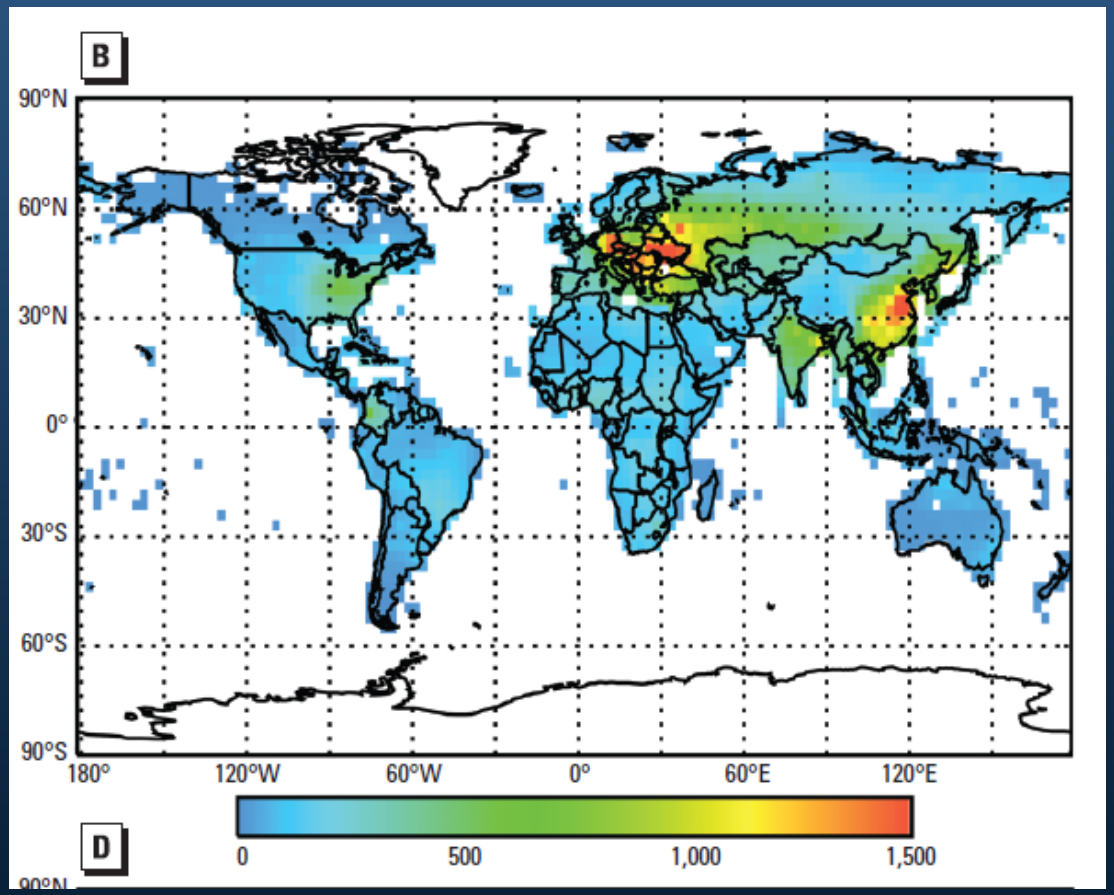
Welcome!

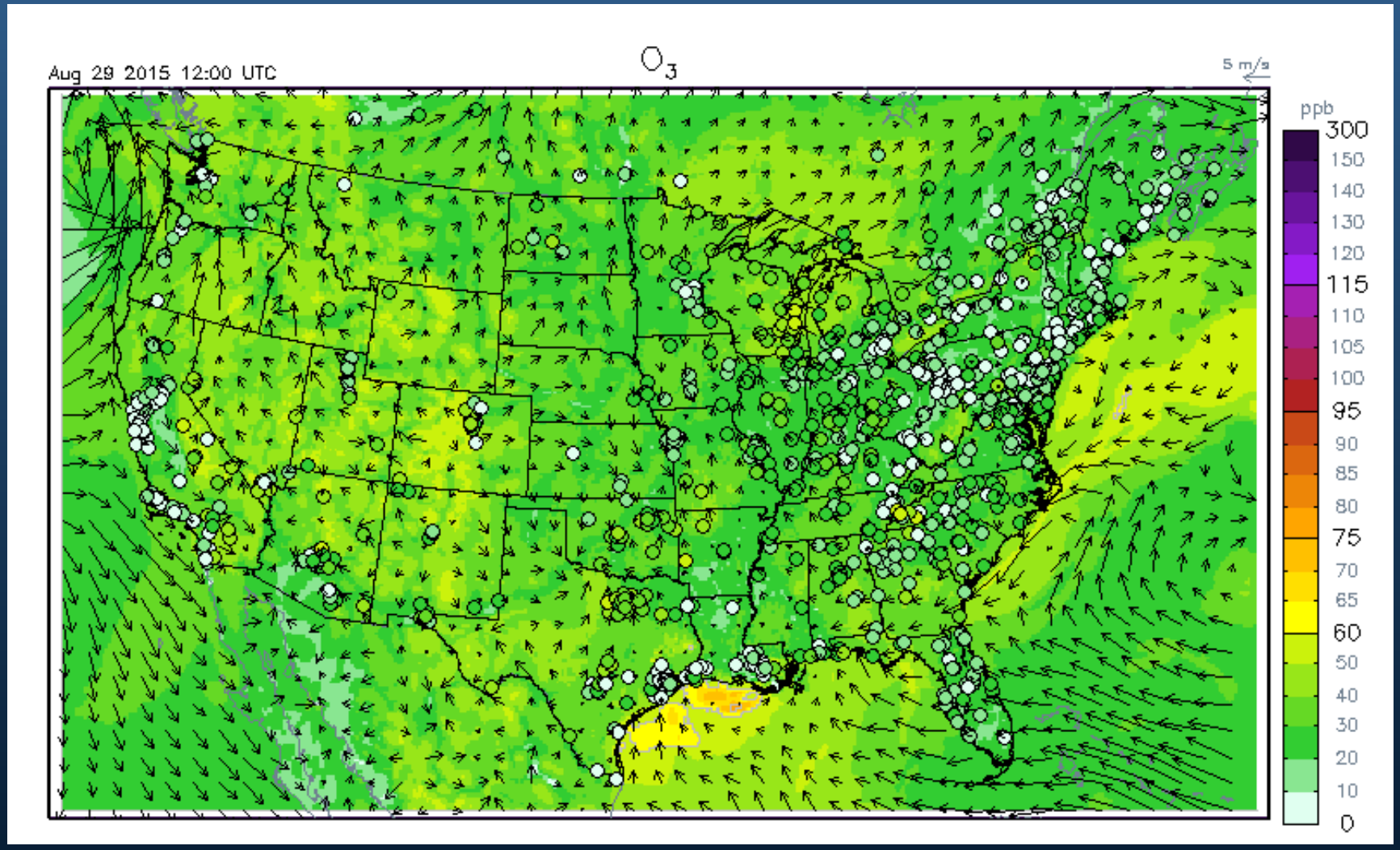
Steve Fine
Director, NOAA Air Resources Laboratory
and
Deputy Assistant Administrator for
Laboratories and Cooperative Institutes, NOAA Research

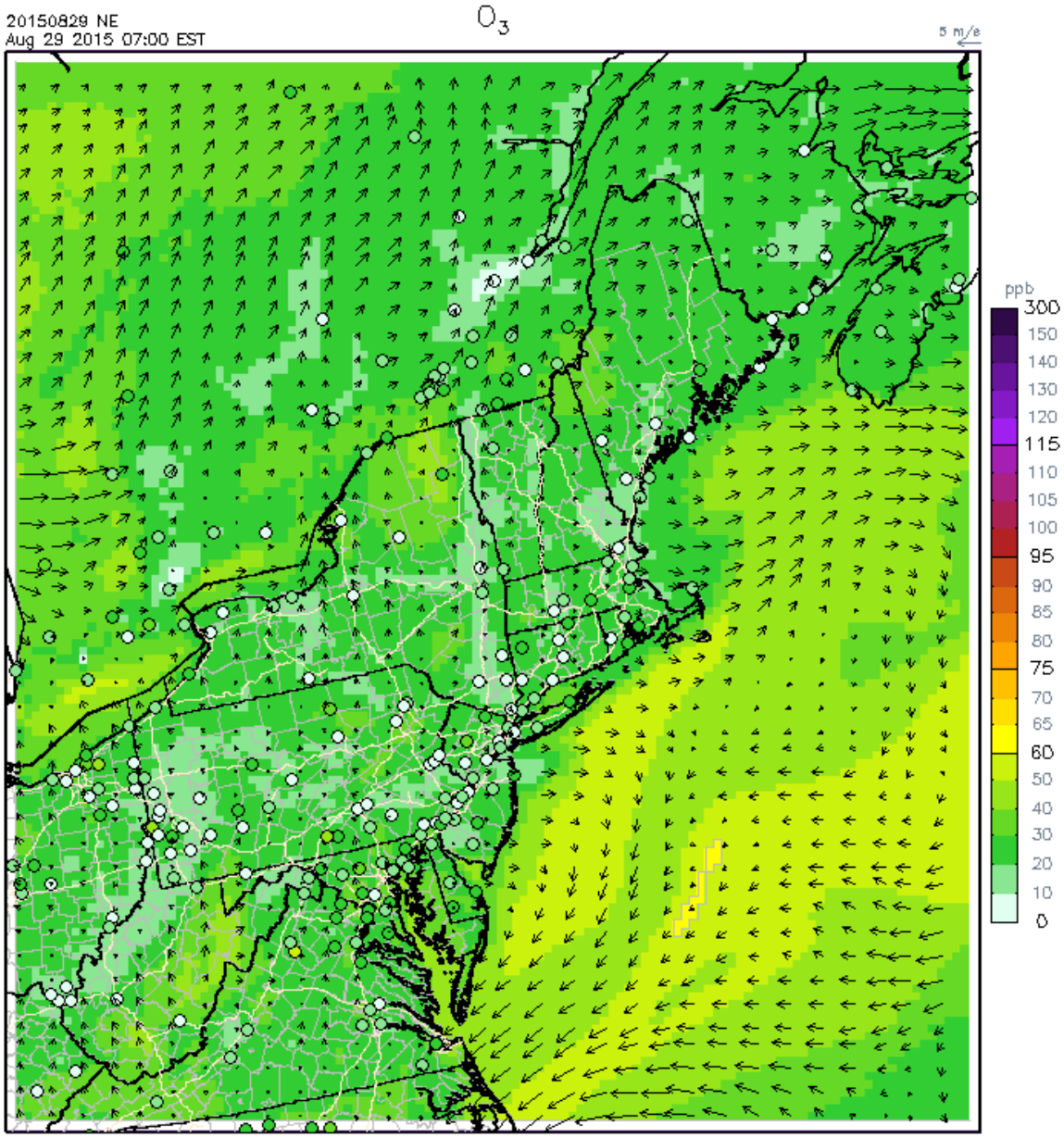
Estimated annual premature mortality attributed to anthropogenic PM2.5



Cardiopulmonary mortality per 10^6 people

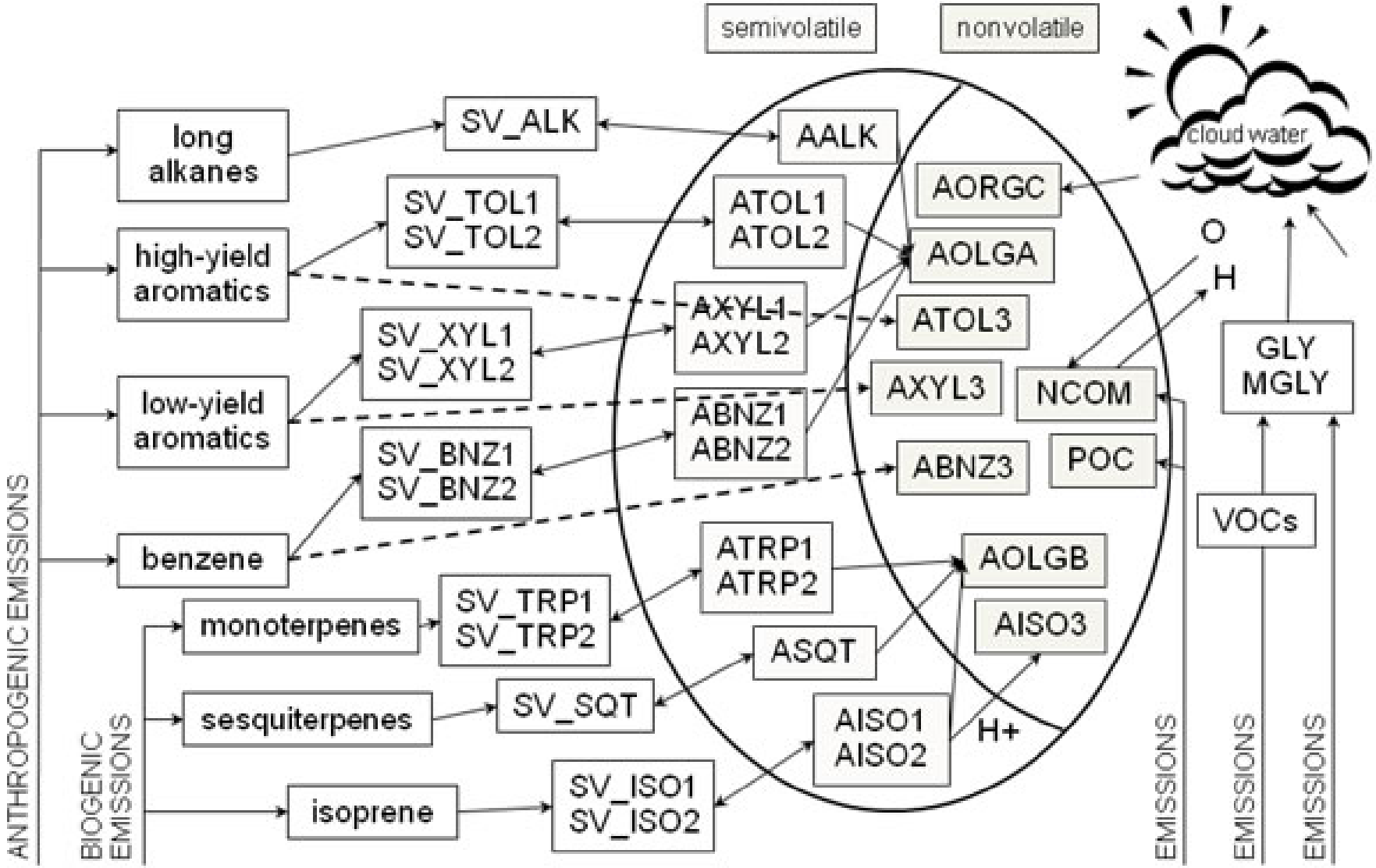
Anenberg et al., 2010


Aug 29 2015 12:00 UTC
O_3
5 m/s
ppb
300
150
140
130
120
115
110
105
100
95
90
85
80
75
70
65
60
50
40
30
20
10
0

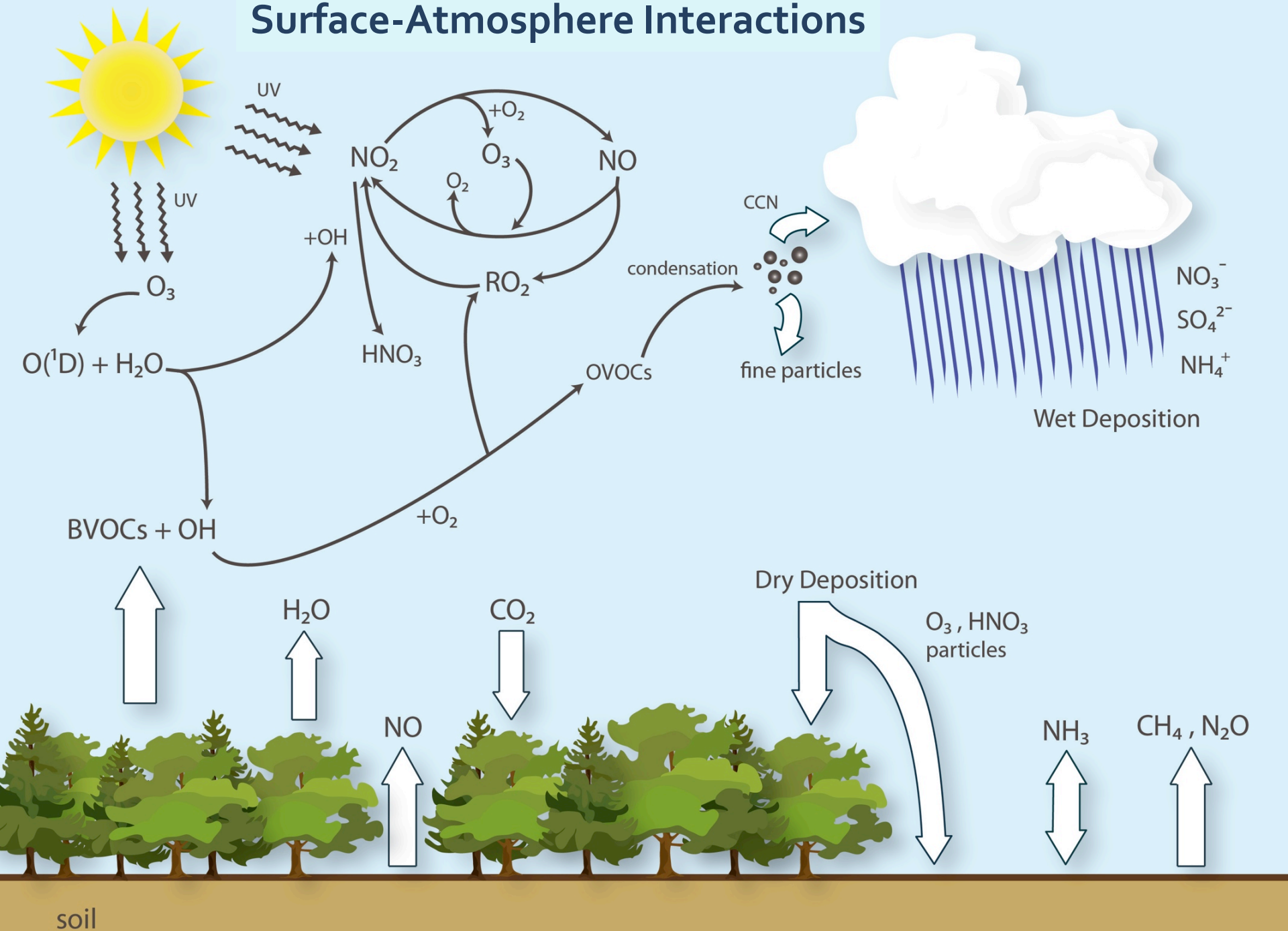

20150829 NE
Aug 29 2015 07:00 EST
O_3
5 m/s
ppb
300
150
140
130
120
115
110
105
100
95
90
85
80
75
70
65
60
50
40
30
20
10
0

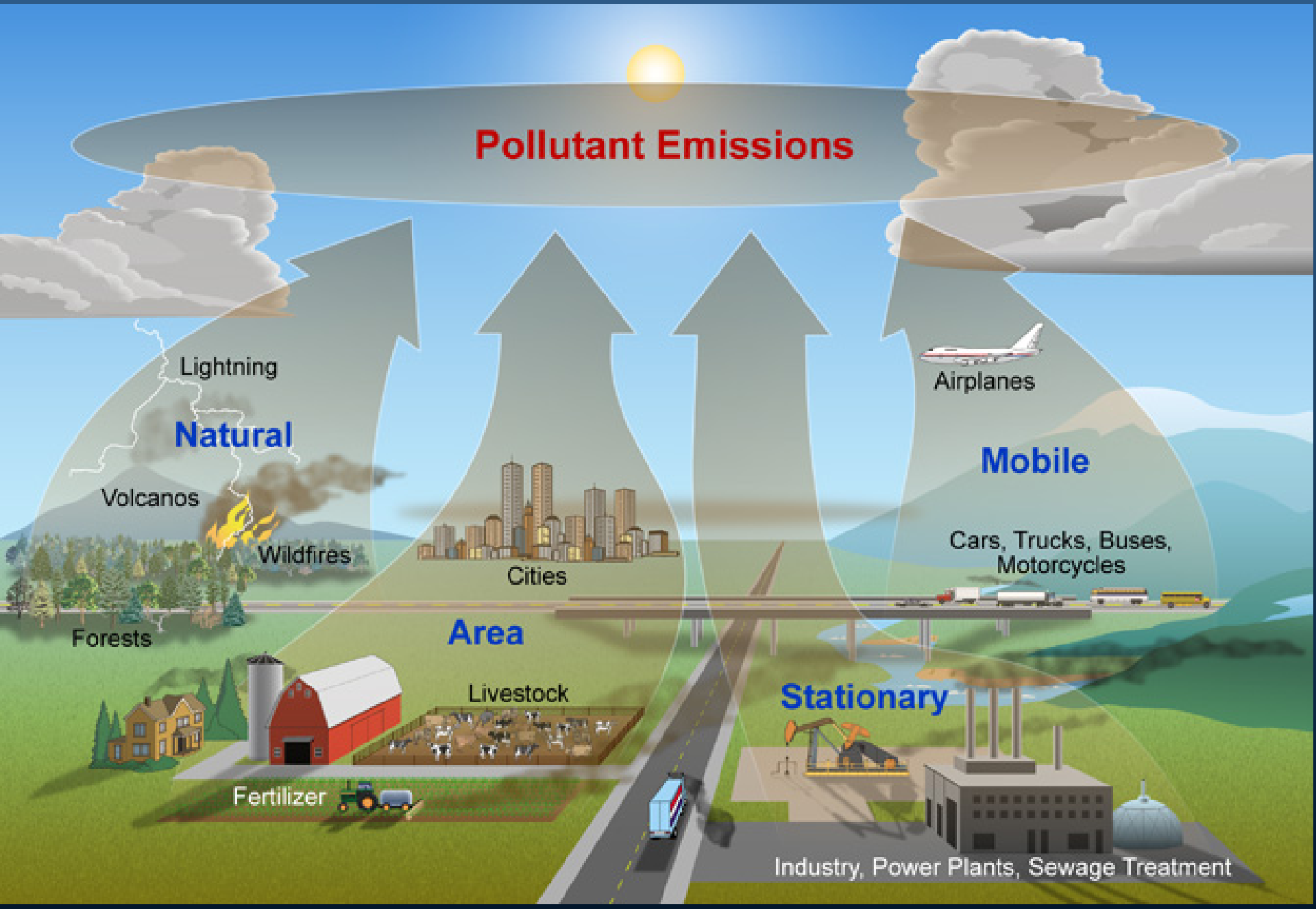
Challenges

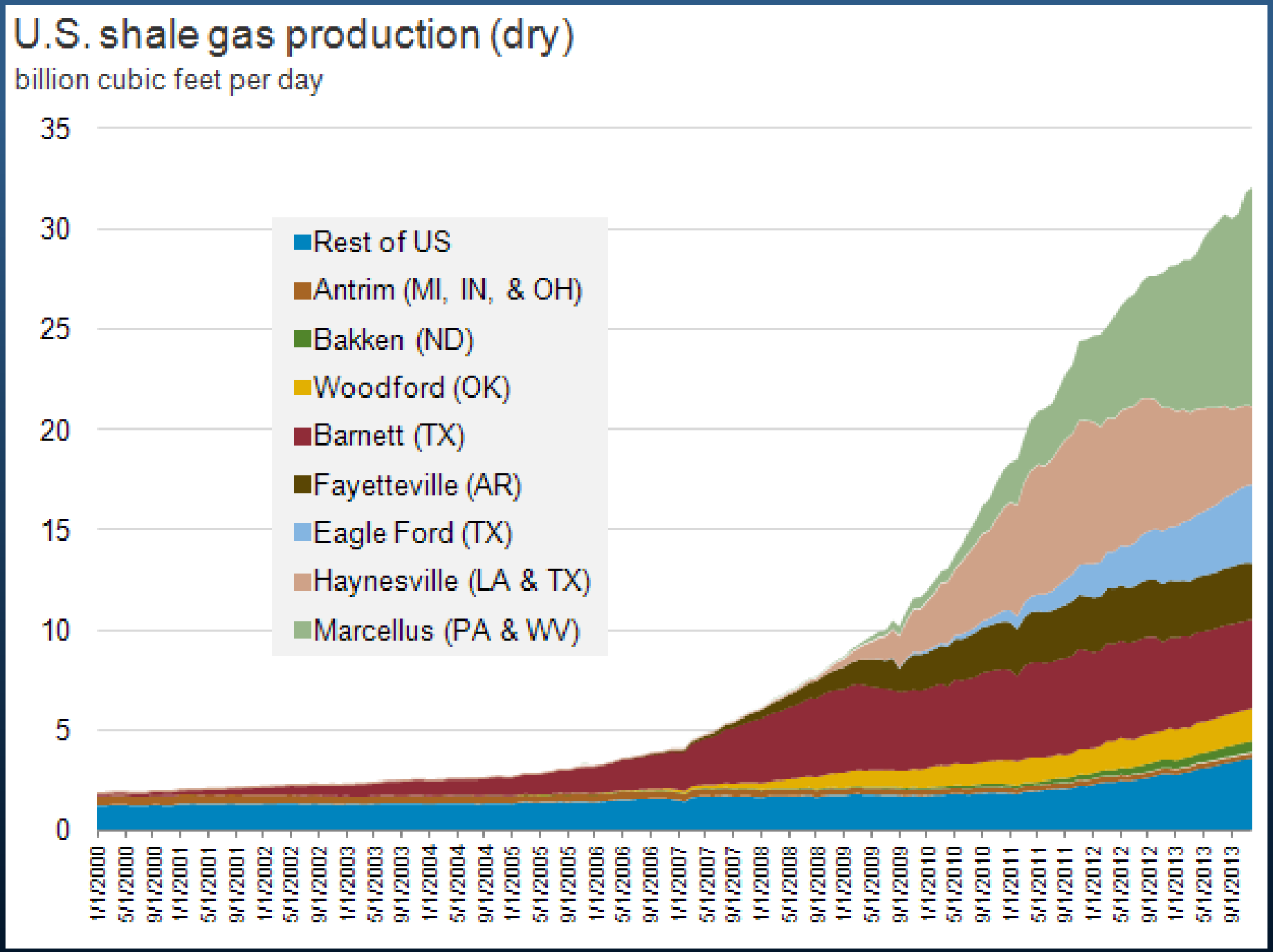
CMAQ SOA
Version 5.0



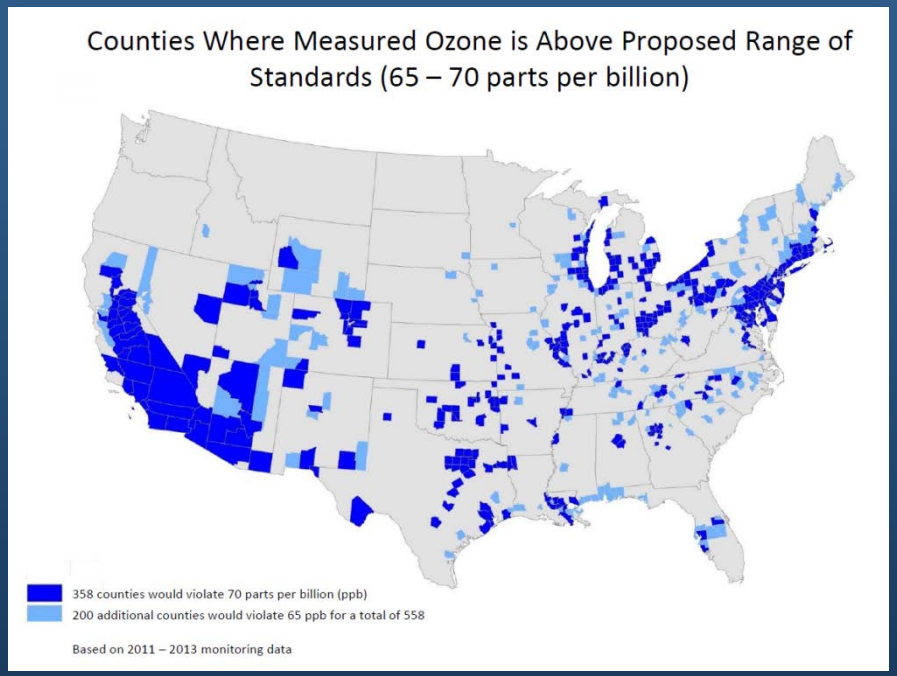
Surface-Atmosphere Interactions

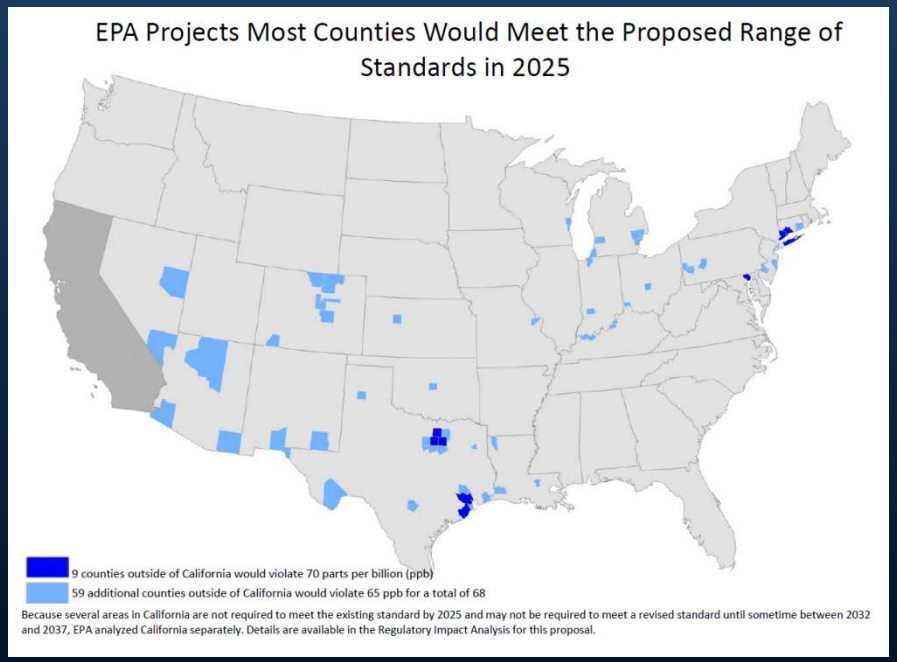



Pollutant Emissions
Lightning
Natural
Volcanos
Wildfires
Forests
Cities
Area
Livestock
Fertilizer
Airplanes
Mobile
Cars, Trucks, Buses, Motorcycles
Stationary
Industry, Power Plants, Sewage Treatment

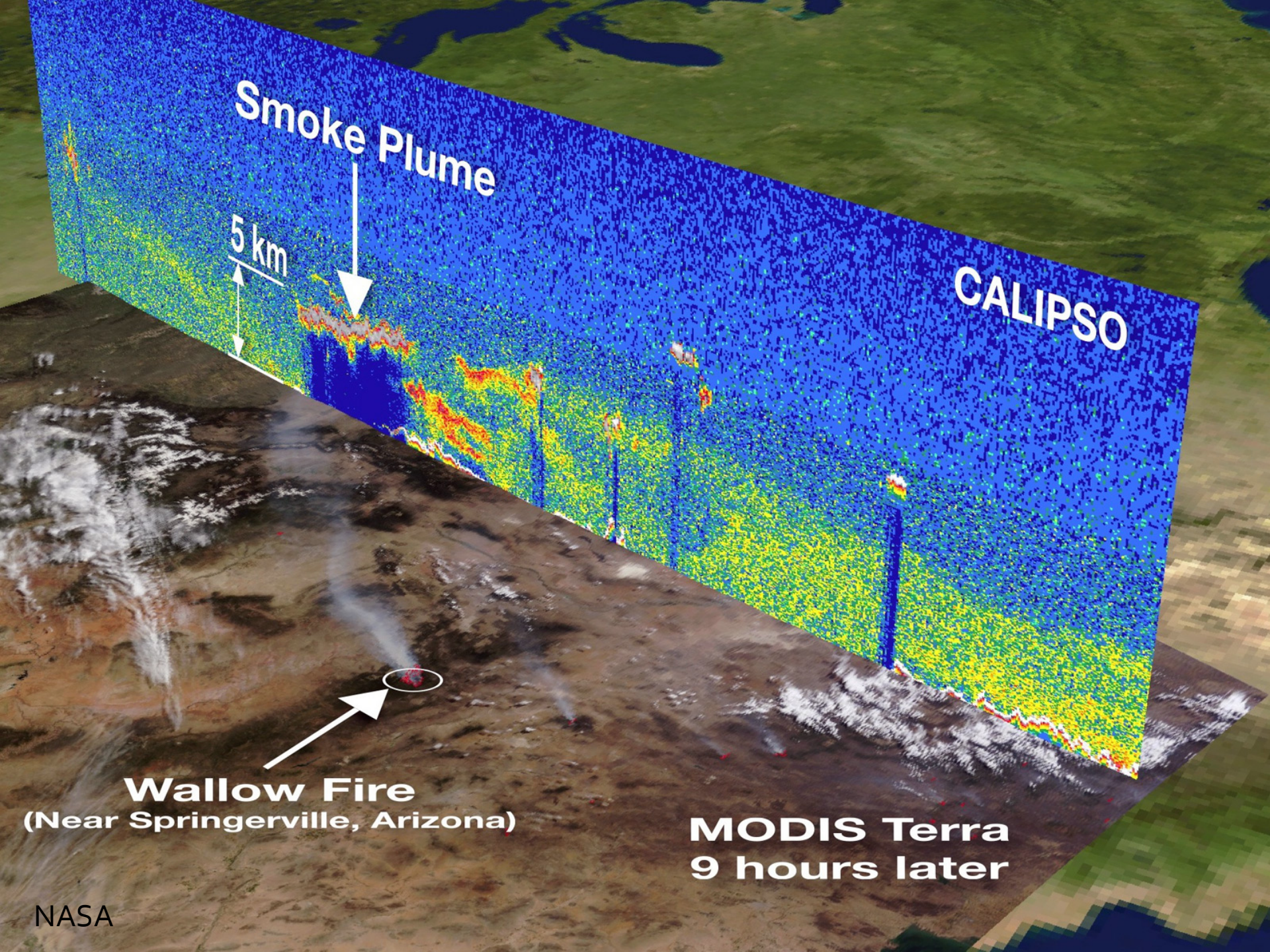


U.S. Energy Information Administration

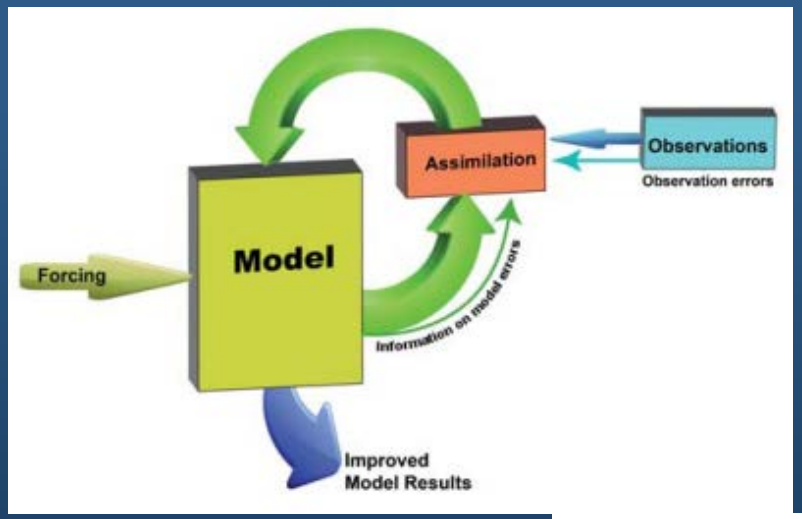

Counties Where Measured Ozone is Above Proposed Range of Standards (65 – 70 parts per billion)
358 counties would violate 70 parts per billion (ppb)
200 additional counties would violate 65 ppb for a total of 558
Based on 2011 – 2013 monitoring data


EPA Projects Most Counties Would Meet the Proposed Range of Standards in 2025
9 counties outside of California would violate 70 parts per billion (ppb)
59 additional counties outside of California would violate 65 ppb for a total of 68
Because several areas in California are not required to meet the existing standard by 2025 and may not be required to meet a revised standard until sometime between 2032 and 2037, EPA analyzed California separately. Details are available in the Regulatory Impact Analysis for this proposal.

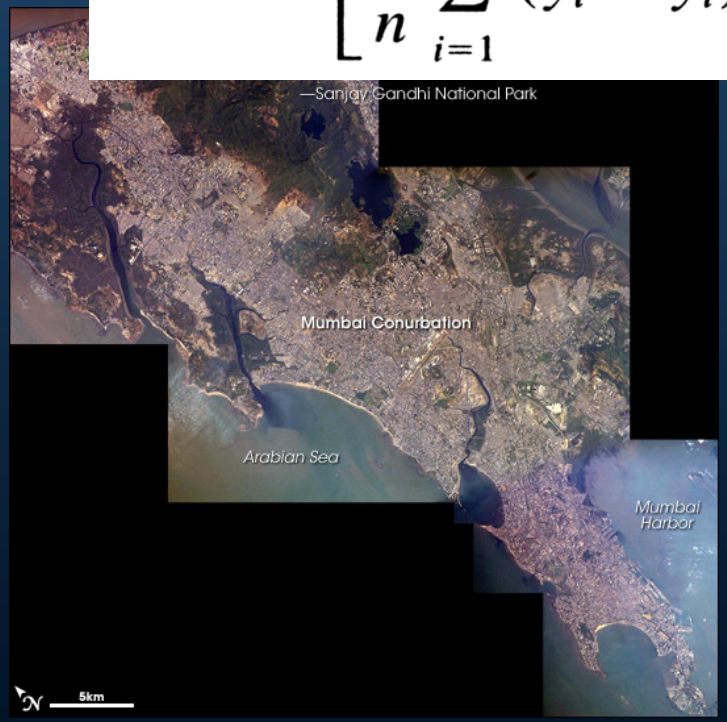
U.S. EPA


Smoke Plume
5 km
CALIPSO
Wallow Fire
(Near Springerville, Arizona)
MODIS Terra
9 hours later

NASA



$$\text{rmse} = \left[\frac{1}{n} \sum_{i=1}^{n} (y_i - \tilde{y}_i)^2 \right]^{1/2}$$



Weather

Chemistry