***NYCCAS air pollution rasters***

*Created 05/10/2017  
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**What’s In This Dataset?**  *Citywide raster files of annual average predicted surface for nitrogen dioxide (NO2), fine particulate matter (PM2.5), black carbon (BC), and nitric oxide (NO); summer average for ozone (O3) and winter average for sulfur dioxide (SO2).*

**Who Manages This Data?**

*NYCDOHMH*

**Get Started With This Data:**

*The New York City Community Air Survey (NYCCAS) collects data as part of a study of neighborhood level variation of street-level ambient air quality in New York City.* Raw monitored data was adjusted for weather and season and modeled to account for nearby emission sources and landscape factors in order to describe distribution of pollution across NYC. *These models were used to predict at seasonal average pollution levels at unmonitored locations for December 2008- December 2019 (years 1-12).*  Seasonal *average values were averaged to create annual average predicted surfaces for nitrogen dioxide (NO2), fine particulate matter (PM2.5), black carbon (BC), and nitric oxide (NO); summer average values are reported for ozone (O3) and winter average for sulfur dioxide (SO2). Point values were smoothed using inverse distance weighting to create ESRI grid raster files at 300 m resolution, NAD83 New York Long Island State Plane FIPS, feet projection for use with GIS software (ESRI products, QGIS, R). Each raster cell is the average value predicted at that location based on NYCCAS monitoring and modeling. As these are estimated annual average levels produced by a statistical model, they are not comparable to short term localized monitoring or monitoring done for regulatory purposes. For description of NYCCAS design and Land Use Regression Modeling process see:* [*http://www1.nyc.gov/assets/doh/downloads/pdf/environmental/comm-air-survey-08-16.pdf*](http://www1.nyc.gov/assets/doh/downloads/pdf/environmental/comm-air-survey-08-16.pdf)

*Example questions:*

1. *What parts of NYC have highest average levels of fine particulates?*
2. *Are high levels of NOx (NO and NO2) near certain kinds of activities, like tall buildings or highways?*
3. *Have the levels in my neighborhood gone down or up over the 11 years?*

**Columns (Fields, Attributes):**

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Column Description** | **Units of measure** |
| aa1\_pm300m | predicted annual average fine particulate matter <2.5 microns, Dec 2008-Dec 2009, | units: ug/m3 |
| aa2\_pm300m | predicted annual average fine particulate matter <2.5 microns, Dec 2009-Dec 2010, | units: ug/m3 |
| aa3\_pm300m | predicted annual average fine particulate matter <2.5 microns, Dec 2010-Dec 2011 | units: ug/m3 |
| aa4\_pm300m | predicted annual average fine particulate matter <2.5 microns, Dec 2011-Dec 2012 | units: ug/m3 |
| aa5\_pm300m | predicted annual average fine particulate matter <2.5 microns, Dec 2012-Dec 2013 | units: ug/m3 |
| aa6\_pm300m | predicted annual average fine particulate matter <2.5 microns, Dec 2013-Dec 2014 | units: ug/m3 |
| aa7\_pm300m | predicted annual average fine particulate matter <2.5 microns, Dec 2014-Dec 2015 | units: ug/m3 |
| aa8\_pm300m | predicted annual average fine particulate matter <2.5 microns, Dec 2015-Dec 2016 | units: ug/m3 |
| aa9\_pm300m | predicted annual average fine particulate matter <2.5 microns, Dec 2016-Dec 2017 | units: ug/m3 |
| aa10\_pm300m | predicted annual average fine particulate matter <2.5 microns, Dec 2017-Dec 2018 | units: ug/m3 |
| aa11\_pm300m | predicted annual average fine particulate matter <2.5 microns, Dec 2018-Dec 2019 | units: ug/m3 |
| aa1\_no2300m | predicted annual average Nitrogen dioxide, Dec 2008-Dec 2009, | units: ppb |
| aa2\_no2300m | predicted annual average Nitrogen dioxide, Dec 2009-Dec 2010 | units: ppb |
| aa3\_no2300m | predicted annual average Nitrogen dioxide, Dec 2010-Dec 2011 | units: ppb |
| aa4\_no2300m | predicted annual average Nitrogen dioxide, Dec 2011-Dec 2012 | units: ppb |
| aa5\_no2300m | predicted annual average Nitrogen dioxide, Dec 2012-Dec 2013 | units: ppb |
| aa6\_no2300m | predicted annual average Nitrogen dioxide, Dec 2013-Dec 2014 | units: ppb |
| aa7\_no2300m | predicted annual average Nitrogen dioxide, Dec 2014-Dec 2015 | units: ppb |
| **Column Name** | **Column Description** | **units of measure** |
| aa8\_no2300m | predicted annual average Nitrogen dioxide, Dec 2015-Dec 2016 | units: ppb |
| aa9\_no2300m | predicted annual average Nitrogen dioxide, Dec 2016-Dec 2017 | units: ppb |
| aa10\_no2300m | predicted annual average Nitrogen dioxide, Dec 2017-Dec 2018 | units: ppb |
| aa11\_no2300m | predicted annual average Nitrogen dioxide, Dec 2018-Dec 2019 | units: ppb |
| aa1\_no300m | predicted annual average nitric oxide, Dec 2008-Dec 2009 | units: ppb |
| aa2\_no300m | predicted annual average nitric oxide, Dec 2009-Dec 2010 | units: ppb |
| aa3\_no300m | predicted annual average nitric oxide, Dec 2010-Dec 2011 | units: ppb |
| aa4\_no300m | predicted annual average nitric oxide, Dec 2011-Dec 2012 | units: ppb |
| aa5\_no300m | predicted annual average nitric oxide, Dec 2012-Dec 2013 | units: ppb |
| aa6\_no300m | predicted annual average nitric oxide, Dec 2013-Dec 2014 | units: ppb |
| aa7\_no300m | predicted annual average Nitric oxide, Dec 2014-Dec 2015 | units: ppb |
| aa8\_no300m | predicted annual average Nitric oxide, Dec 2015-Dec 2016 | units: ppb |
| aa9\_no300m | predicted annual average Nitric oxide, Dec 2016-Dec 2017 | units: ppb |
| aa10\_no300m | predicted annual average Nitric oxide, Dec 2017-Dec 2018 | units: ppb |
| aa11\_no300m | predicted annual average Nitric oxide, Dec 2018-Dec 2019 | units: ppb |
| w1\_so2300m | predicted winter average sulfur dioxide, Dec 2008-Feb 2009 | units: ppb |
| w2\_so2300m | predicted winter average sulfur dioxide, Dec 2009-Feb 2010 | units: ppb |
| w3\_so2300m | predicted winter average sulfur dioxide, Dec 2010-Feb 2011 | units: ppb |
| w4\_so2300m | predicted winter average sulfur dioxide, Dec 2011-Feb 2012 | units: ppb |
| w5\_so2300m | predicted winter average sulfur dioxide, Dec 2012-Feb 2013 | units: ppb |
| w6\_so2300m | predicted winter average sulfur dioxide, Dec 2013-Feb 2014 | units: ppb |
| **Column Name** | **Column Description** | **units of measure** |
| w7\_so2300m | predicted winter average sulfur dioxide, Dec 2014-Feb 2015 | units: ppb |
| w8\_so2300m | predicted winter average sulfur dioxide, Dec 2015-Feb 2016 | units: ppb |
| s1\_o3300m | predicted summer average ozone, June-Aug 2009 | units: ppb |
| s2\_o3300m | predicted summer average ozone, June-Aug 2010 | units: ppb |
| s3\_o3300m | predicted summer average ozone, June-Aug 2011 | units: ppb |
| s4\_o3300m | predicted summer average ozone, June-Aug 2012 | units: ppb |
| s5\_o3300m | predicted summer average ozone, June-Aug 2013 | units: ppb |
| s6\_o3300m | predicted summer average ozone, June-Aug 2014 | units: ppb |
| s7\_o3300m | predicted summer average ozone, June-Aug 2015 | units: ppb |
| s8\_o3300m | predicted summer average ozone, June-Aug 2016 | units: ppb |
| s9\_o3300m | predicted summer average ozone, June-Aug 2017 | units: ppb |
| s10\_o3300m | predicted summer average ozone, June-Aug 2018 | units: ppb |
| s11\_o3300m | predicted summer average ozone, June-Aug 2019 | units: ppb |
| aa1\_bc300m | predicted annual average black carbon, Dec 2008-Dec 2009, | units: abs |
| aa2\_bc300m | predicted annual average black carbon, Dec 2009-Dec 2010 | units: abs |
| aa3\_bc300m | predicted annual average black carbon, Dec 2010-Dec 2011 | units: abs |
| aa4\_bc300m | predicted annual average black carbon, Dec 2011-Dec 2012 | units: abs |
| aa5\_bc300m | predicted annual average black carbon, Dec 2012-Dec 2013 | units: abs |
| aa6\_bc300m | predicted annual average black carbon, Dec 2013-Dec 2014 | units: abs |
| aa7\_bc300m | predicted annual average black carbon, Dec 2014-Dec 2015 | units: abs |
| aa8\_bc300m | predicted annual average black carbon, Dec 2015-Dec 2016 | units: abs |
| aa9\_bc300m | predicted annual average black carbon, Dec 2016-Dec 2017 | units: abs |
| aa10\_bc300m | predicted annual average black carbon, Dec 2017-Dec 2018 | units: abs |
| aa11\_bc300m | predicted annual average black carbon, Dec 2018-Dec 2019 | units: abs |
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