



National Institute of Environmental Health Sciences
Your Environment. Your Health.

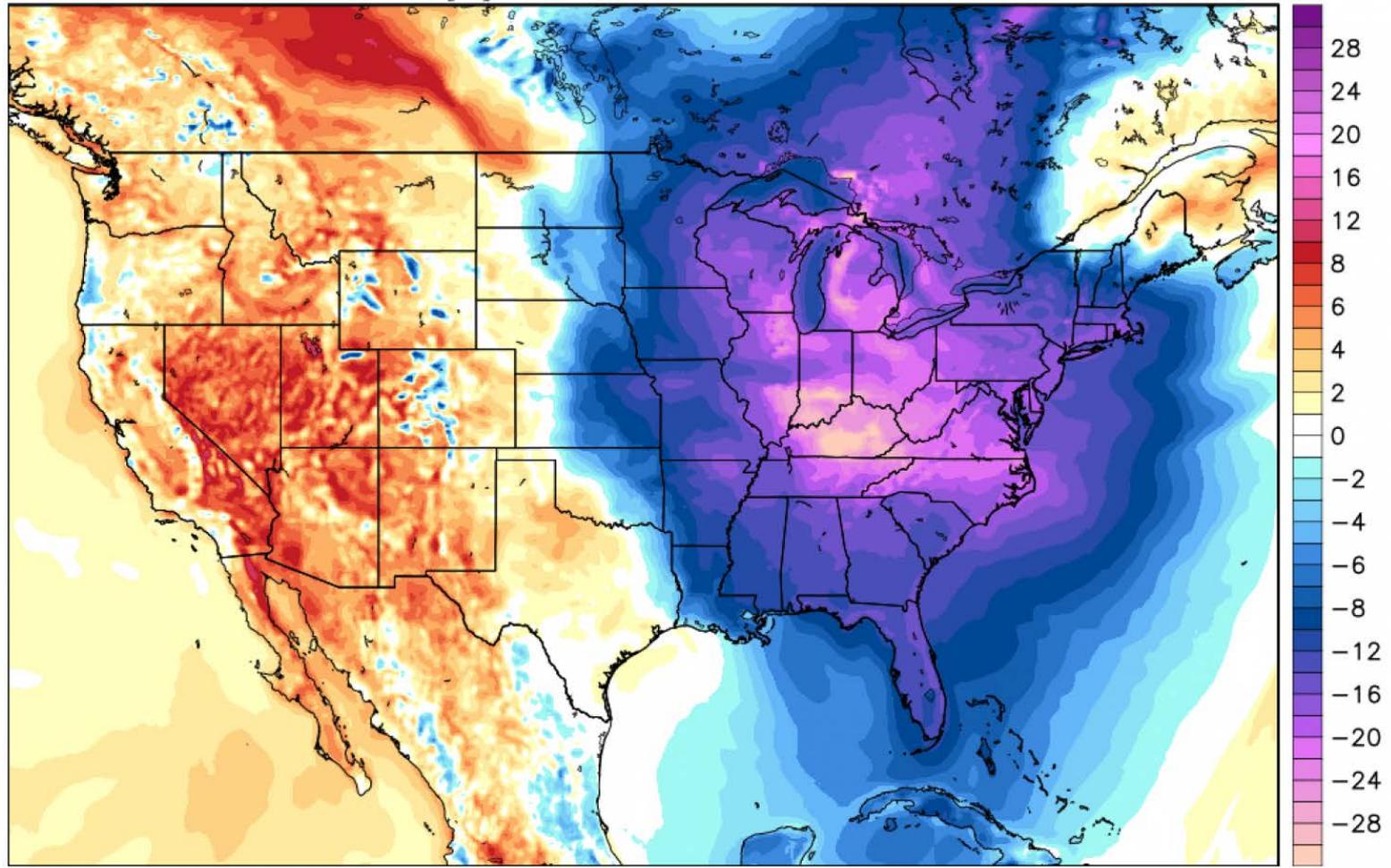
Climate Justice and Public Health

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HHS Climate Justice Conference
Research Triangle Park, NC
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In a warming world, if you're cold, someone else is hot





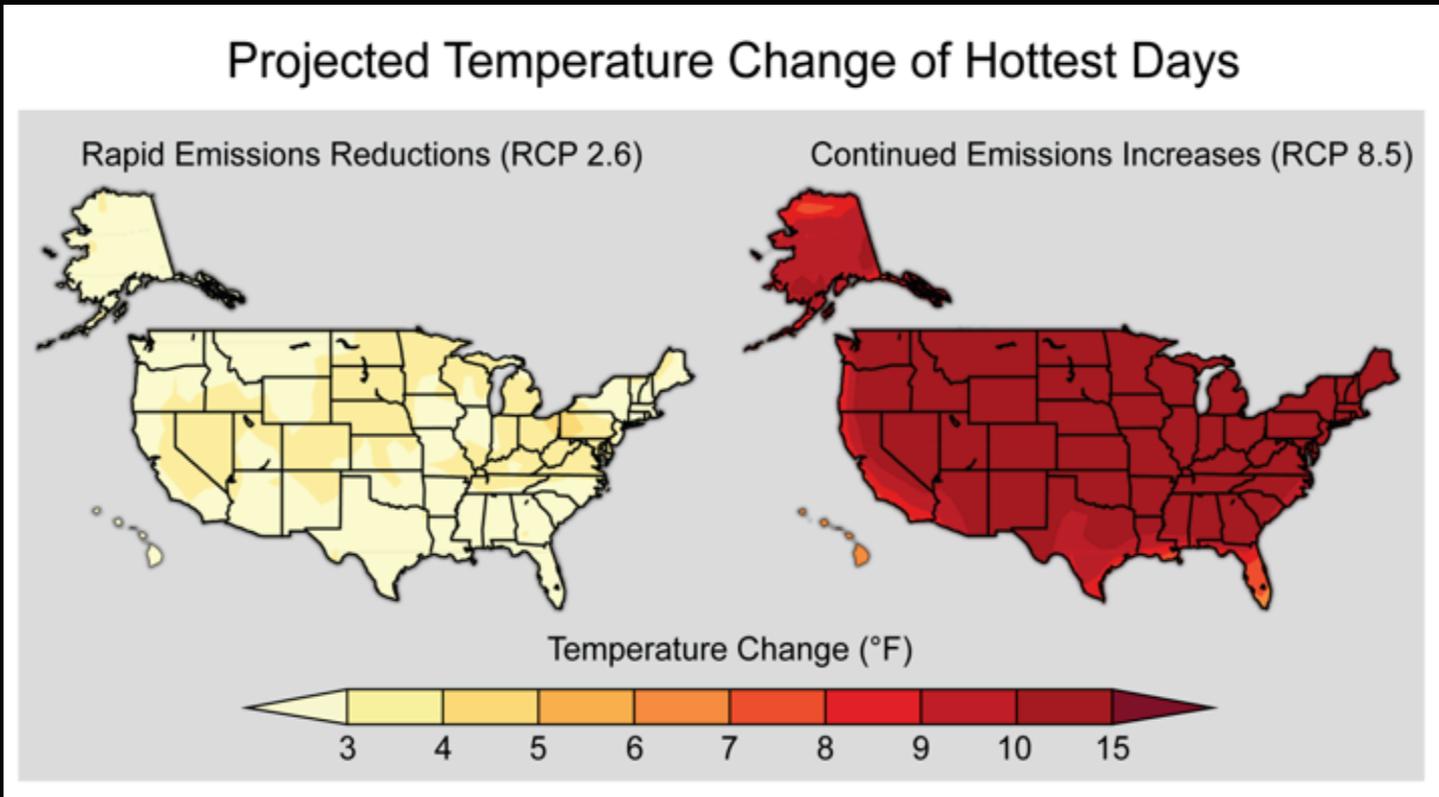
***Climate change is
global.
Climate change
impacts are local.***

Climate change: threats as well as opportunities





Projected Temperature Change of Hottest Days

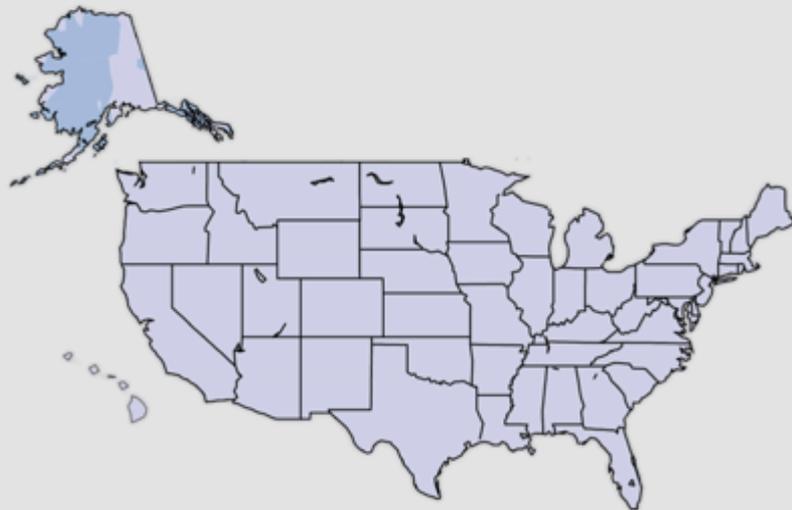




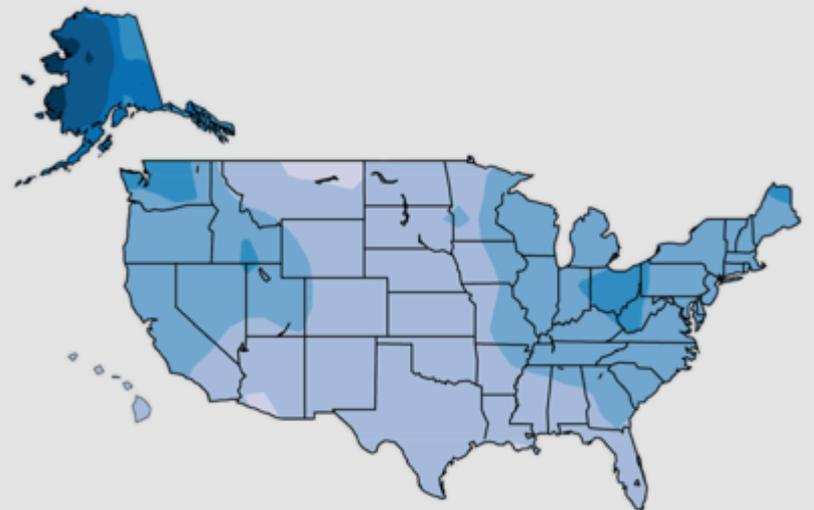
Projected Change in Heavy Precipitation Events

Projected Change in Heavy Precipitation Events

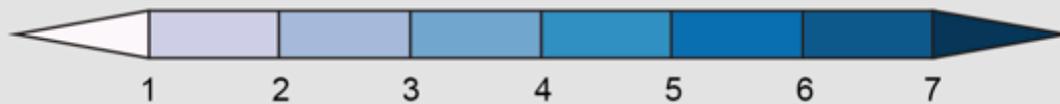
Rapid Emissions Reductions (RCP 2.6)



Continued Emissions Increases (RCP 8.5)

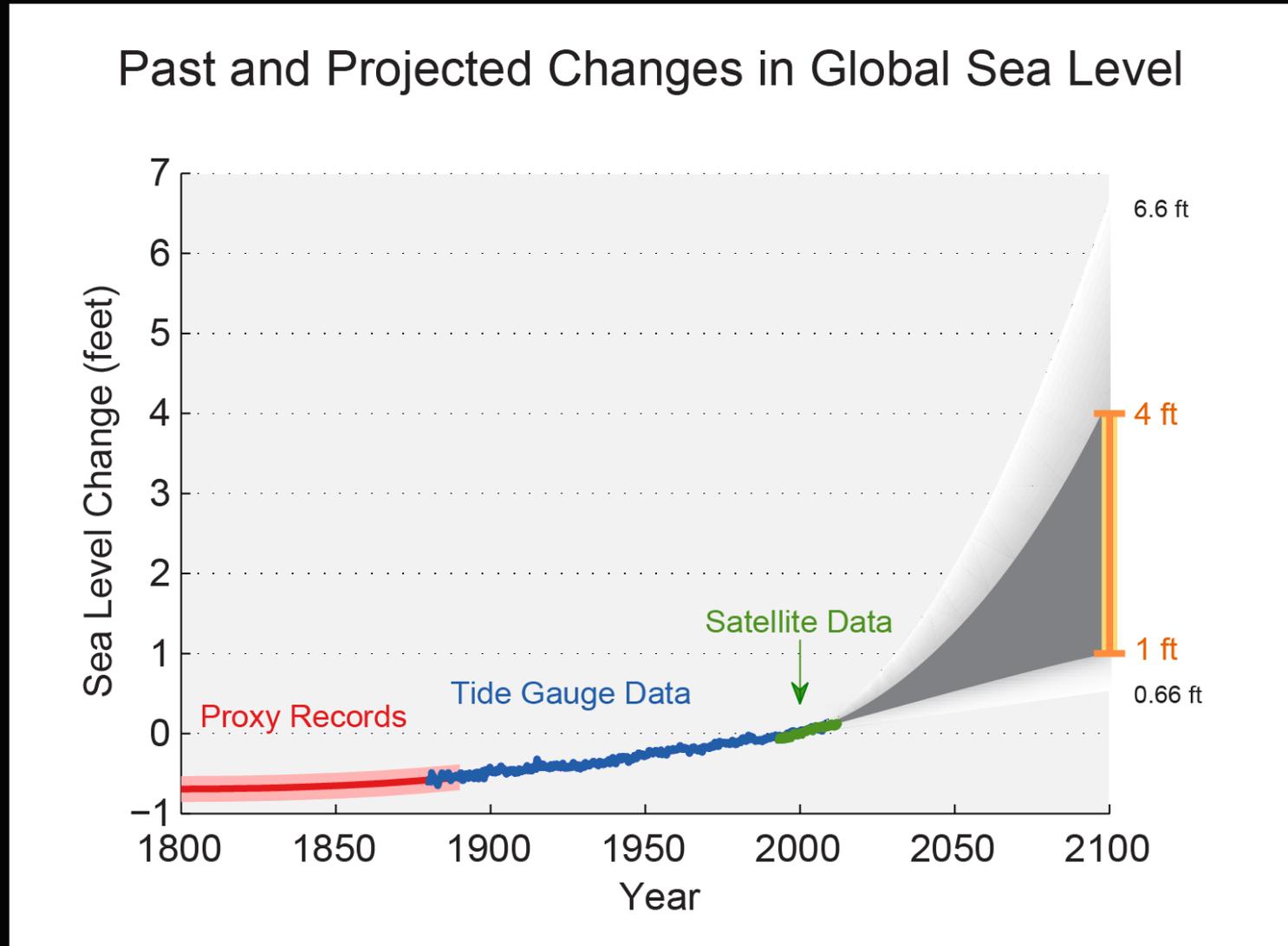


Future Change Multiplier





Past and Projected Changes in Global Sea Level



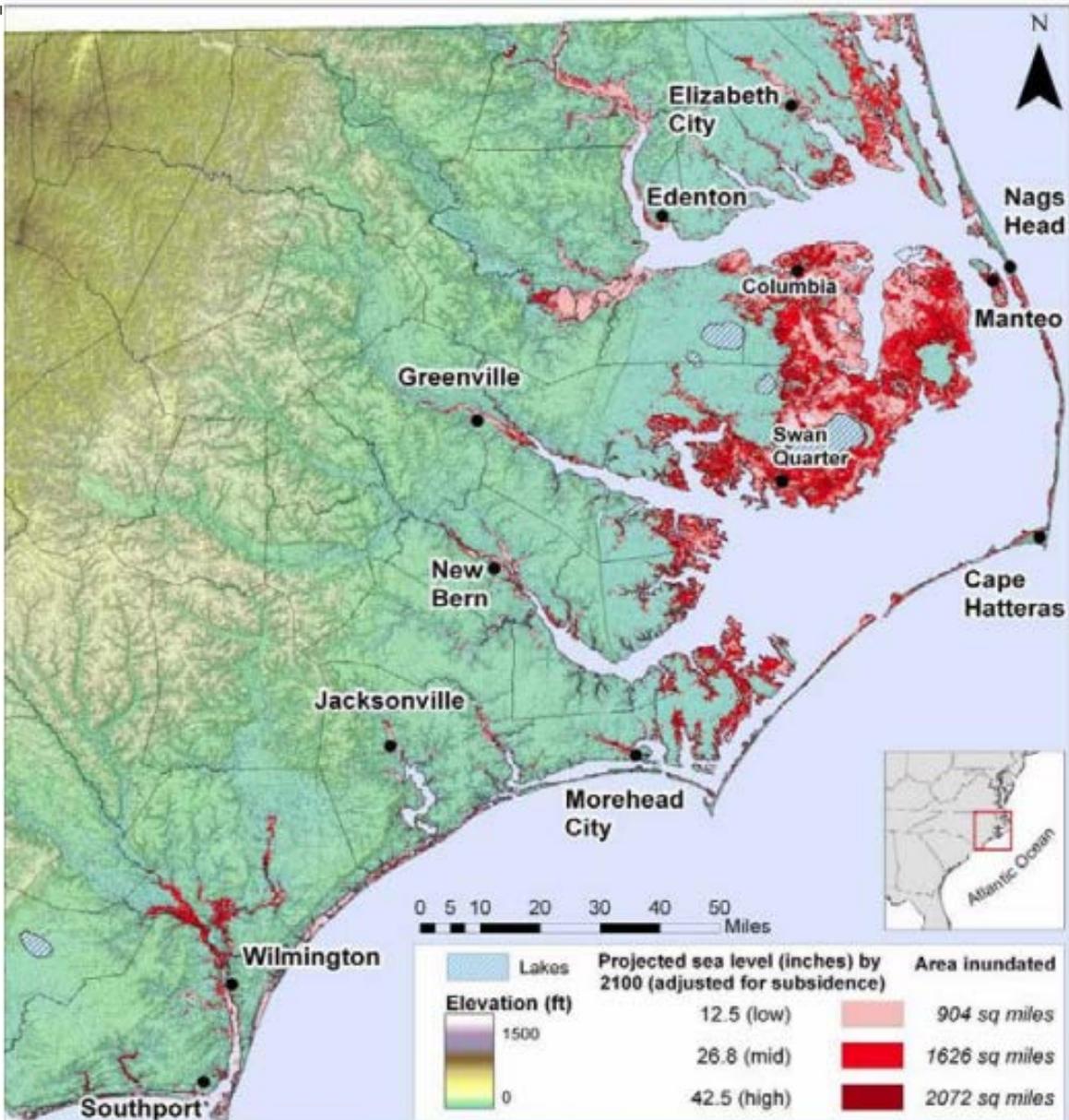
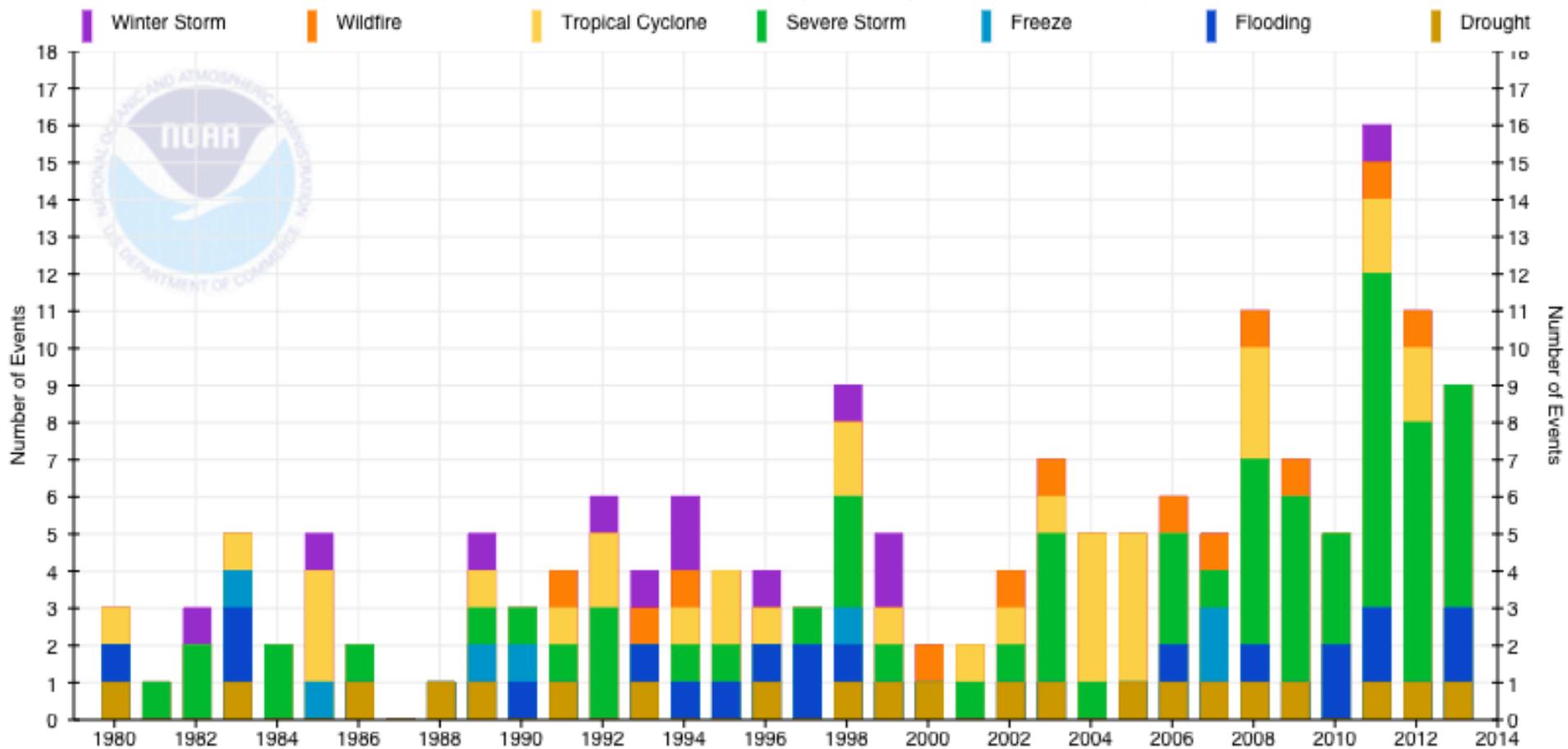


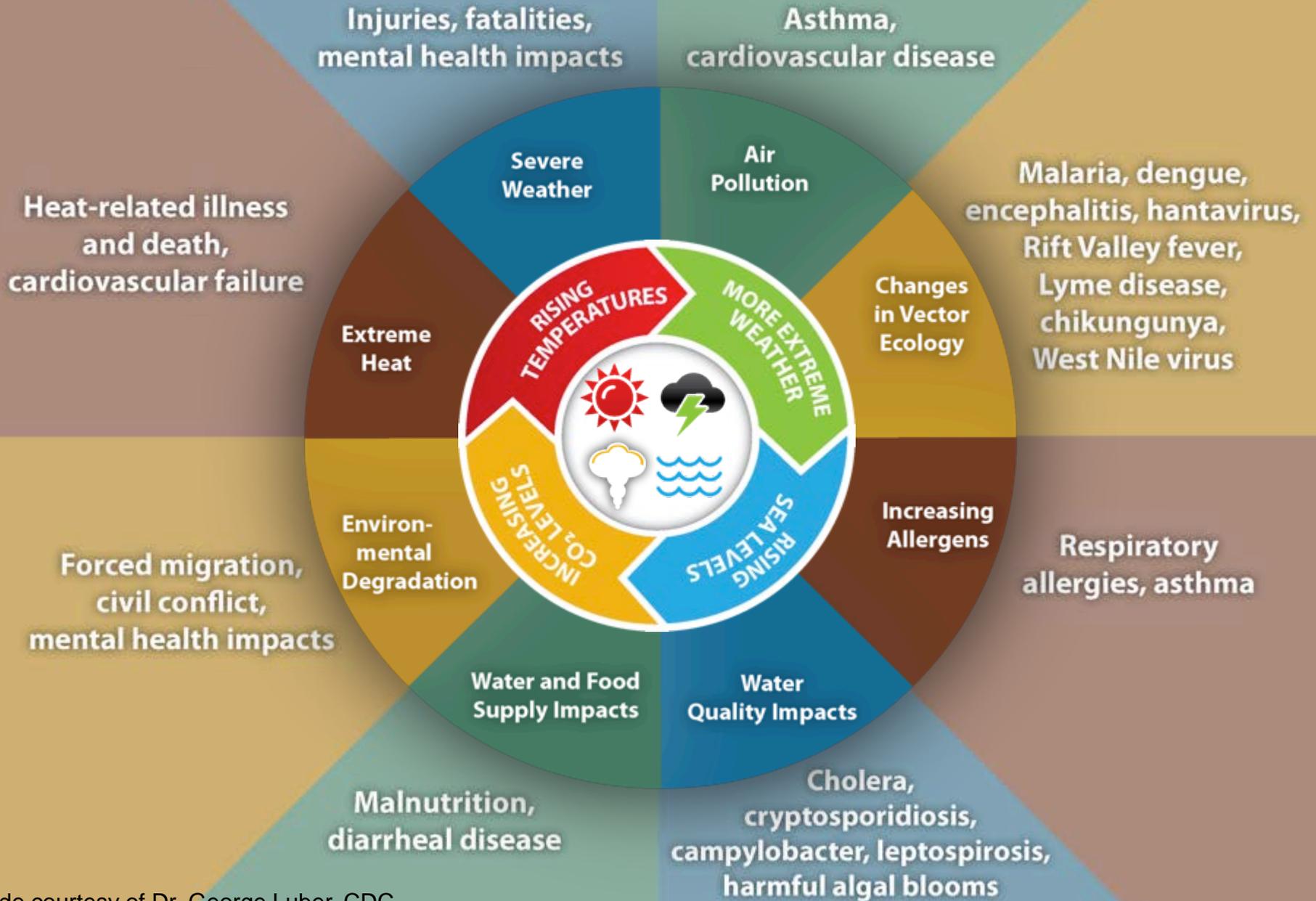
Figure 3: Map of Coastal North Carolina and Sea Level Rise (Source: Poulter and, Halpin 2008).

Extreme events trend upwards in US since 1980

Billion-Dollar Disaster Event Types by Year (CPI-Adjusted)

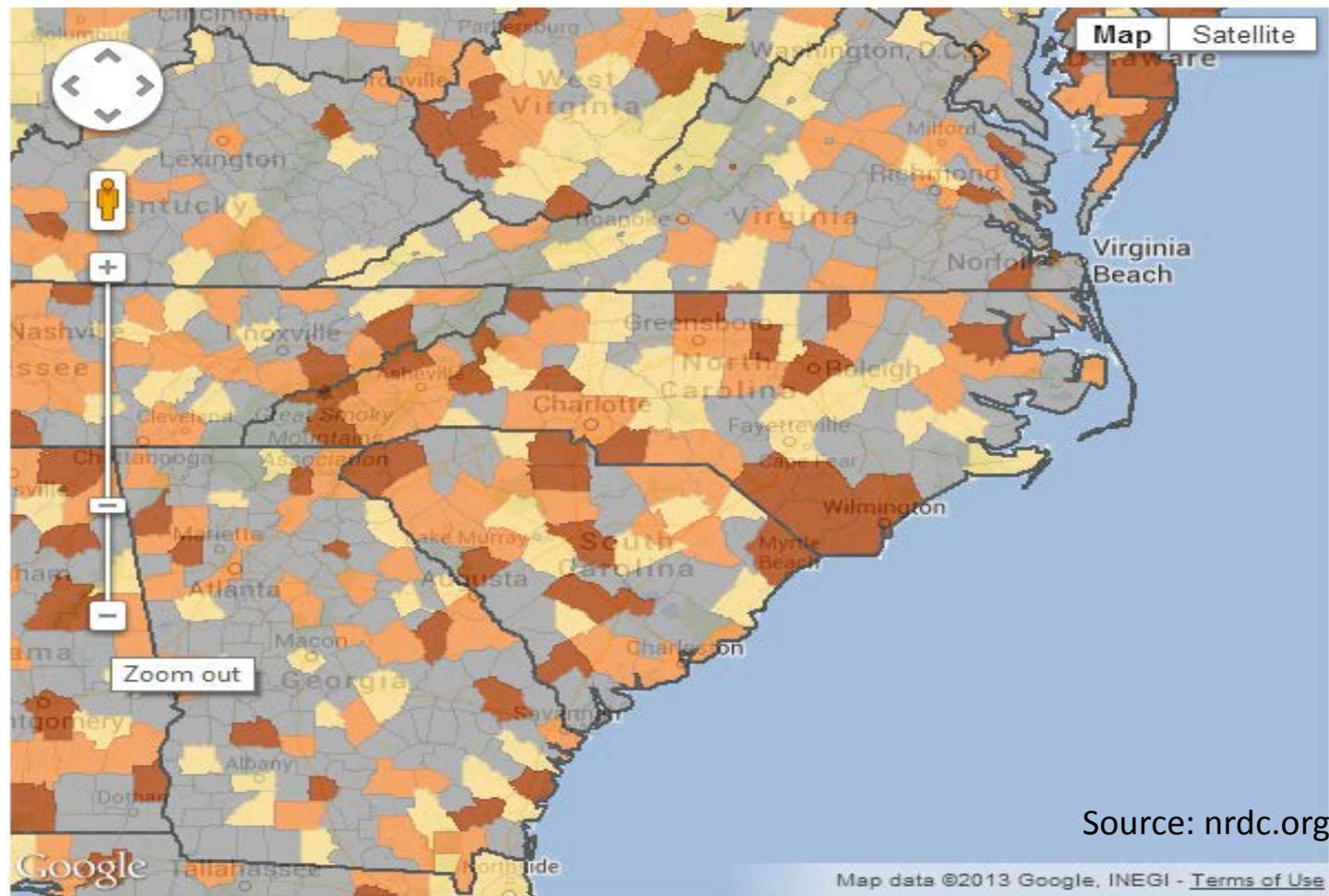


Impact of Climate Change on Human Health



- The 3 elements of vulnerability:*
- *Exposure*
 - *Sensitivity*
 - *Adaptive capacity*

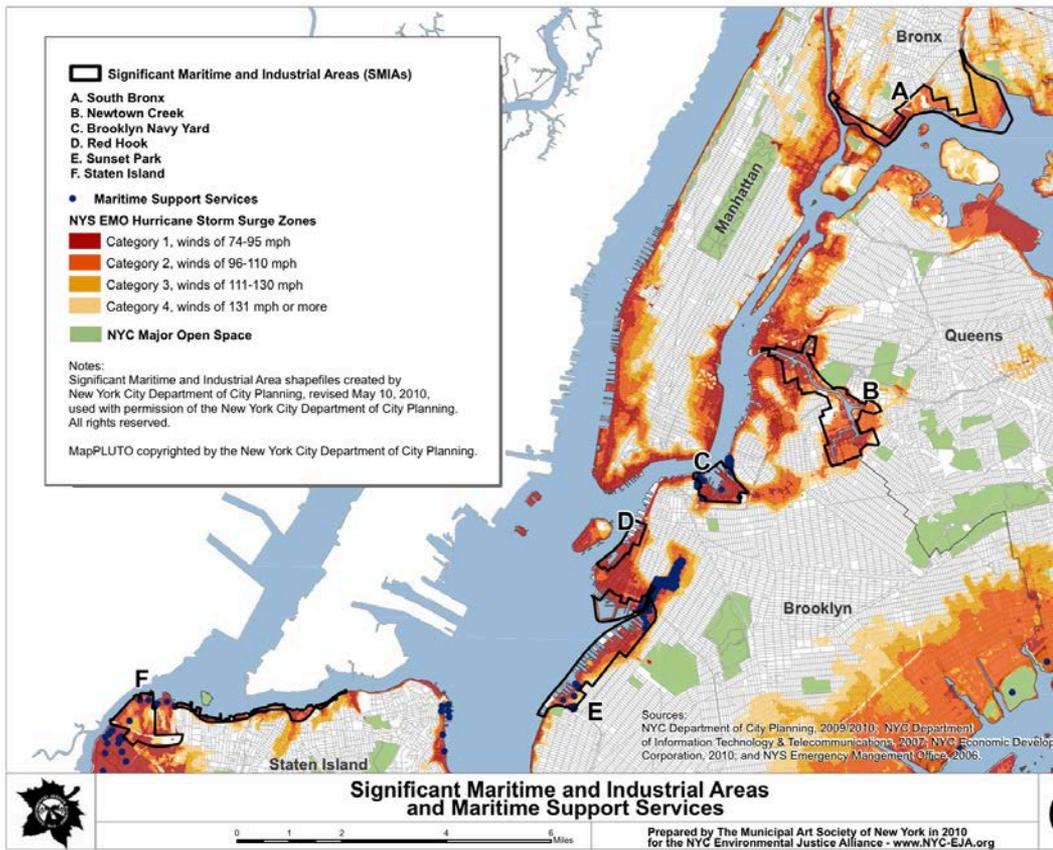
North Carolina Extreme Heat Vulnerability



Average Number, Summer Days Per Year of Extreme Heat, 2000-2009



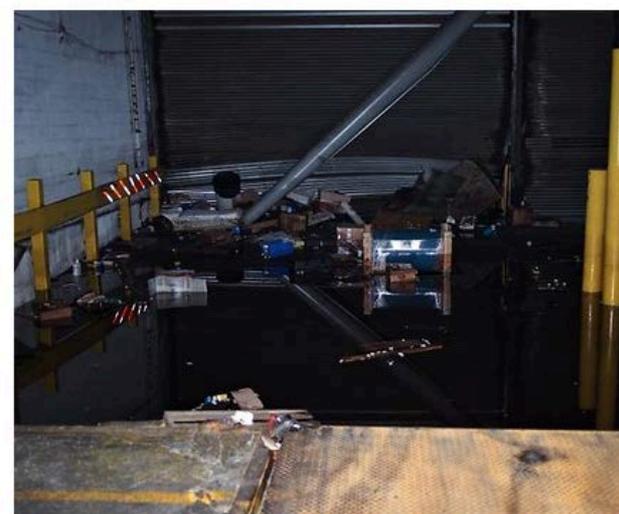
Vulnerability of NYC neighborhoods to chemical hazards and extreme events



Green
Energy, the Environment and the Bottom Line

As Floods Recede, Superfund Neighborhoods Fear Contamination

By MIREYA NAVARRO NOVEMBER 13, 2012 5:23 PM



Davis & Warshaw The flooded loading bay at Davis & Warshaw, a plumbing supply business in Maspeth, Queens. Workers are handling the cleanup as if the site w

Outdoor workers and heat stress- high exposures



TABLE. Number, percentage, and estimated average annualized rate* of occupational heat-related deaths among crop workers, by selected characteristics — United States, 1992–2006

Characteristic	No.	(%) [†]	Total no. of workers [§]	Rate
Total	68	(100)	17,227,000	0.39
Industry category				
Crop production	52	(76)	14,454,000	0.36
Vegetable and melon farming	15	(22)	— [¶]	—
Fruit and tree nut farming	11	(16)	—	—
Other crops**	19	(28)	—	—
Other/Unspecified	7	(10)	—	—
Support activities	16	(24)	2,716,000	0.59
Age group (yrs)				
20–34	16	(24)	4,616,000	0.35
35–54	37	(54)	6,907,000	0.54
≥55	15	(22)	4,589,000	0.33
Region of birth				
Mexico/Central and South America	27	(40)	—	—
Other regions outside United States	10	(15)	—	—
Unknown	31	(46)	—	—
Month of injury				
June	11	(16)	19,487,000	0.06
July	40	(59)	20,143,000	0.20
August	12	(18)	19,964,000	0.06
Other months	5	(7)	—	—
Time of incident				
Before 1:00 p.m.	13	(19)	17,227,000	0.08
After 1:00 p.m.	46	(68)	17,227,000	0.27
Unknown	9	(13)	—	—
State of injury				
California	20	(29)	4,041,000	0.49
Florida	6	(9)	809,000	0.74
North Carolina	13	(19)	551,000	2.36
Other states	29	(43)	—	—

* Per 100,000 workers.

[†] Percentages for certain characteristics might not add to 100 because of rounding.

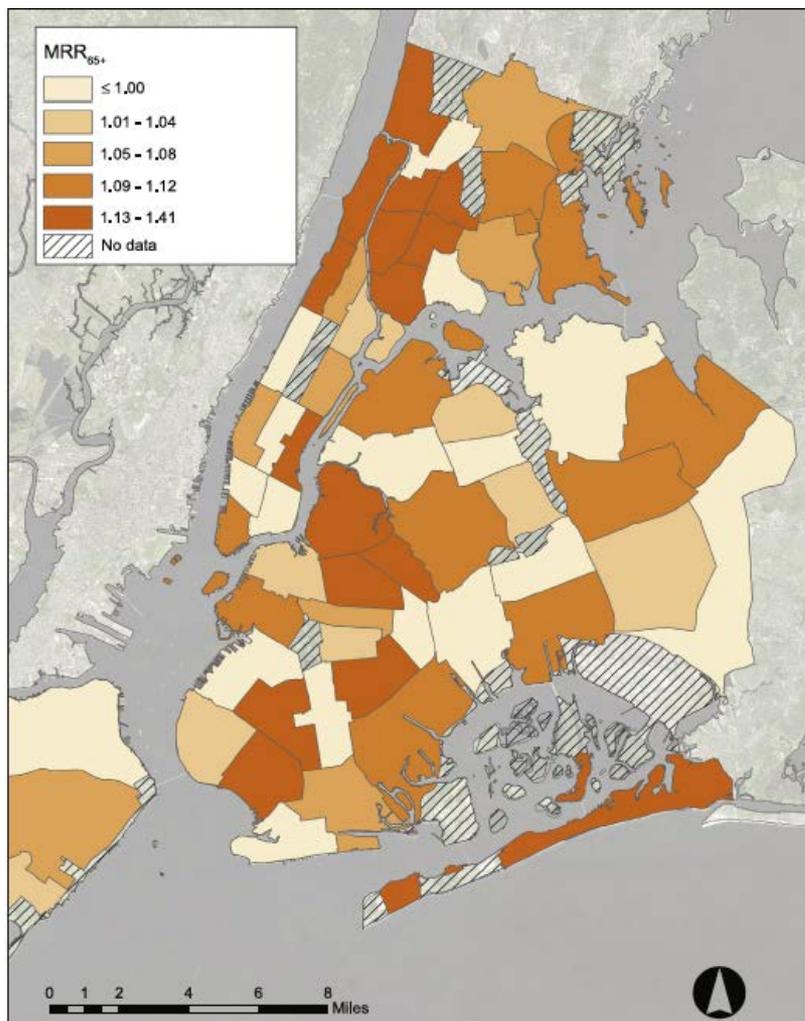
[§] Annual national average estimates (totaled for 15 years) of employed civilians aged ≥15 years, based on the Current Population Survey. Monthly total number of workers are monthly national average estimates. State total number of workers are annual state average estimates. Numbers are rounded to thousands.

[¶] Labor force data not available.

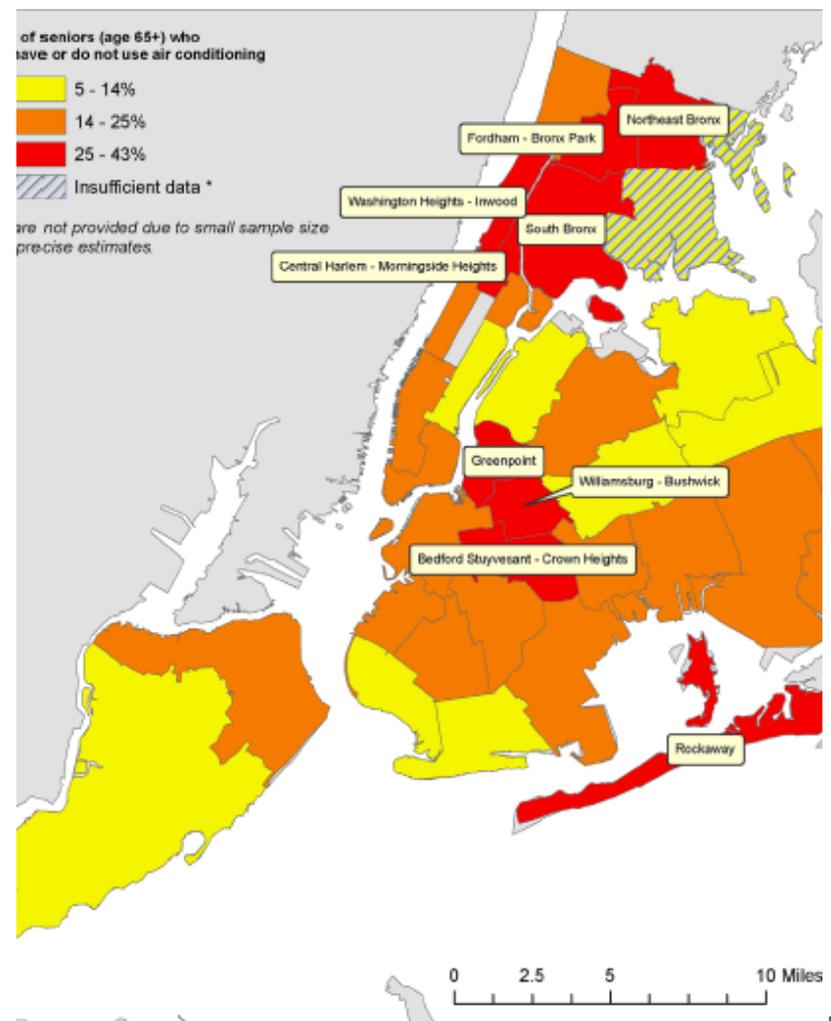
** Includes crops such as cotton, tobacco, sugarcane, and hay; excludes oilseeds and grains.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5724a1.htm>

Heat: mortality in NYC linked to lack of air conditioning



Klein Rosenthal et al., 2014

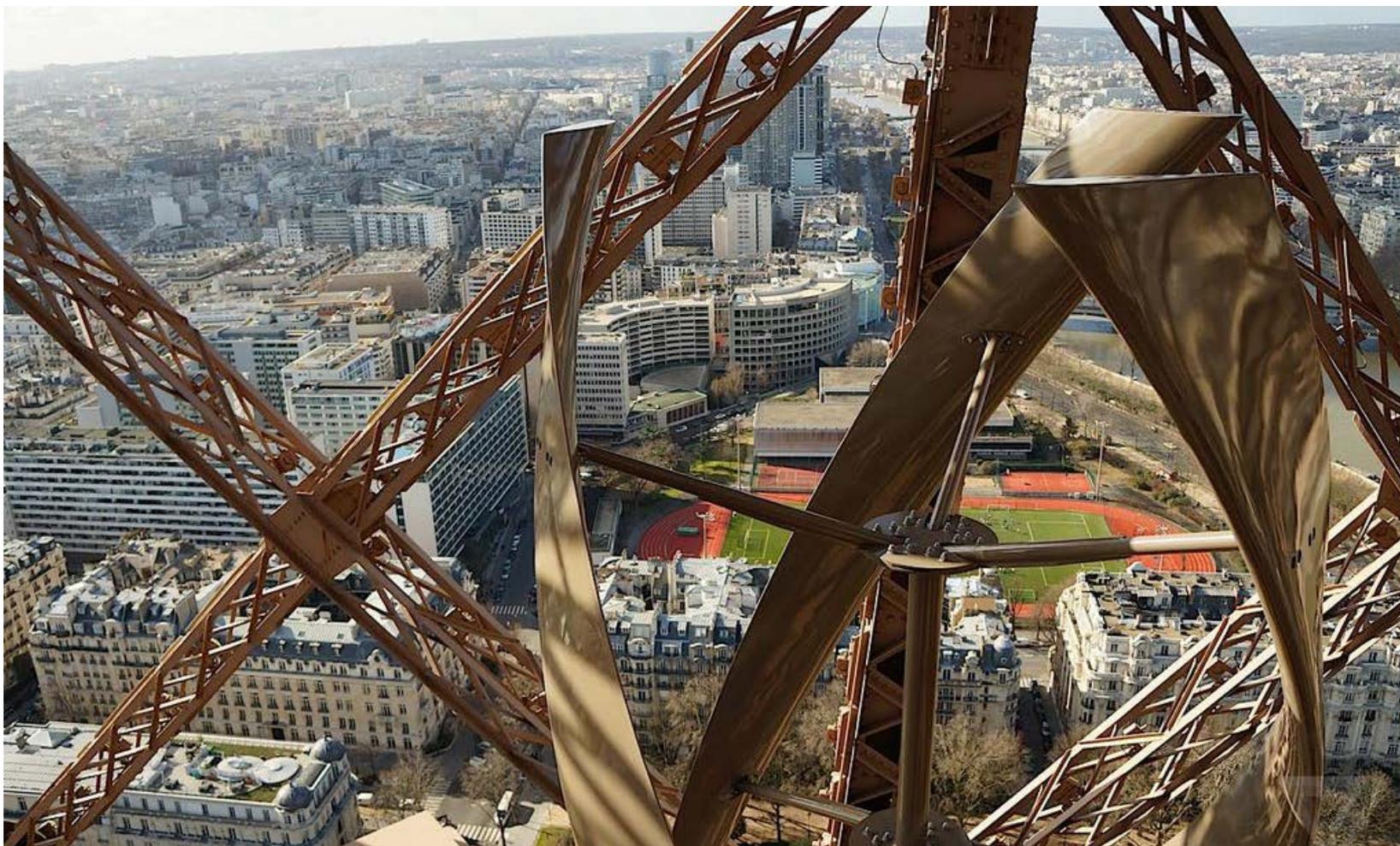


Health disparities contribute to climate vulnerability

- Deaths and hospitalizations increase with heat in people with:
 - Cardiovascular diseases
 - Diabetes
 - Respiratory Diseases
 - Psychiatric
- Rates of diseases are associated with race and poverty
 - Stroke and cardiovascular mortality
 - Diabetes
 - Asthma
 - “Mentally unhealthy days”

Reducing health disparities: part of the climate justice agenda

Transformation is coming... equity must be part of it



Green Jobs, Sustainable, Healthy Communities



Summary

- Climate justice, health disparities, sustainable communities are all tightly linked
- Climate change brings significant threats but can also force transformative positive change for health
- New tools, assessments, and data resources can help communities protect and promote health



Thank you!



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National Toxicology Program
U.S. Department of Health and Human Services



<http://www.niehs.nih.gov/geh>
<http://www.globalchange.gov/what-we-do/link-climate-health>

