

Ozone National Ambient Air Quality Standard Health Exceedances on June 29, 2022

Exceedance Locations and Levels

Table 1. New Jersey Ozone Concentrations on 6/29/2022

STATION	Daily Maximum 8-Hr Average (ppb)
Ancora State Hospital	55
Bayonne	58
Brigantine	52
Camden Spruce St	59
Chester	56
Clarksboro	63
Colliers Mills	64
Columbia	58
Flemington	56
Leonora	57
Millville	56
Monmouth University	58
Newark Firehouse	54
Ramapo	53
Rider University	60
Rutgers University	57
Washington Crossing*	56
TOTAL EXCEEDANCES	0

*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. See Table 2.

Table 2. Ozone Concentrations at Out-of-State Monitoring Stations in New Jersey's Ozone Nonattainment Areas on 6/29/2022

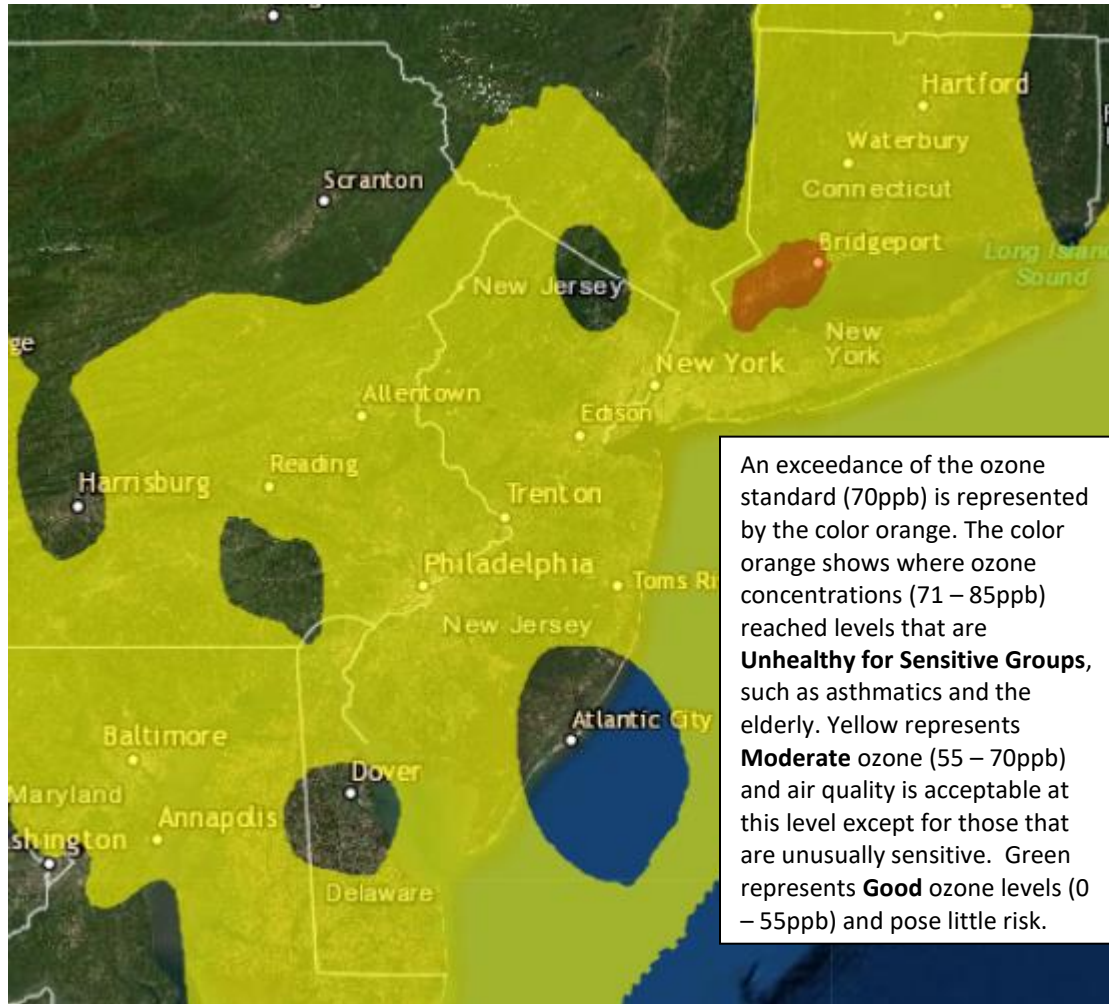
STATE	STATION	Daily Maximum 8-Hr Average (ppb)
CT	Danbury	60
CT	Greenwich	71
CT	Madison-Beach Road	60
CT	Middletown-CVH-Shed	65
CT	New Haven	64
CT	Stratford	70
CT	Westport	71
DE	BCSP (New Castle Co.)	60
DE	BELLFNT2 (New Castle Co.)	58
DE	KILLENS (Kent Co.)	53
DE	LEWES (Sussex Co.)	55
DE	LUMS 2 (New Castle Co.)	56
DE	MLK (New Castle Co.)	59
DE	SEAFORD (Sussex Co.)	55
MD	Fair Hill	55
NY	Babylon	61
NY	Bronx - IS52	61
NY	CCNY	60
NY	Flax Pond	68
NY	Fresh Kills	56
NY	Holtsville	59
NY	Pfizer Lab	61
NY	Queens	61
NY	Riverhead	57
NY	Rockland Cty	57
NY	White Plains	59
PA	BRIS (Bucks Co.)	68
PA	CHES (Delaware Co.)	61
PA	NEWG (Chester Co.)	49
PA	NORR (Montgomery Co.)	63
PA	LAB (Philadelphia Co.)	61
PA	NEA (Philadelphia Co.)	66
PA	NEW (Philadelphia Co.)	66
	TOTAL EXCEEDANCES	2

The number of days in 2022 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 2022

STATE	# of Days NAAQS was Exceeded January 1 – June 29, 2022 NAAQS = 70 ppb
Connecticut	3
Delaware	0
Maryland	1
New Jersey	1
New York	1
Pennsylvania	0

Figure 1. Ozone Air Quality Index for June 29, 2022



Source: www.airnow.gov

For ozone terminology definitions see NJDEP Air Quality Planning's Glossary and Acronyms webpage: <http://nj.gov/dep/baqp/glossary.html>

Weather

An area of high pressure advancing eastward into the Atlantic Ocean maintained its control over the Mid-Atlantic region and the Northeast on Wednesday, June 29th. Sunny skies, temperatures reaching the low to mid 80s, and light winds contributed to favorable conditions for ozone formation along the Connecticut coastline. Here, light winds observed a shift from northwesterly to south/southwesterly during the mid-morning hours allowing polluted air from upwind locations to travel downwind into Connecticut. Meanwhile, a surface trough developed over the region and meandered over the Connecticut coastline through the afternoon which may have allowed polluted air aloft to mix down to the surface. All of these factors in combination allowed for the transport of emissions and quick rise in ozone concentrations along the Connecticut coastline where two exceedances were observed.

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	Greenwich	71
CT	Westport	71

Figure 2. 48-hour Back Trajectories for June 29, 2022 at 10 meters

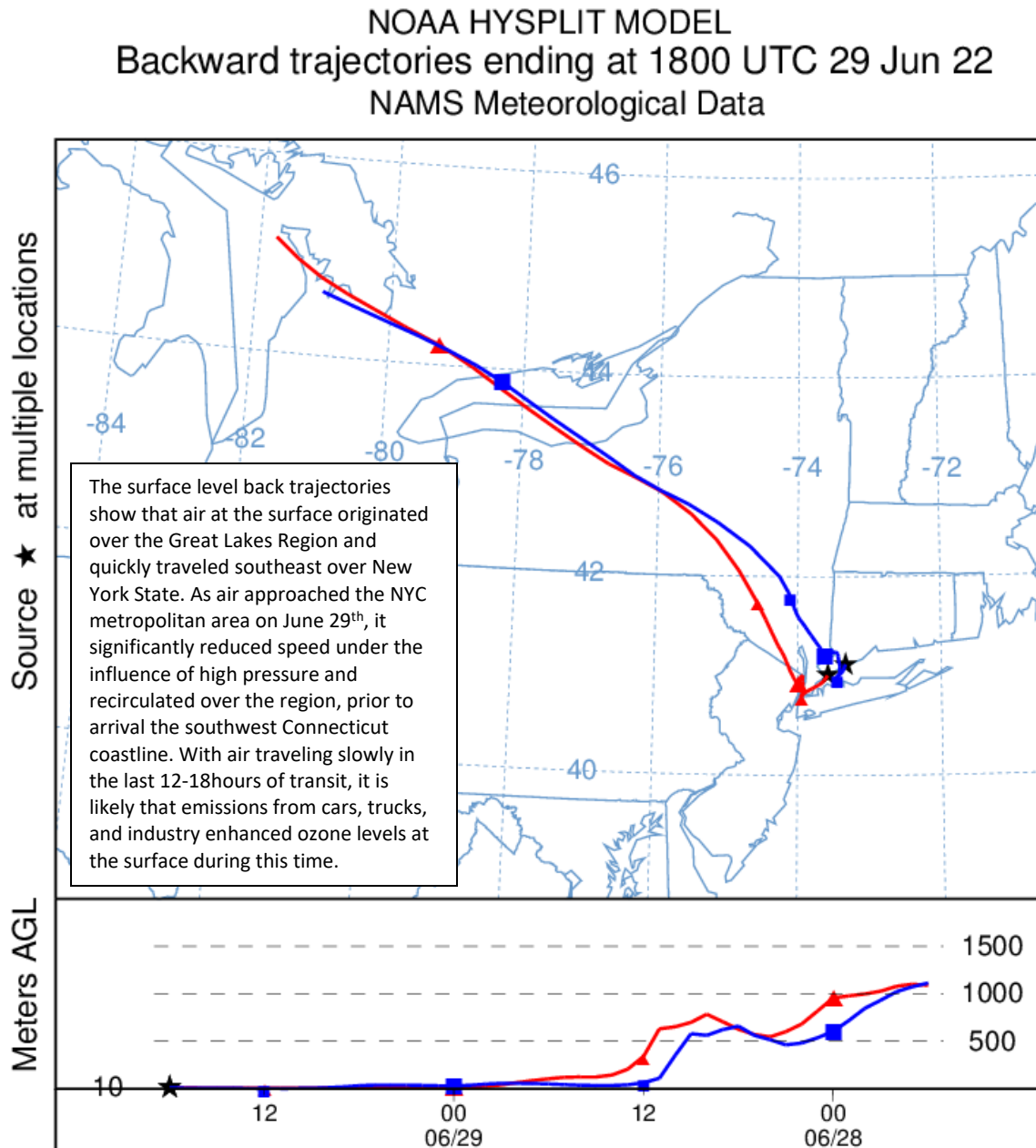


Figure 3. 48-hour Back Trajectories for June 29, 2022 at 500 meters

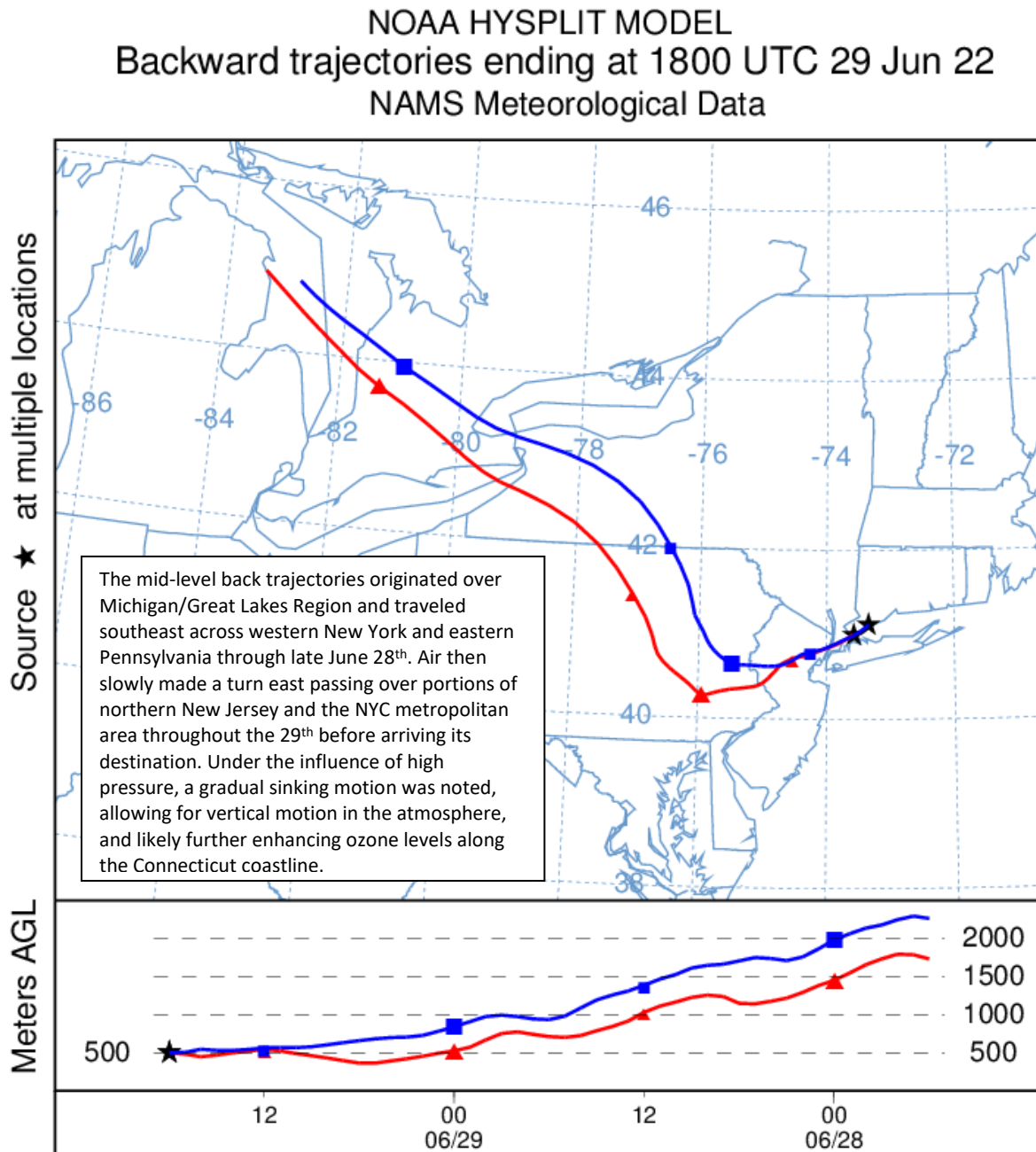


Figure 4. 48-hour Back Trajectories for June 29, 2022 at 1500 meters

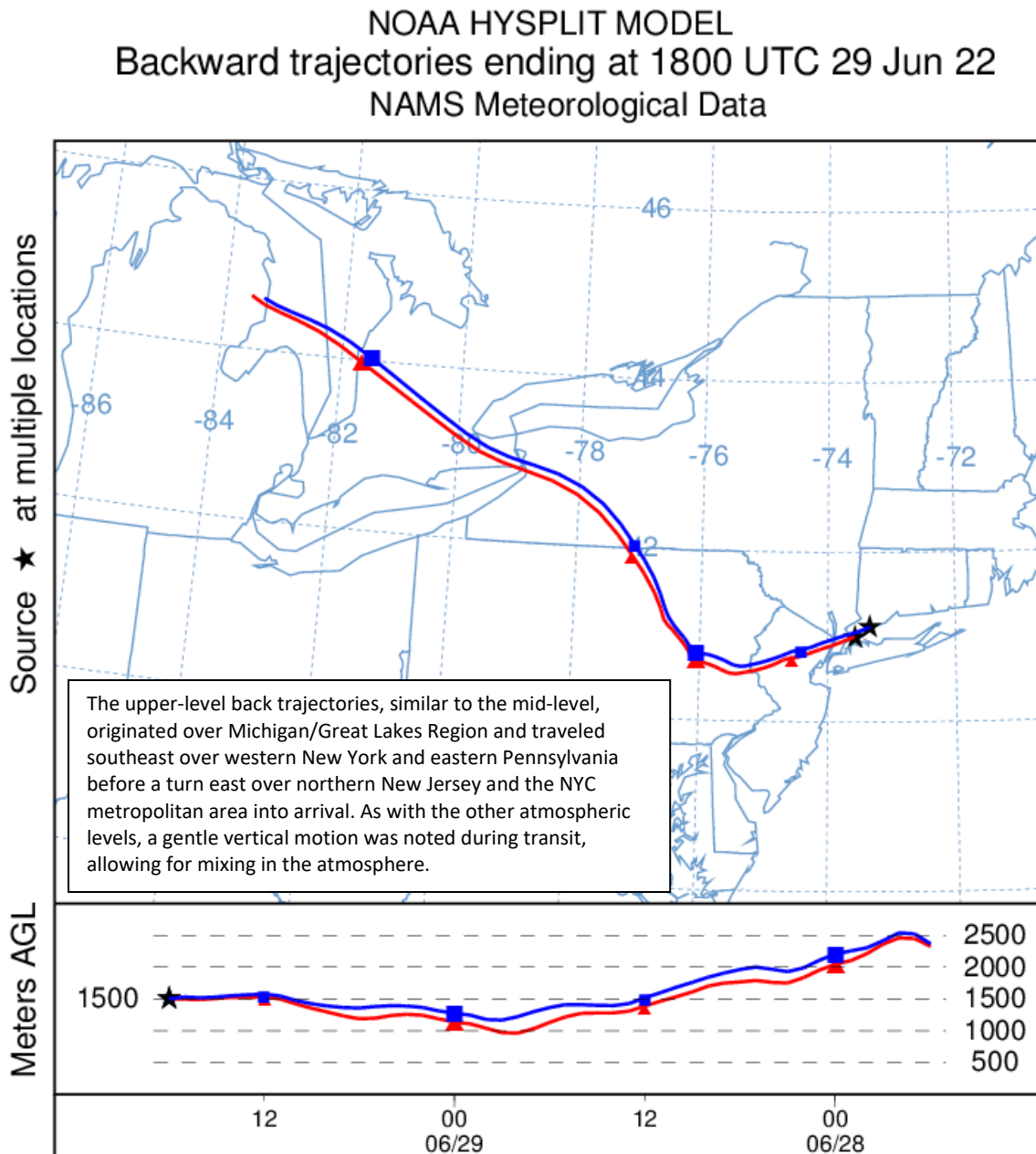
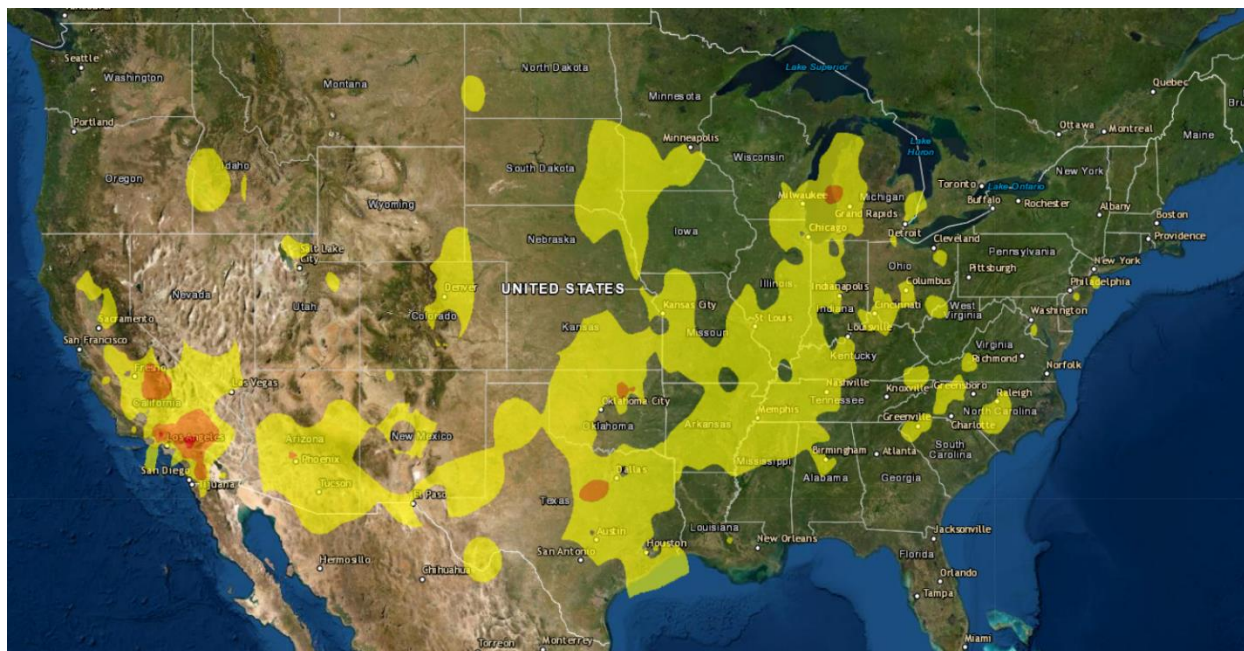


Figure 5. Air Quality Index for the United States on June 28, 2022



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 (NO_x) 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://www.nj.gov/dep/baqp/aqitoday.html>.