NYCCAS air pollution rasters

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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 2018 (years 1-10).* 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

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 9 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
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
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
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
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

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
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