Ozone National Ambient Air Quality Standard Health Exceedances on June 25, 2025

Exceedance Locations and Levels

On Wednesday, June 25, 2025, there were two (2) 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 6/25/2025

Site		8-Hr Maximum Average (ppb)
1	Ancora	65
2	Bayonne	50
3	Brigantine	52
4	Chester	47
5	Clarksboro	70
6	Colliers Mills	67
7	Columbia	45
8	Flemington	58
9	Leonia	46
10	Millville	71
11	Monmouth University	86
12	Ramapo	40
13	Rider University	63
14	Rutgers University	53
15	South Camden	64
16	Washington Crossing*	58

*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 two (2) exceedances of the ozone NAAQS in Connecticut. See Table 2.

Table 2. Ozone Concentrations at Out-of-State Monitoring Stations in New Jersey's Ozone Nonattainment Areas on 6/25/2025

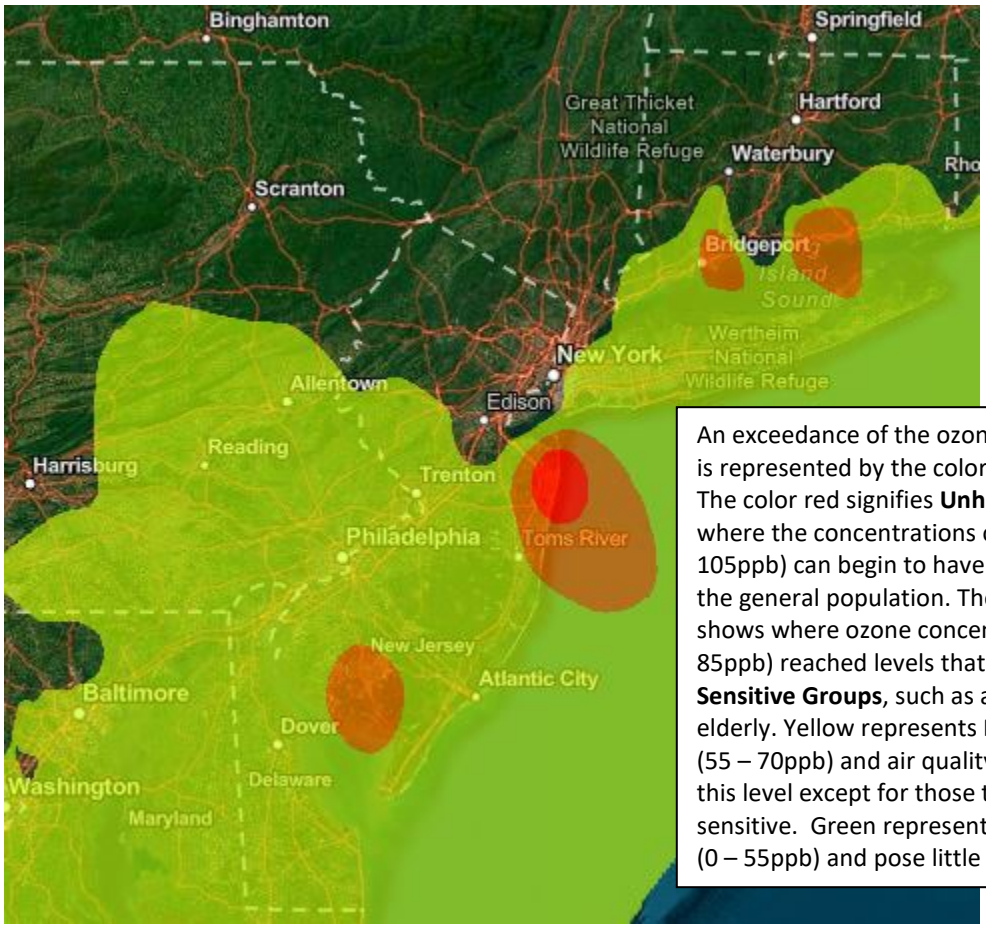
STATE	STATION	Daily Maximum 8-Hr Average (ppb)
CT	Danbury	49
CT	Greenwich	58
CT	Madison-Beach Road	77
CT	Middletown-CVH-Shed	46
CT	New Haven	49
CT	Stratford	75
CT	Westport	57
DE	BCSP (New Castle Co.)	65
DE	BELLFNT2 (New Castle Co.)	66
DE	KILLENS (Kent Co.)	66
DE	LEWES (Sussex Co.)	70
DE	LUMS 2 (New Castle Co.)	70
DE	MLK (New Castle Co.)	65
DE	SEAFORD (Sussex Co.)	65
MD	Fair Hill	67
NY	Babylon	63
NY	Bronx - IS52	52
NY	CCNY	53
NY	Flax Pond	63
NY	Fresh Kills	53
NY	Holtsville	63
NY	Pfizer Lab	51
NY	Queens	62
NY	Riverhead	62
NY	Rockland Cty	62
NY	White Plains	48
PA	BRIS (Bucks Co.)	63
PA	CHES (Delaware Co.)	65
PA	NEWG (Chester Co.)	65
PA	NORR (Montgomery Co.)	61
PA	LAB (Philadelphia Co.)	59
PA	NEA (Philadelphia Co.)	58
PA	NEW (Philadelphia Co.)	64
	TOTAL EXCEEDANCES	2

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	10
Delaware	3
Maryland	1
New Jersey	7
New York	7
Pennsylvania	4

Figure 1. Ozone Air Quality Index for June 25, 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 Wednesday June 25th, several ozone exceedances were observed along the Connecticut coastline and portions of southern and coastal New Jersey, marking the third day of a multi-day exceedance event. High pressure remained anchored over the eastern seaboard leading into Wednesday, providing little atmospheric ventilation for the region. Persistent light winds out of the north-northwest and sunny skies caused temperatures to quickly soar into the mid to upper 90s, with Extreme Heat Warnings remaining in place statewide. A surface trough continued to hover along the East Coast, providing ample vertical mixing of residual ozone and precursors aloft from days prior to the surface. This in combination with an onshore flow along the coast allowed ozone levels to remain elevated in the Unhealthy for Sensitive Groups (USG) category in southern and coastal portions of New Jersey and Connecticut, with an Unhealthy ozone exceedance observed for the second day in a row at the Monmouth University monitor in New Jersey.

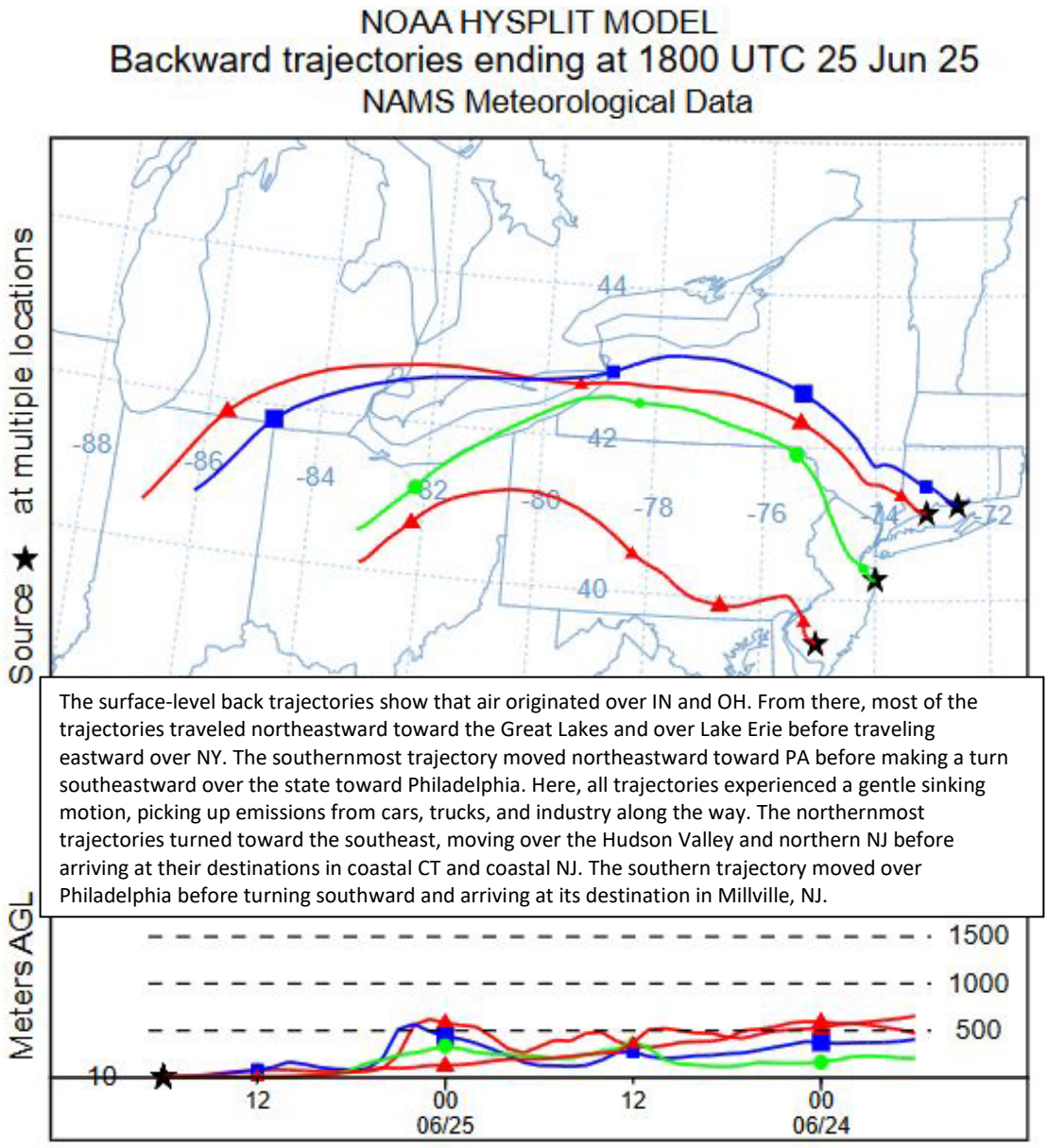
Where Did the Air Pollution that Caused Ozone Come From?

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

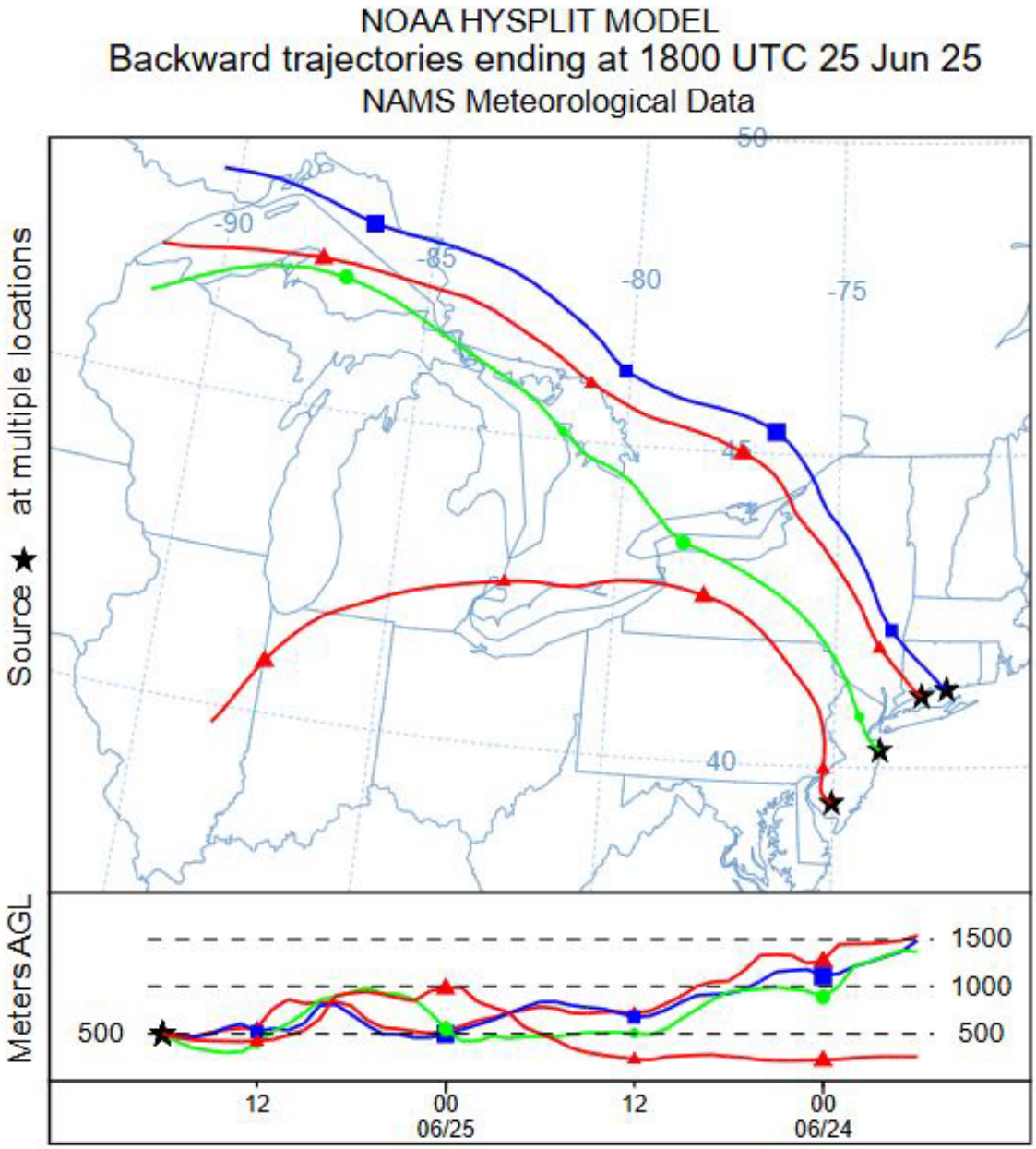
STATE	STATION	Daily Maximum 8-Hr Average (ppb)
CT	Madison-Beach Road	77
CT	Stratford	75
NJ	Millville	71
NJ	Monmouth University	86

Figure 2. 48-hour Back Trajectories for June 25, 2025 at 10 meters



The surface-level back trajectories show that air originated over IN and OH. From there, most of the trajectories traveled northeastward toward the Great Lakes and over Lake Erie before traveling eastward over NY. The southernmost trajectory moved northeastward toward PA before making a turn southeastward over the state toward Philadelphia. Here, all trajectories experienced a gentle sinking motion, picking up emissions from cars, trucks, and industry along the way. The northernmost trajectories turned toward the southeast, moving over the Hudson Valley and northern NJ before arriving at their destinations in coastal CT and coastal NJ. The southern trajectory moved over Philadelphia before turning southward and arriving at its destination in Millville, NJ.

Figure 3. 48-hour Back Trajectories for June 25, 2025 at 500 meters



The mid-level back trajectories indicate that the air originated over various locations around Lake Superior and one trajectory originated over IL. From here, the northernmost trajectories moved in a southeasterly direction around high pressure and moved over the Great Lakes and Canada before entering NY. The southernmost trajectory moved in a northeastward direction over IN, MI, and Lake Superior before entering NY and making a turn toward the southeast. Here, all trajectories experienced a gentle sinking motion, bringing any pollutants aloft down to the surface. The northernmost trajectories moved over NY, with two moving over the Hudson Valley and CT before arriving at their destinations along coastal CT. One trajectory moved over northern NJ before arriving at its destination along the coast. The southernmost trajectory moved over PA and over Philadelphia before arriving at Millville, NJ.

Figure 4. 48-hour Back Trajectories for June 25, 2025 at 1500 meters

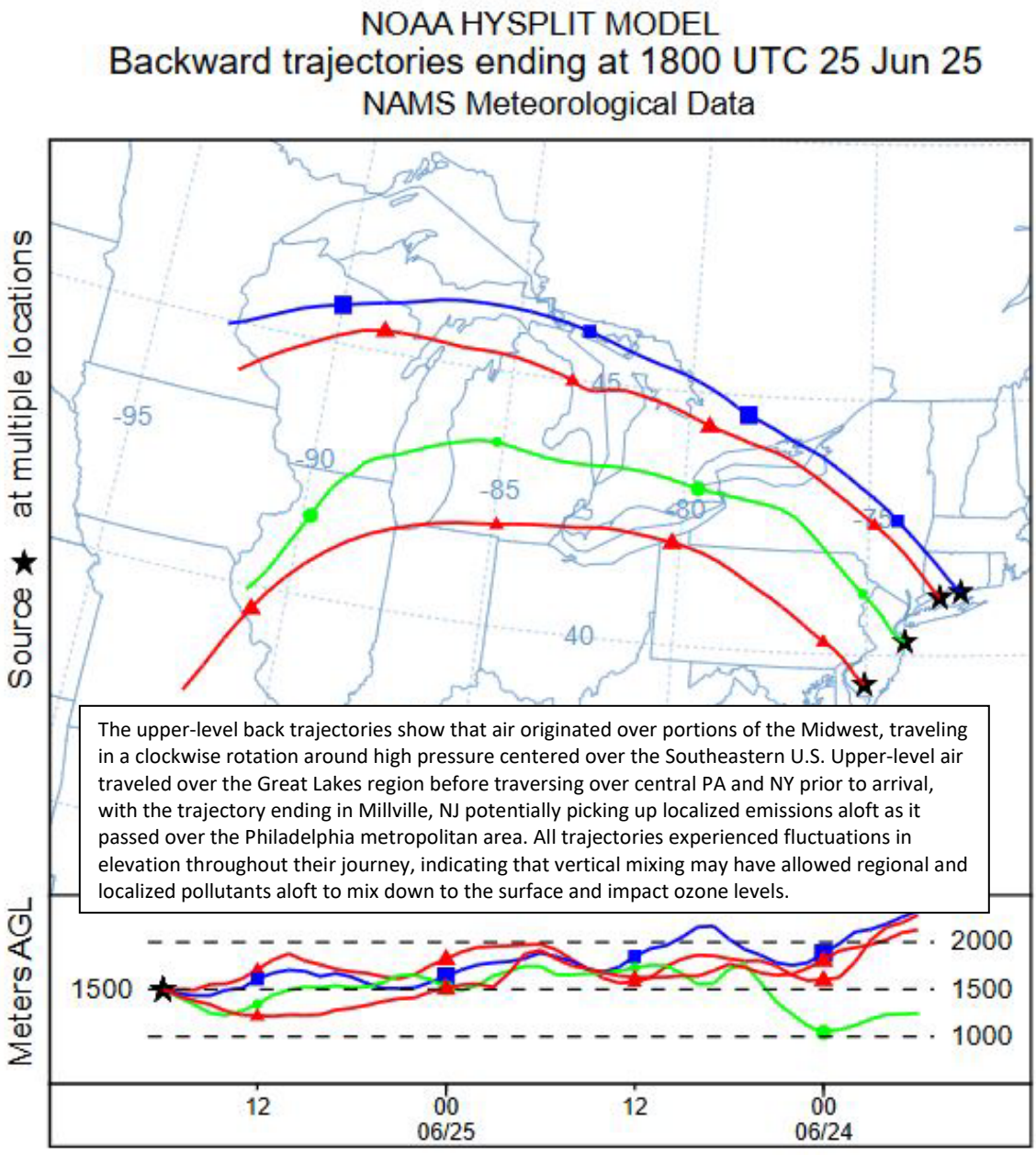
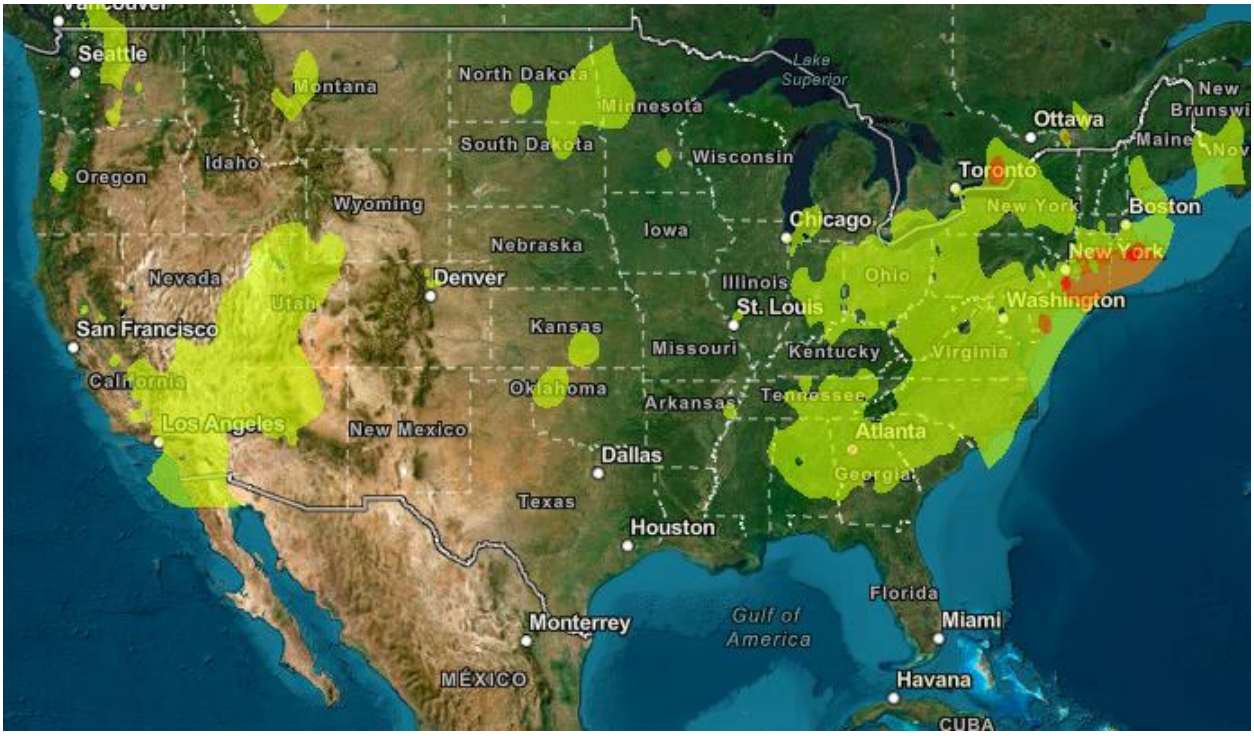


Figure 5. Air Quality Index for the United States on June 24, 2025



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/.