NOx and the City

PAUL J. MILLER
NORTHEAST STATES FOR COORDINATED AIR USE MANAGEMENT (NESCAUM)
HAQASTA5
PHOENIX, AZ
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Mid-Atlantic/Northeast Visibility Union (MANE-VU) Status

• State SIPs are currently being written and will be submitted well before 2021

• Sulfates and nitrates are the dominant RH species in MANE-VU region
  ◦ Nitrate share growing as sulfate decreasing

• OCM, LAC and CM are near natural conditions; occasional long range transport of wildfire smoke

From Tom Downs, Maine Dept. of Environmental Protection
Class I Sites in MANE-VU and to West
20% Most Impaired Visibility Days: 2000-04 vs. 2013-17

- Brigantine now more impaired than Class I areas closer to large coal power plants
- Has largest nitrate share
Brigantine 20% Most Impaired Days by Season 2000-2017
Summer/Winter 2015 Trajectories on 20% Most Impaired Days

[Charts and graphs showing Trajectories for specific summer and winter dates in Brigantine, NJ, with details on hourly endpoints for 20% impaired days in 2015.]

Legend:
- **Summer Dates:**
  - 20150620
  - 20150720
  - 20150729
  - 20150825
  - 20150631
- **Extinction (Min^{-1})**
  - Rayleigh
  - Sea Salt
  - Sulfate
  - Coarse Mass
  - Elemental Carbon
  - Organic Matter
  - Nitrate

Created by Martha Webster, MEDIP 2015 using the 20% impaired days per day as determined by Dhiraj Lekha.
A NYC NO₂ “Volcano” – OMI

Credit: Luke Valin, EPA
July 2, 2018 Afternoon GCAS/TropOMI

GCAS NO$_2$ Differential Slant Columns
~18:00-21:00 UTC

Credits: Laura Judd, NASA & Michael Geigert, CT DEEP
Haze Questions

• Is winter nitrate from the NYC plume?
• Or is it “local” in NJ?
• Does Ohio Valley NOx have impact?
Smoke
Western Smoke Plumes in Summer 2018

Fires and smoke (color) from NOAA Hazard Mapping System (HMS)  https://www.ospo.noaa.gov/Products/land/hms.html
July 2, 2018 Compared to Clean Day
LISTOS Data Archive in Development

The website is located at:
https://www-air.larc.nasa.gov/missions/listos/index.html
Thank you

Paul J. Miller
Executive Director
NESCAUM
617-259-2016
pmiller[at]nescaum.org