Fair Hill	79
NY	Babylon	87
NY	Bronx - IS52	75
NY	CCNY	70
NY	Flax Pond	75
NY	Fresh Kills	74
NY	Holtsville	85
NY	Pfizer Lab	70
NY	Queens	85
NY	Riverhead	75
NY	Rockland Cty	60
NY	White Plains	64
PA	BRIS (Bucks Co.)	80
PA	CHES (Delaware Co.)	76
PA	NEWG (Chester Co.)	80
PA	NORR (Montgomery Co.)	80
PA	LAB (Philadelphia Co.)	79
PA	NEA (Philadelphia Co.)	72
PA	NEW (Philadelphia Co.)	84
	TOTAL EXCEEDANCES	24

The number of days in 2025 on which exceedances of the ozone NAAQS were recorded for all the states within New Jersey's ozone nonattainment areas is summarized in Table 3.

Table 3. Number of Days Ozone NAAQS was Exceeded in NJ's Nonattainment Areas in 2025.

STATE	# of Days NAAQS was Exceeded January 1 – June, 2025 NAAQS = 70 ppb
Connecticut	7
Delaware	2
Maryland	1
New Jersey	4
New York	4
Pennsylvania	3

Figure 1. Ozone Air Quality Index for June 12, 2025



Source: www.airnow.gov

For ozone terminology definitions see NJDEP Air Quality Planning's Glossary and Acronyms webpage: https://www.nj.gov/dep/airmon/glossary.html

Weather

On Thursday June 12th, widespread ozone exceedances were observed across the nonattainment area, with isolated areas in central New Jersey, Long Island NY, and the Connecticut coastline reaching the Unhealthy category. Broad high pressure situated over the Mid-Atlantic and southeastern U.S. allowed for sunny skies, high temperatures in the upper-80s to low-90s, and a light west-southwest flow across New Jersey. The region was also sandwiched between two air masses as a stalled frontal boundary was noted off the Mid-Atlantic coast while a weak cold front pushed in from the northwest, allowing for stagnant air and a buildup of localized pollutants. Additionally, the presence of lingering diffuse Canadian wildfire smoke across the Northeastern U.S. may have aided in enhanced ozone levels observed during this timeframe. These conducive meteorological conditions ultimately lead to widespread exceedances of the ozone NAAQS across Maryland, Delaware, Pennsylvania, New Jersey, New York, and Connecticut.

Where Did the Air Pollution that Caused Ozone Come From?

Figures 2, 3, and 4 show the back trajectories of different wind heights for the monitored exceedance(s) on this day. The figures illustrate where the air came from during the 48 hours preceding the 8-hour ozone standard exceedances. A transport analysis is provided with each figure shown below along with a map of the National Air Quality Index for the previous day (Figure 5). The monitoring station(s) that were chosen to model back trajectories are listed in Table 4.

Table 4. Monitoring Stations with an 8-hr Ozone Exceedance that were selected to Run 48-hr Back Trajectories

STATE	STATION	Daily Maximum 8-Hr Average (ppb)
CT	Madison-Beach Road	86
DE	MLK (New Castle Co.)	78
MD	Fair Hill	79
NJ	Flemington	72
NJ	Colliers Mills	87
NJ	Monmouth University	80
NJ	Ancora	74
NY	Queens	85
NY	Babylon	87
PA	NEA (Philadelphia Co.)	72

Figure 2. 48-hour Back Trajectories for June 12, 2025 at 10 meters

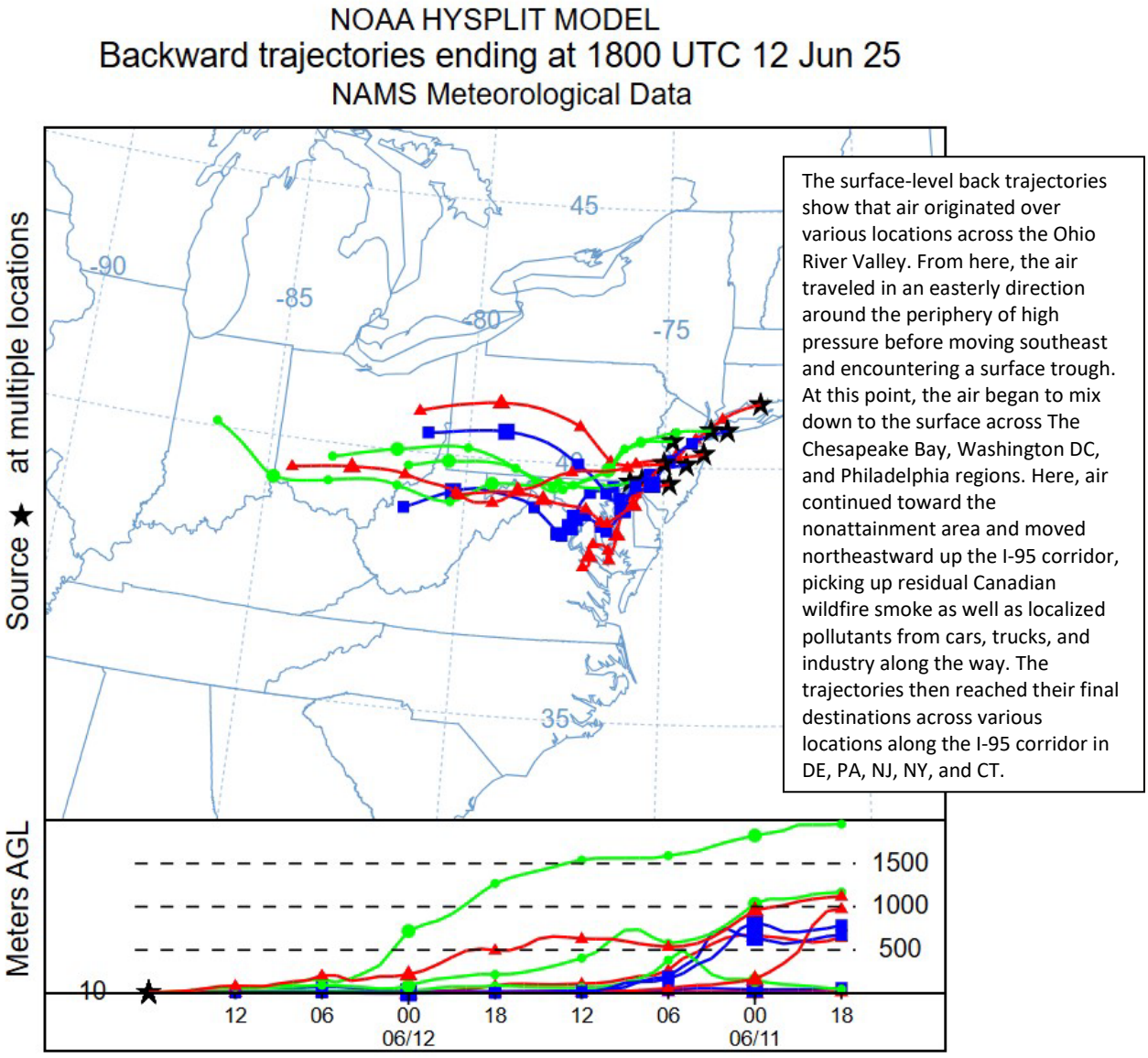
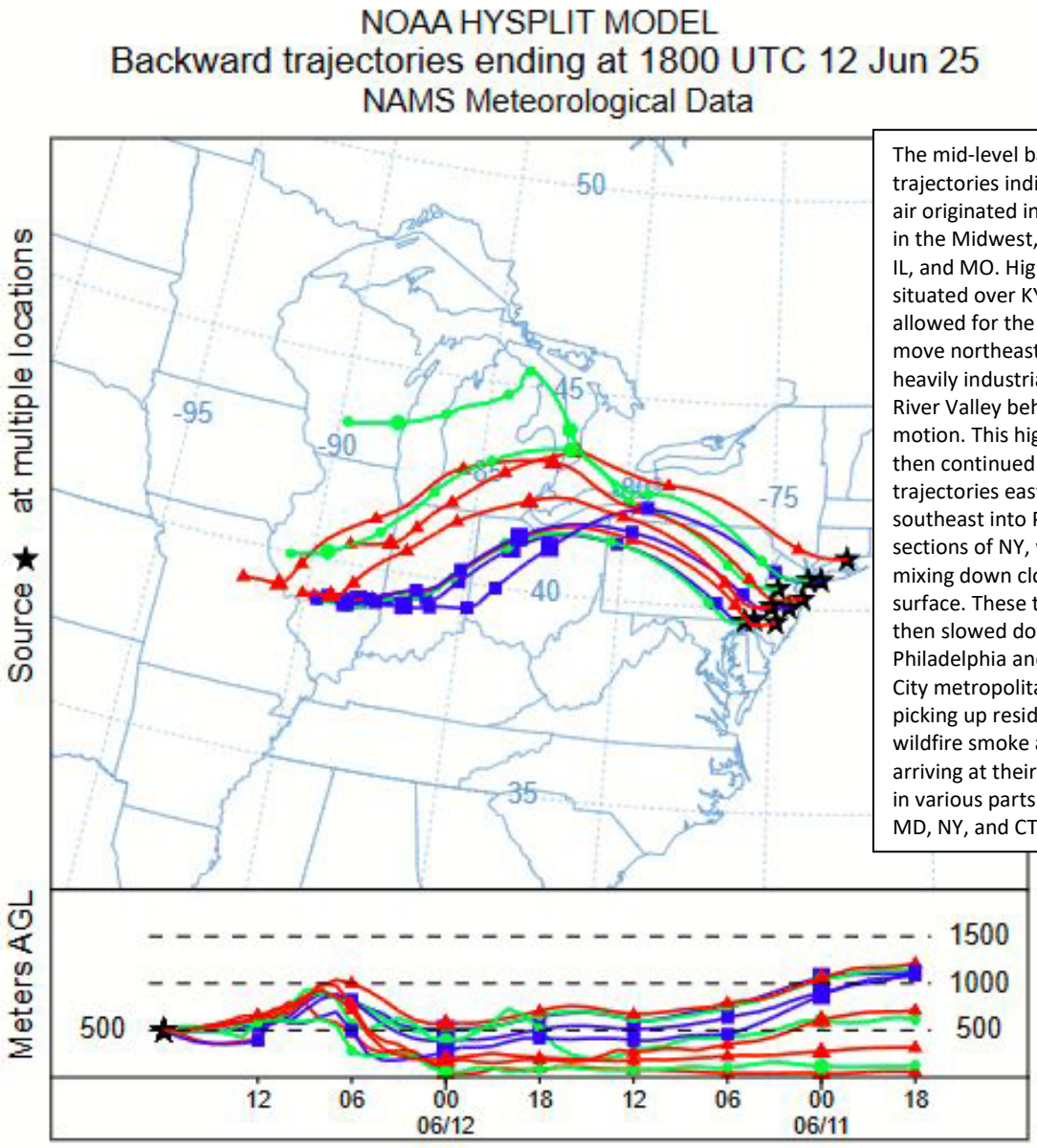
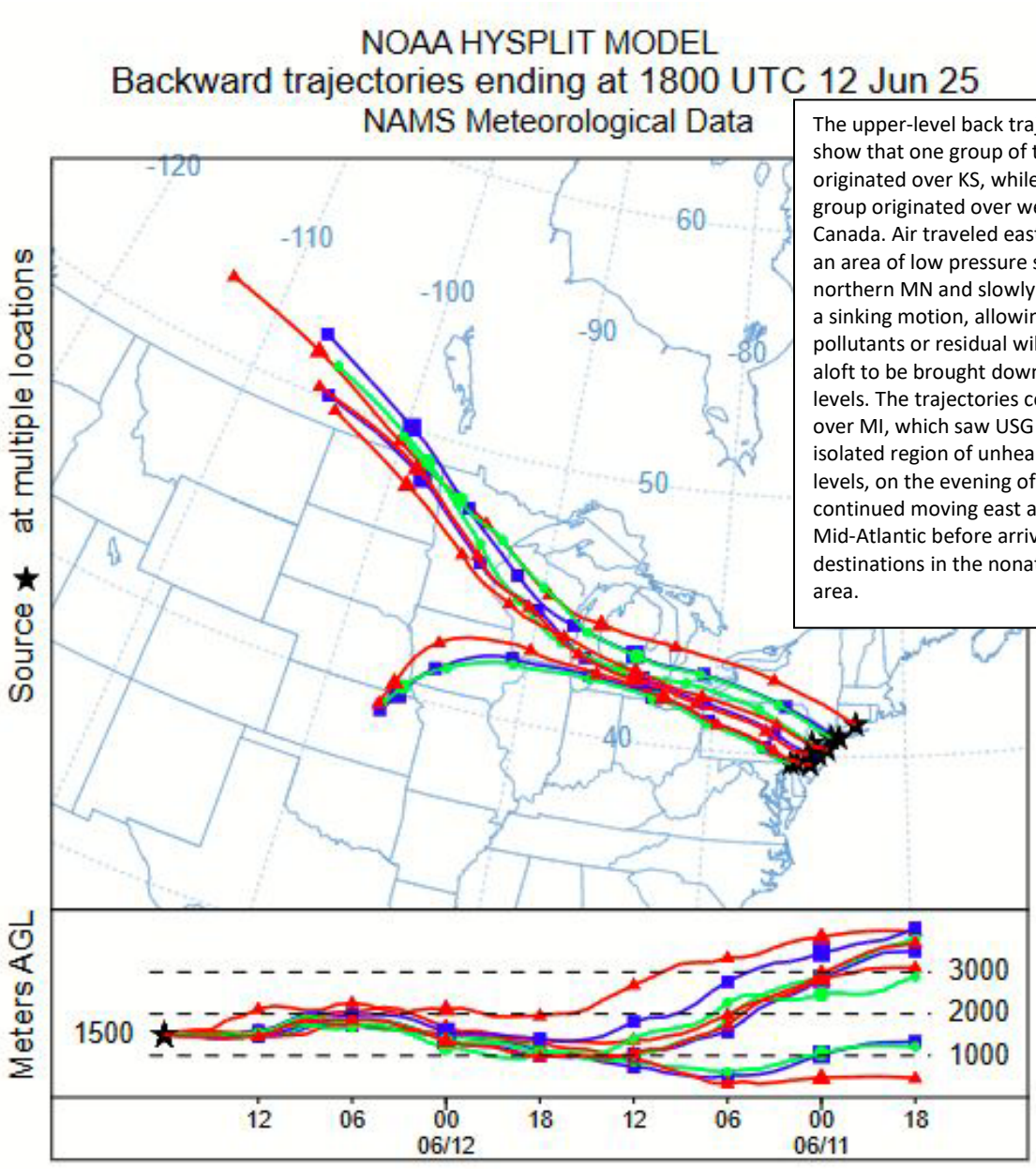


Figure 3. 48-hour Back Trajectories for June 12, 2025 at 500 meters



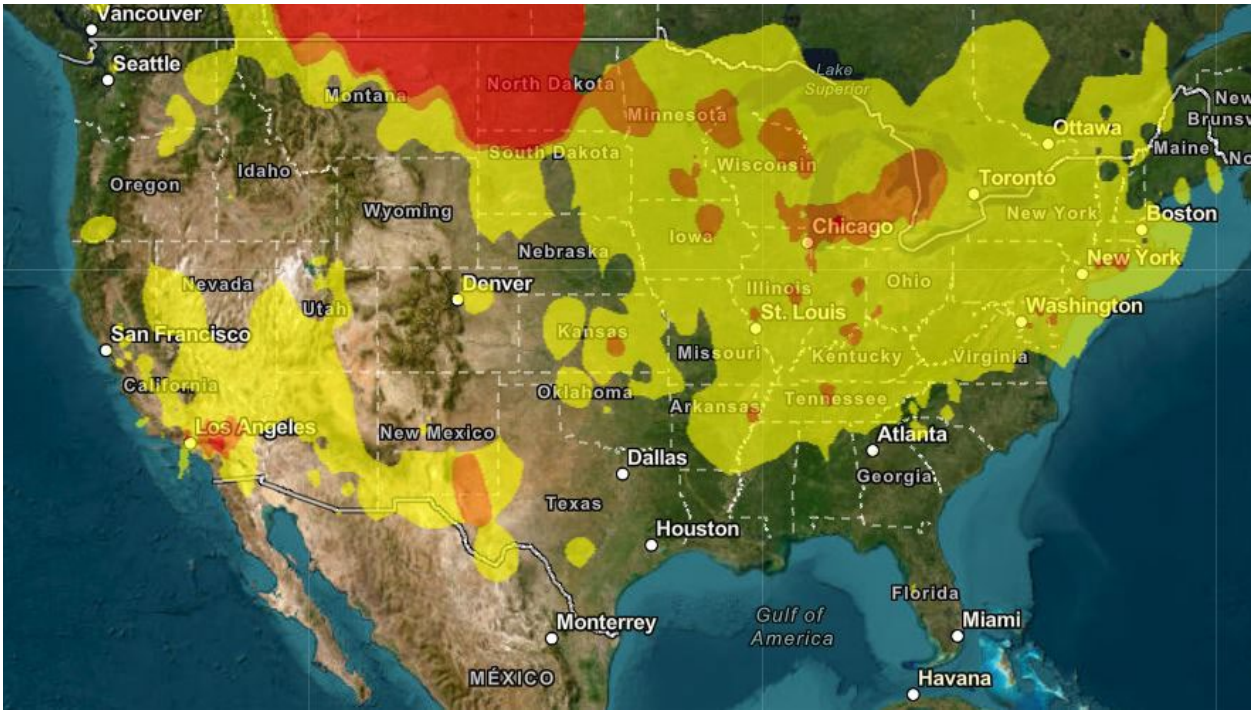
The mid-level back trajectories indicate that the air originated in various states in the Midwest, including WI, IL, and MO. High pressure situated over KY and TN allowed for the air masses to move northeast and over the heavily industrialized Ohio River Valley behind clockwise motion. This high pressure then continued to carry the trajectories east and then southeast into PA and lower sections of NY, while also mixing down close to the surface. These trajectories then slowed down over the Philadelphia and New York City metropolitan areas, picking up residual ozone and wildfire smoke aloft before arriving at their destinations in various parts of DE, PA, NJ, MD, NY, and CT.

Figure 4. 48-hour Back Trajectories for June 12, 2025 at 1500 meters



The upper-level back trajectories show that one group of trajectories originated over KS, while the other group originated over western Canada. Air traveled eastward behind an area of low pressure situated over northern MN and slowly experienced a sinking motion, allowing any pollutants or residual wildfire smoke aloft to be brought down to lower levels. The trajectories converged over MI, which saw USG and an isolated region of unhealthy ozone levels, on the evening of the 11th and continued moving east across the Mid-Atlantic before arriving at their destinations in the nonattainment area.

Figure 5. Air Quality Index for the United States on June 11, 2025



Source: www.airnow.gov

How is Ozone Created?

Ground-level ozone is an air pollutant known to cause several health effects and negatively impact air quality and the environment in New Jersey. Ozone is formed when oxides of nitrogen (NOx) and volatile organic compounds (VOCs) react in the presence of sunlight. Ozone can irritate any person's lungs, but the effect may be more pronounced for those with existing lung-related deficiencies, and therefore, one should take extra precautions on bad ozone days.

Find Out About Air Quality Every Day

Learn more about your local ozone air quality forecast by visiting the "What's Your Air Quality Today?" page at https://dep.nj.gov/airplanning/aqi-today/.