

Ozone National Ambient Air Quality Health Standard Exceedances on August 15, 2015

Exceedances Locations and Levels

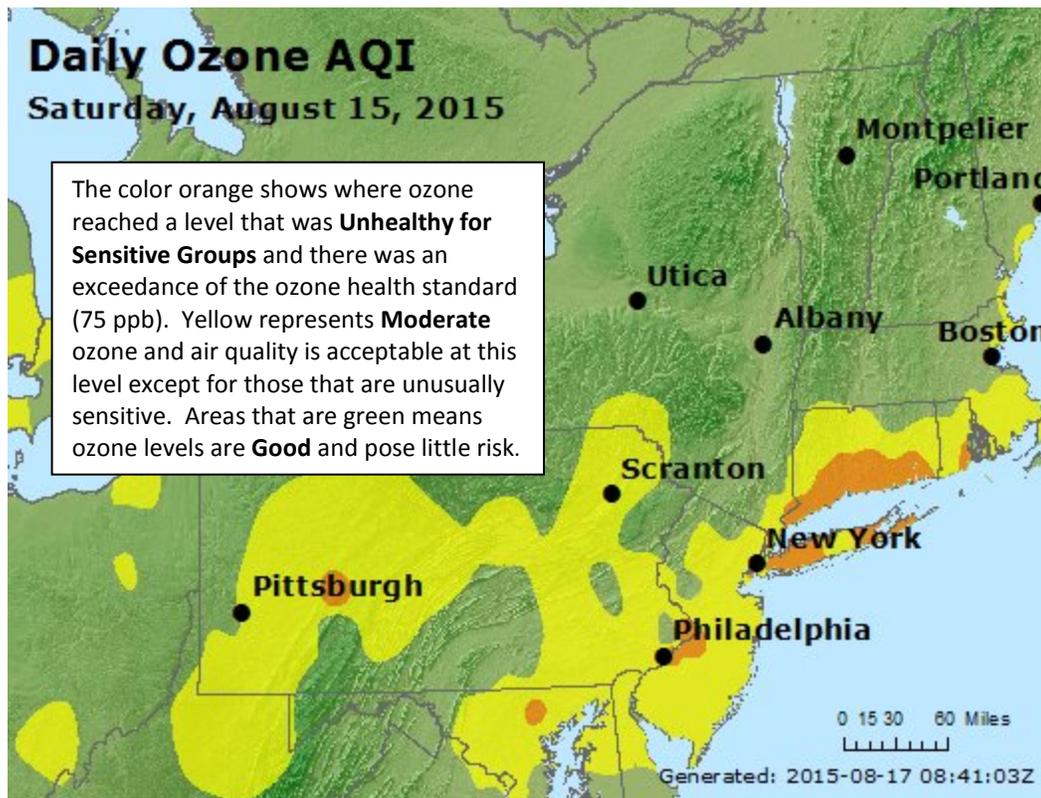
On Saturday, August 15, 2015, exceedances of the 8-hour average National Ambient Air Quality Standard (NAAQS) for ozone (75 ppb) were recorded at two (2) New Jersey stations: : Bayonne station with a concentration of 76 ppb and Camden Spruce Street station with a concentration of 76 ppb. The highest 1-hour average ozone concentration recorded on August 15, 2015 in New Jersey was 86 ppb at Rider University, which is below the 1-hour NAAQS of 120 ppb. This is the eleventh (11th) day there was an exceedance of the 8-hour ozone NAAQS in 2015 for New Jersey. By this time in 2014, there were 2 days on which an ozone exceedance was measured in New Jersey, and there were 8 days in 2013.

Elsewhere in the region, there were 11 exceedances of the 8-hour ozone NAAQS recorded at monitoring stations in designated counties of New York, Connecticut, and Pennsylvania that are included in New Jersey’s ozone non-attainment areas. The highest 8-hour average ozone concentration recorded was 89 ppb at the Greenwich station in Connecticut. The highest 1-hour average ozone concentration recorded was 106 ppb, also at Greenwich (See table below). Figure 1 shows the ozone AQI across the region for August 15.

List of Monitoring Sites in Region that Exceeded the Health Standard

State	Site Name	8/15/2015, Maximum 8-hour O3 Concentration, ppb
CT	Greenwich	89
CT	Westport	87
CT	Stratford	86
CT	New Haven – Criscuolo Park	84
PA	Bristol	83
CT	Madison Beach Rd	80
NY	Babylon	79
PA	Philadelphia (NEW)	78
NJ	Bayonne	76
NJ	Camden Spruce Street	76
CT	Middletown	76
NY	Queens	76
NY	Riverhead	76

Figure 1. Ozone Air Quality Index for August 15, 2015



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

Meteorological data from across the region showed temperatures reached into the low 90s° F, while winds were from the southwest circulating about a high pressure ridge located off the eastern seaboard. Skies were partly cloudy across the region, but there was enough sunshine to promote ozone formation. Sufficient sunlight, combined with warmer temperatures and a southwest wind component are all features commonly seen with an ozone episode.

Where Did the Air Pollution that Caused Ozone Come From?

Figures 2 and 3 show the back trajectories for the 13 monitored exceedances for August 15. Figure 2 shows where the low level winds came from during the 48 hours preceding the high ozone levels at various locations. This indicates that the low level winds carried pollutants up the I-95 Corridor, where there are air contaminant emissions from cars, trucks, and industry. Figure 3 shows that higher level winds traveled across Pennsylvania and recirculated over the Mid-Atlantic where there are many coal fired power plants, before traveling back towards New Jersey and southern New England. The combination of these winds caused air pollution from mobile sources, industry, and power plants to be transported into New Jersey and other areas that experienced high ozone on August 15.

Figure 2. 48-hour Back Trajectories for Low Level Winds (10 meters)

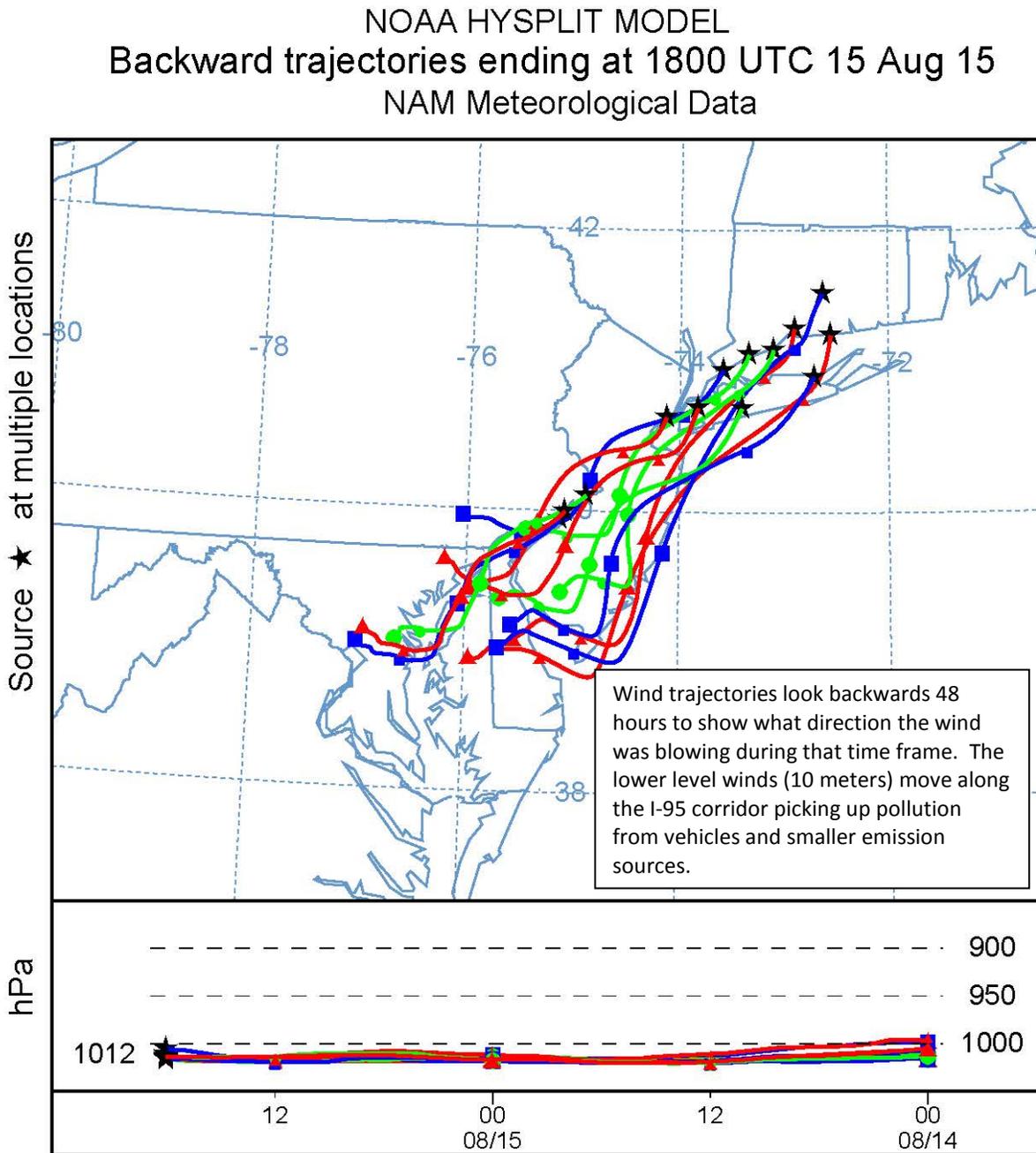
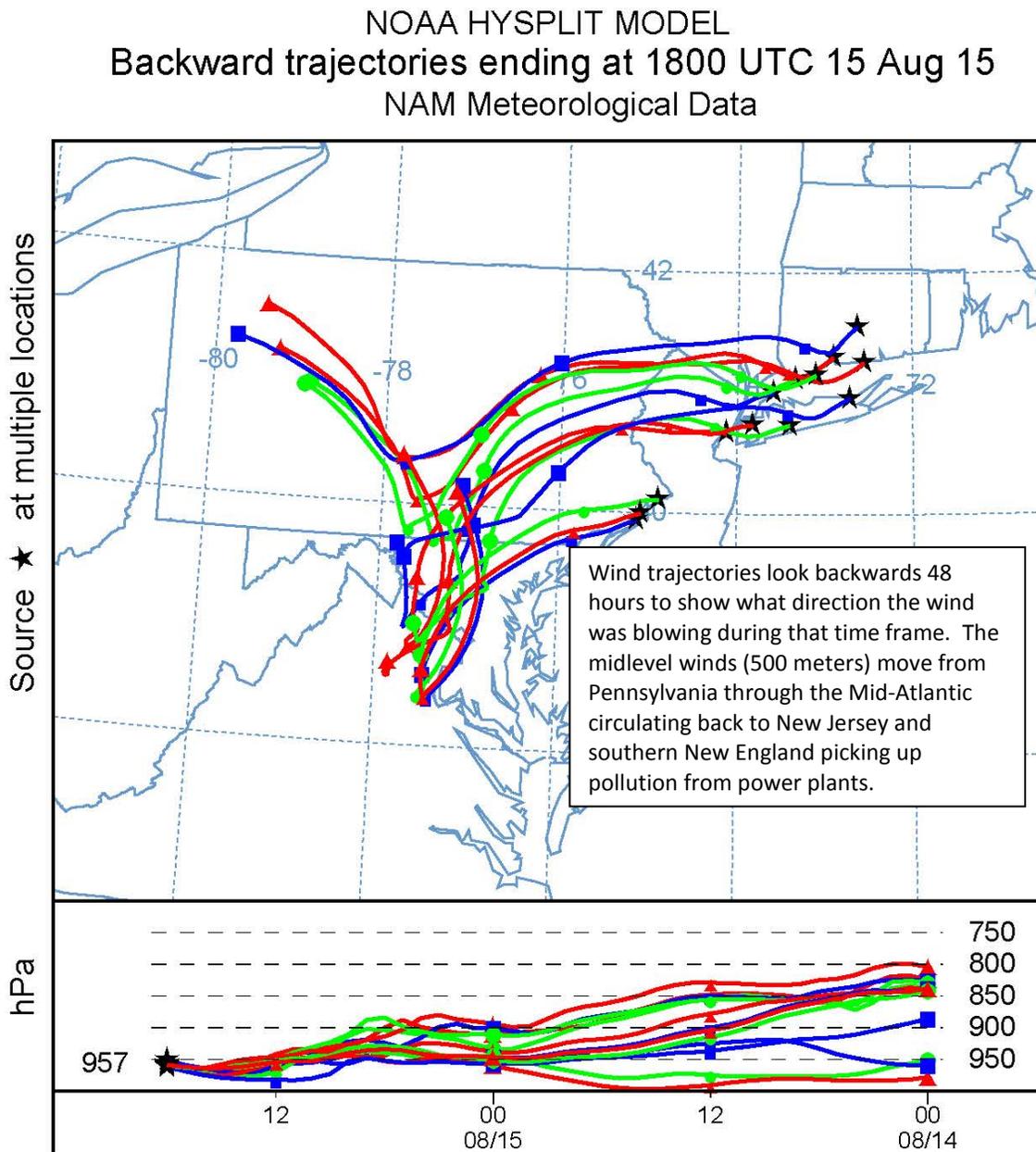


Figure 3. 48-hour Back Trajectories for Higher Level Winds (500 meters)



How is Smog Created?

Ground-level ozone, also known as smog, is an air pollutant known to cause a number of health effects and negatively impact air quality and the environment in the state of New Jersey. Smog is formed when oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) react in the presence of sunlight. Smog can irritate any set of lungs, but those with lung-related deficiencies should take extra precautions on bad ozone days.

Find Out About Air Quality Every Day

The What's Your Air Quality Today? page at <http://www.nj.gov/dep/cleanairnj/> tells you how to sign up to receive notifications and find out when your local air has reached unhealthy ozone levels.