Ozone National Ambient Air Quality Standard Health Exceedances on July 6, 2025

Exceedance Locations and Levels

On Sunday, July 6, 2025, there was one (1) exceedance 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 7/6/2025

	Site	8-Hr Maximum Average (ppb)
1	Ancora	44
2	Bayonne	63
3	Brigantine	44
4	Chester	56
5	Clarksboro	52
6	Colliers Mills	48
7	Columbia	57
8	Flemington	59
9	Leonia	71
10	Millville	47
11	Monmouth University	49
12	Ramapo	57
13	Rider University	62
14	Rutgers University	57
15	South Camden	52
16	Washington Crossing*	60

*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 six (6) 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 7/6/2025

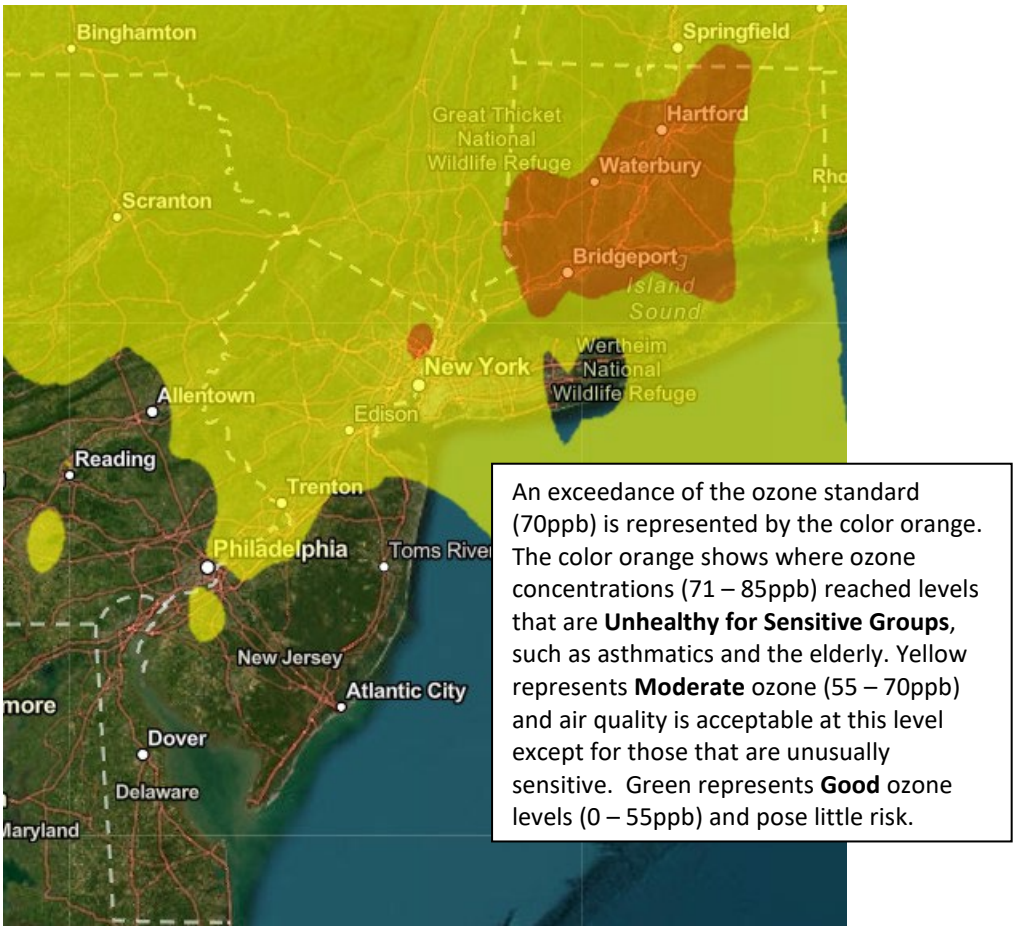
STATE	STATION	Daily Maximum 8-Hr Average (ppb)
CT	Danbury	73
CT	Greenwich	66
CT	Madison-Beach Road	74
CT	Middletown-CVH-Shed	76
CT	New Haven	76
CT	Stratford	72
CT	Westport	72
DE	BCSP (New Castle Co.)	51
DE	BELLFNT2 (New Castle Co.)	47
DE	KILLENS (Kent Co.)	45
DE	LEWES (Sussex Co.)	39
DE	LUMS 2 (New Castle Co.)	46
DE	MLK (New Castle Co.)	49
DE	SEAFORD (Sussex Co.)	38
MD	Fair Hill	46
NY	Babylon	52
NY	Bronx - IS52	62
NY	CCNY	67
NY	Flax Pond	58
NY	Fresh Kills	61
NY	Holtsville	53
NY	Pfizer Lab	67
NY	Queens	59
NY	Riverhead	56
NY	Rockland Cty	58
NY	White Plains	69
PA	BRIS (Bucks Co.)	ND
PA	CHES (Delaware Co.)	52
PA	NEWG (Chester Co.)	49
PA	NORR (Montgomery Co.)	49
PA	LAB (Philadelphia Co.)	55
PA	NEA (Philadelphia Co.)	55
PA	NEW (Philadelphia Co.)	56
	TOTAL EXCEEDANCES	6

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 – July 6, 2025 NAAQS = 70 ppb
Connecticut	12
Delaware	4
Maryland	1
New Jersey	9
New York	8
Pennsylvania	4

Figure 1. Ozone Air Quality Index for July 6, 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 Sunday July 6th, several ozone exceedances were observed across Connecticut, with an isolated exceedance observed in northeastern New Jersey at the Leonia monitor. Broad high pressure was noted across much of the East Coast in the days leading up to the exceedances, allowing for persistent light winds out of the southwest for inland portions of the state. Light winds and abundant sunshine allowed temperatures to quickly rise into the upper 80s to low 90s for the 2nd day in a row, causing ozone concentrations along the I-95 corridor in northeastern New Jersey and Connecticut to rise into the Unhealthy for Sensitive Groups (USG) category. South-southeasterly winds along the coast and in southern New Jersey provided a cleaner maritime air mass to those regions, likely suppressing ozone levels to the moderate and good category in those locations. These favorable meteorological conditions, in combination with a stagnant previously polluted air mass from the day prior, allowed for the ozone exceedances observed in northeastern New Jersey and Connecticut. Low levels of diffuse Canadian wildfire smoke and potential lingering fourth of July firework smoke were also noted throughout the region on Sunday.

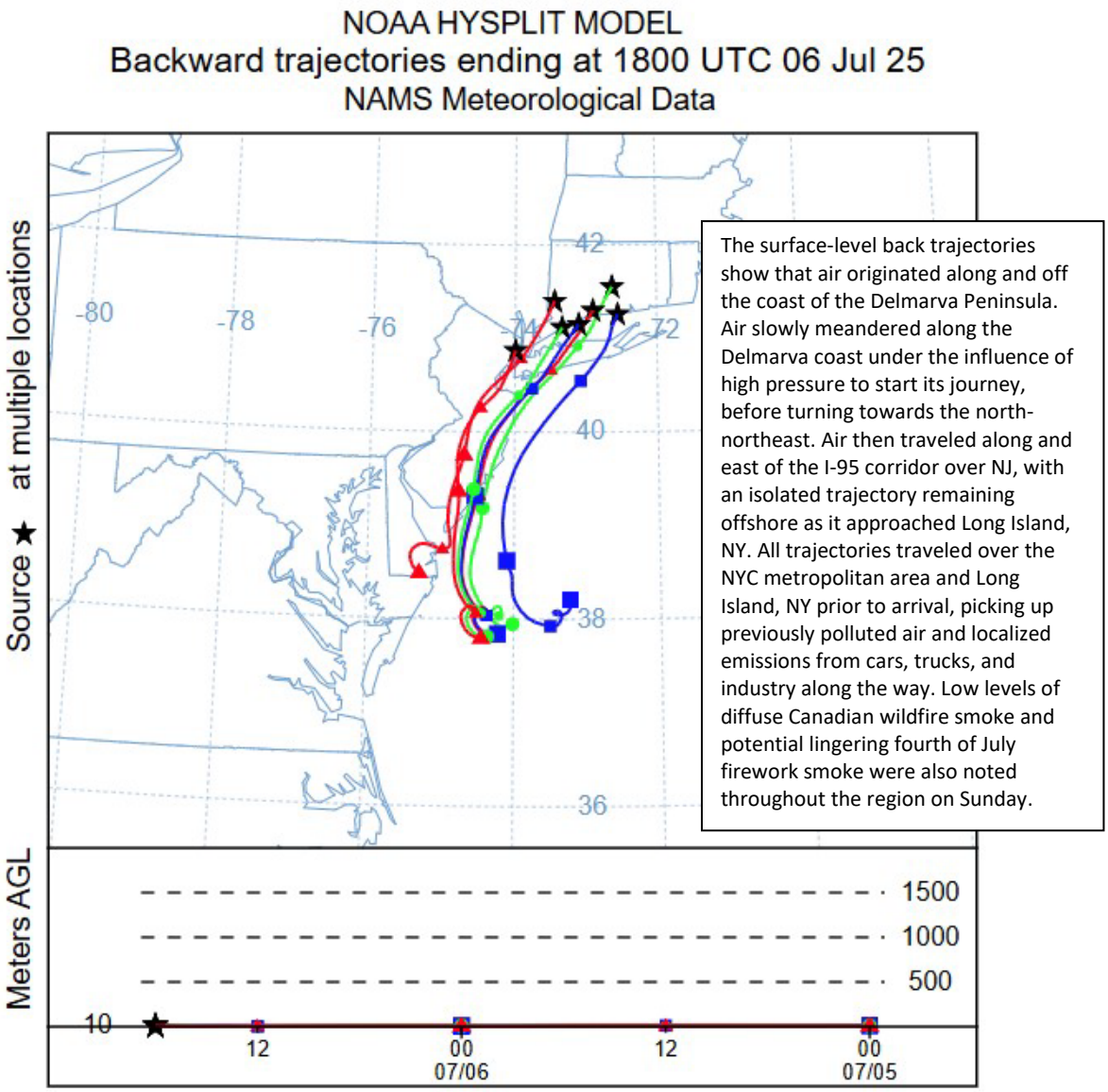
Where Did the Air Pollution that Caused Ozone Come From?

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	Danbury	73
CT	Madison-Beach Road	74
CT	Middletown-CVH-Shed	76
CT	New Haven	76
CT	Stratford	72
CT	Westport	72
NJ	Leonia	71

Figure 2. 48-hour Back Trajectories for July 6, 2025 at 10 meters



The surface-level back trajectories show that air originated along and off the coast of the Delmarva Peninsula. Air slowly meandered along the Delmarva coast under the influence of high pressure to start its journey, before turning towards the north-northeast. Air then traveled along and east of the I-95 corridor over NJ, with an isolated trajectory remaining offshore as it approached Long Island, NY. All trajectories traveled over the NYC metropolitan area and Long Island, NY prior to arrival, picking up previously polluted air and localized emissions from cars, trucks, and industry along the way. Low levels of diffuse Canadian wildfire smoke and potential lingering fourth of July firework smoke were also noted throughout the region on Sunday.

Figure 3. 48-hour Back Trajectories for July 6, 2025 at 500 meters

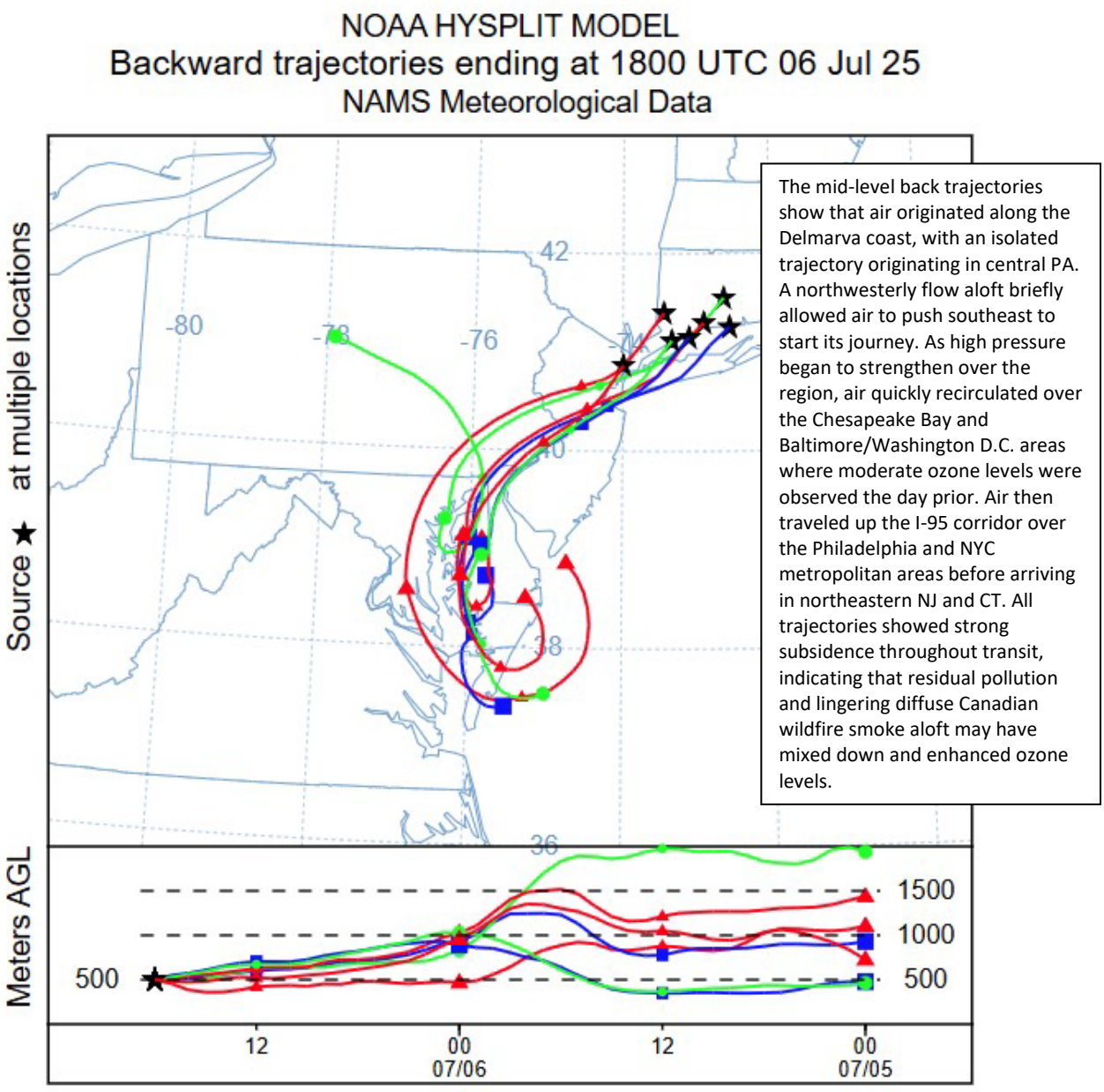
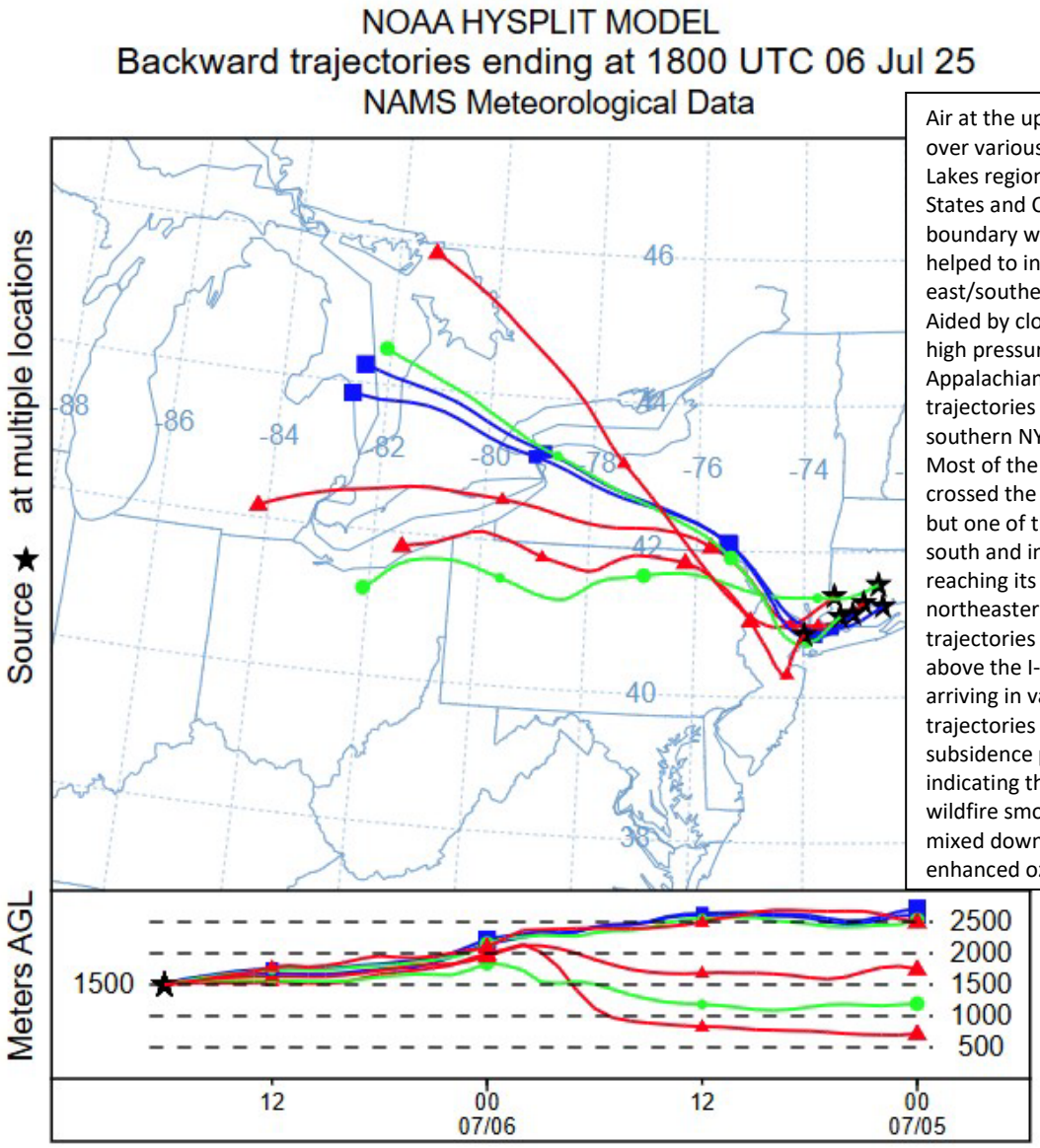
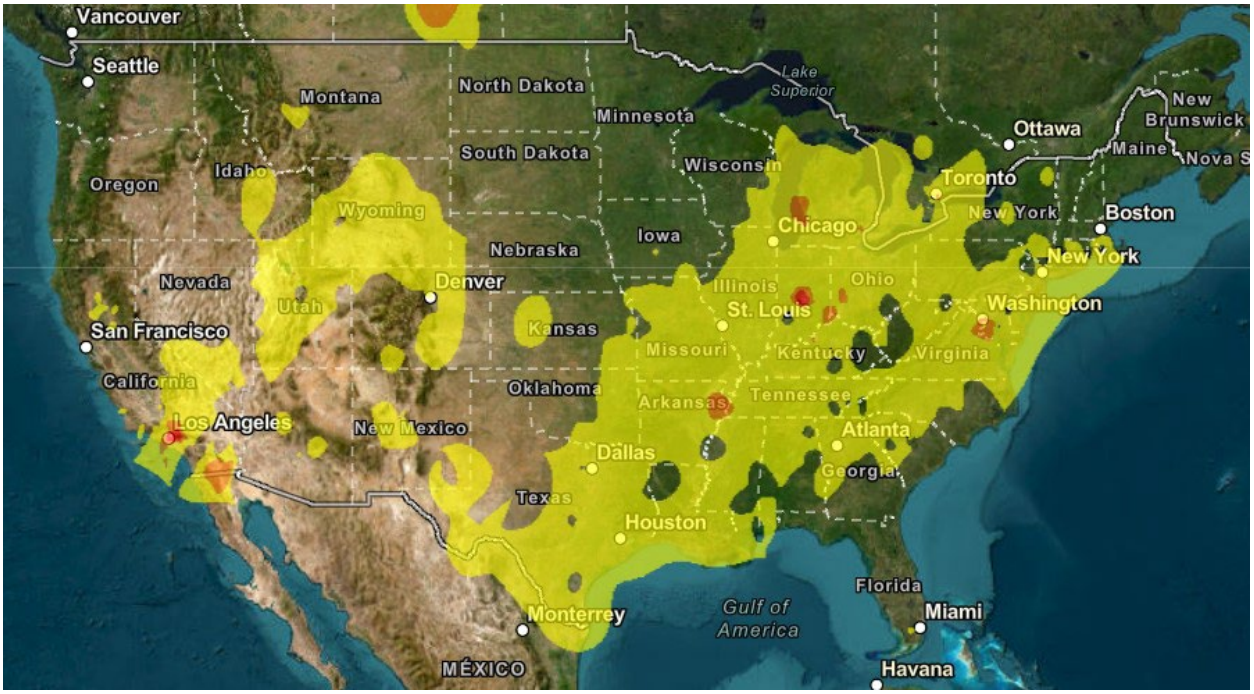


Figure 4. 48-hour Back Trajectories for July 6, 2025 at 1500 meters



Air at the upper levels originated over various areas of the Great Lakes region in both the United States and Canada. A large frontal boundary west of the trajectories helped to initially push them in an east/southeasterly direction. Aided by clockwise motion from high pressure located above the Appalachian Mountains, the trajectories continued across southern NY and northern PA. Most of the trajectories then crossed the Long Island Sound, but one of them stretched further south and into central NJ before reaching its final destination in northeastern NJ. The other trajectories slowly meandered above the I-95 corridor before arriving in various areas of CT. All trajectories showed signs of subsidence prior to arrival, indicating that diffuse Canadian wildfire smoke aloft may have mixed down to the surface and enhanced ozone.

Figure 5. Air Quality Index for the United States on July 5, 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/.